IRS Registrar Guide 8.0

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Welcome to IRS!

The IRS Registry Platform consists of a number of integrated elements including:

- a feature-rich web portal for managing and administering domain names
- redundant servers on unique subnets with high-performance DNS infrastructure
- powerful security features to keep an always-on service fully operational

What Is IRS?

IRS is a registry platform that functions within a framework of services and features. This includes the operation of a data center capable of managing and administering large numbers of domain name registrations.

IRS is more than just data servers as it includes a set of redundant servers on unique subnets with a global authoritative DNS infrastructure that delivers high-performance responses to end user DNS queries. Related services integrate customer support, sales channels, documentation, and critical monitoring and management processes that allow you to keep your domain name registration business running smoothly.

The IRS registry platform helps you to operate your business with the following features:

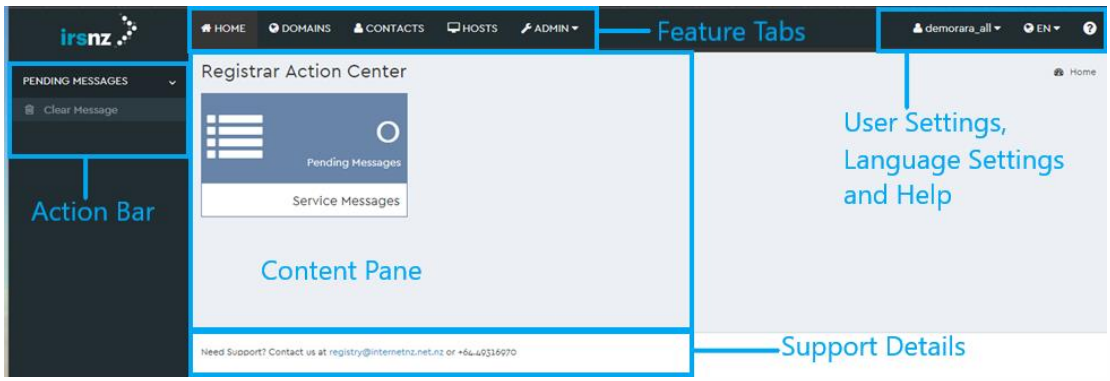
- an independent hardware, networking, and administrative system
- servers and DNS infrastructure provide for the delivery of the highest levels of performance
- the use of scalable and modular servers adhering to industry best practices in a secure data center to maintain an always-on service

The IRS Portal (A Brief Tour)

The IRS web portal is designed to provide you with extensive features and a user-friendly interface that speeds your domain name management tasks.

The IRS portal includes the following elements:

- **Feature Tabs** - select a tab to access one of the primary features in IRS (for example, **Domains** or **Contacts**).
- **User Settings** - click on the username to access User Settings to configure your user account or to Sign Out of the portal.
- **Language Settings** - select the language in which you would like to view the IRS portal.
- **Context Sensitive Help** - click the question mark button to view IRS help.
- **Action Bar** - within each individual feature tab, different actions can be selected.
- **Content Pane** - the primary display area of the IRS portal.
- **Support Details** - contact information should you require additional IRS support.



IRS Connections

Use the following links to access the IRS portal in OT&E and production.

OT&E Testing

When you must test upcoming changes to the IRS system, or if you would like to test changes made to your own system, OT&E provides a safe testing area to validate that all functionality is working as expected before going into production. System updates are usually made to the OT&E environment one week before the updates are made in production to provide a week of testing time.

Access the IRS OT&E platform using the following interface links:

- Web interface: **https://ote.irs.net.nz/portal**
- EPP interface: epp.ote.irs.net.nz port 700
- TBR Droplist System: tbr.ote.irs.net.nz port 700
- WHOIS interface: whois.ote.irs.net.nz port 43

Note: IP addresses must be included on the allowlist to access the IRS platform for the EPP, portal, or TBR testing.

Production

Access the IRS Registry platform using the following interface links:

- Web interface: **https://irs.net.nz/portal**
- EPP interface: epp.irs.net.nz port 700
- TBR droplist system: tbr.irs.net.nz port 700
- WHOIS interface: whois.irs.net.nz port 43

Note: In production, including IP addresses on the allowlist is required to execute EPP commands but is not required to access the portal.

For details about how to maintain your IP address on the allowlist, see "IP Allowlist Settings" on page 77.

Your IRS Account

Accessing IRS's domain name management features can be accomplished through one of three methods:

1. through the web portal with a IRS user account
2. through the EPP (Extensible Provisioning Protocol) using an EPP account
3. through API

The IRS web portal and API is designed for human operators while automated processes use the EPP service. Separate user accounts are required to access the web portal, API and EPP services with user accounts designated as being Portal Account Type, EPP Account Type or API Account Type. You can create the types of accounts from within the IRS portal.

The IRS portal allows you to manage and update your account information. If you have administrative privileges, you can also use IRS to create new users or change the privileges assigned to an existing user account.

Initial configuration of the IRS portal and accounts will be performed by the Registry after which you can create and manage your own user accounts. If you are experiencing difficulties with the access credentials for your Portal Account, EPP Account or API Account, please contact the IRS Registry support team.

Note: The number of failed login attempts is limited to five unsuccessful attempts (within a 12-hour period). The system then automatically locks you out of that account and you will not be allowed to login for 15 minutes.

User Accounts

The following are the different types and roles for IRS user and API Client accounts:

Registrar Accounts

Portal Realm

- **Admin** - can manage Registrar information, Registrar contacts, users, Droplist connections and IP allowlist; cannot manage domains, contacts, or hosts
- **Finance** - can view Registrar information and Registrar financial reports
- **Read-Only** - can view Registrar information domains, contacts, hosts, but cannot change any settings
- **Security** - has access to Registry Lock service options; this role must be assigned by a Registry user
- **Support** - can manage Registrar information, domains, contacts and hosts; cannot manage users or IP allowlists

EPP Realm

- **EPP** - has access to the EPP interface to execute commands

API Client Accounts

Registrar Accounts

- **Domain Info**- has access to the sendAuthCode endpoint API

User Account Information

IRS user accounts consist of a number of settings, full descriptions of which can be found in "Account Information" on page 85.

Modifying User Account Properties

You can modify some of the properties of your user account (for example, resetting your password) but you cannot delete your own user account.

To edit your account settings

1. In the IRS portal, click the user menu in the top right corner of the page that displays your account name.
2. Click **User Settings**.
3. In the **Edit User** page, modify the properties that you want to change.

   Note: You cannot modify the **Account Type**, **Username** or **Roles** properties. For more information, refer to "Account Information" on page 85.
4. Click **Update Profile**.

To display information about a specific action that affected your account

1. In the IRS portal, click the user menu in the top right corner of the page that displays your account name.
2. Click **User Settings**.
3. In the **Edit User** page, scroll down to the **History** section.
4. Click the **Action ID** of the specific action for which you want to review detailed information.

   Note: You can select the **Show only changed values** check box to reduce the **History Detail** dialog box so that it only displays those properties of the action that have been changed since the previous action.
5. In the **History Detail** dialog box, click **Close** when you are completed reviewing the information about the action.

Account Information

Portal/EPP User Account Information

IRS portal and EPP user account types consist of a number of properties including the following:

Info Section

Enabled

This option indicates whether or not the user account is activated and can be used. If this option is not selected, the user account is considered to be disabled and cannot be used.

Note: This option is only displayed when editing another user's account. This option is not displayed when editing the properties of your own user account.

Account Type

The type of account to be assigned to this user.

You cannot modify the **Account Type** property.

User Type

The type of user to be assigned to this user account. This field is only visible during a User Create. For more information, refer to "User Accounts" on the previous page.

Username

The unique identifier of the user account that is used when logging in.

You cannot modify the **Username** property.

User names must be from two (2) to sixteen (16) characters in length and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z,or numerals 0 to 9), underscores, hyphens, or @ characters.

First Name

The proper name of the individual for whom the account is created.

Last Name

The surname of the individual for whom the account is created.

Phone Number

The telephone number to be used to contact the individual for whom the account is created.

Email

The email address to be used to contact the individual for whom the account is created.

Notes

Additional text to record information about the user that is not provided in other property fields.

Security Section

Roles

The roles associated with the user account.

Registrar account Portal realm roles include:

- **RAR Admin**
- **RAR Finance**
- **RAR Read-Only**
- **RAR Security**
- **RAR Support**

Registrar account EPP realm roles include:

- **RAR EPP**

Note: The **Roles** property cannot be modified (and is read-only) when editing the properties of your own user account. This property can be modified when editing another user's account.

Two-Factor Authentication

Two-factor authentication is enabled for all users as part of IRS security measures. Users cannot modify the two-factor authentication setting.

If two-factor authentication has been enabled, but the user has not gone through the procedure to set it up yet, the words "Requires Setup" will appear beside the Two-Factor Authentication checkbox label. After the user follows the set-up procedure, the word "Active" appears beside the label. If two-factor authentication is enabled for the user, but that user has unchecked the check box, the label will be removed when the change is saved.

To set up two-factor authentication on a mobile device for the first time

Before you can set up two-factor authentication, make sure you have Google Authenticator or FreeOTP installed on your device.

1. Browse to the IRS portal.

2. Enter your username and password.

3. Click Login.

4. When the Mobile Authenticator Setup screen is displayed, start Google Authenticator or FreeOTP on your smart phone or tablet.

5. Scan the QR code displayed on the Mobile Authenticator Setup screen or type the security key displayed below it in Google Authenticator or FreeOTP.

6. Google Authenticator or FreeOTP will then display a security code on your smart phone or tablet.

7. Type the security code in the One-time code field of the Mobile Authenticator Setup screen.

8. Enter a name for your device. This is a free-form field you can use to identify your device.

9. Click Submit.

Reset Password

The security password to be used by this account in the **New Password** and **Password Confirmation**

fields.

Passwords must meet security requirements, which are set by the Registry.

Note: Passwords for EPP accounts have a maximum length of sixteen (16) characters and cannot use the ampersand (&) character.

Note: If you have forgotten your password and need to reset it from the login page, click on the Forgot Password link. An email will then be sent to you with a link to reset your credentials. When you click on this link the Update Password screen appears. If you are using two-factor authentication, you will first be asked to enter your one-time two-factor authentication code. If the code is correct, then the Update Password screen appears.

History Section

Historical data about actions that affected the user account.

Click on the **Action ID** to display more detailed information about individual actions.

Action ID

The unique identifier assigned to individual requests that affect the user account.

Action

The action performed in response to the request.

Source

The original source from which the action affecting the user account originates. This can be one of the following:

- **WEB** - the IRS web portal
- **SQL** - the Registry database

Modified

The date and time at which the request was made to the Registry.

Modified By

The originator of the request.

API Client Account Information

IRS API Client accounts consist of a number of properties including the following:

Info Section

Enabled

This option indicates whether or not the API Client account is activated and can be used. If this option is not selected, the account is considered to be disabled and cannot be used.

Account Type

The type of account being created. For API Client accounts, the account type is API.

You cannot modify the **Account Type** property.

User Type

The type of user to be assigned to this API Client account.

Username

The unique identifier of the API Client account that is used when logging in.

You cannot modify the **Username** property.

User names must be from two (2) to sixteen (16) characters in length and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z,or numerals 0 to 9), underscores, hyphens, or @ characters.

Notes

Additional text to record information about the API Client account that is not provided in other property fields.

Security Section

Roles

The roles associated with the API Client account.

Registrar account API realm roles include:

- **RAR Domain Info**

Two-Factor Authentication

Two-factor authentication cannot be set for API Client accounts.

Registry Services Concepts

IRS's management of a domain name registry is based on a number of concepts. For more information, see the following:

- "Dashboard" on the next page
- "Domain Name Life Cycle" on the next page
- "Droplist" on page 16
- "Email Templates" on page 22
- "Interested Party Contact: Message Delivery Form" on page 23
- "Object Status" on page 23
- "RDAP" on page 26
- "Registrar Recertification" on page 26
- "Registry Lock" on page 26
- "Roles (System, Registries and Registrars)" on page 28
- "Tags" on page 28

Dashboard

The IRS Action Center or "dashboard" is normally the first screen displayed when you log in to the IRS UI and provides quick access to features and current statistics relating to your registry business.

Your dashboard will display the following:

Service Messages

A list of the distributed service messages that have not been cleared.

Domain Transfers In

A list of the domain names that are currently in the process of being transferred to this Registrar.

Domain Transfers Out

A list of the domain names that are currently in the process of being transferred to a different Registrar.

Note: The Action Center will only display a maximum of 1,000 service messages at a time.

Dashboard Functionality

Certain common processes can be performed on the dashboard page.

Service Messages

To review service messages

1. In the IRS portal, click the **Home** tab.
2. Click **Service Messages**.
3. Click the **Previous**, **Next** or numbered buttons to display additional messages.

To clear service messages from the list

1. In the IRS portal, click the **Home** tab.
2. Click **Service Messages**.
3. Select the check box next to the messages that you want to remove or select the check box in the column header to select all of the messages.
4. In the action bar, click **Clear Message**.

Domain Name Life Cycle

The different stages of a domain life cycle are the states that a domain name passes through from the beginning of its life cycle (the available state) to the end of the life cycle (returning to the available state).

The IRS registry platform implements a domain life cycle in accordance with Section 3.1 of **RFC 3915**.

The stages of a domain life cycle are:

Available

The domain name is available for registration.

addPeriod

The grace period after which the domain name has been added to the registry. If the domain is deleted during this period, there is a refund for the cost of the registration.

pendingCreate

A domain name in this stage may be waiting for approval to be given before it can be registered.

registered

The domain name is registered and active.

renewPeriod

The grace period after a domain has been explicitly renewed by the Registrar. This grace period following a domain name renewal allows the Registrar to delete the domain if necessary and obtain a credit for the cost of the renewal.

autoRenewPeriod

This grace period occurs after a domain has been automatically renewed by the Registry. If the domain is deleted or transferred during this period, there is a refund for the cost of the renewal.

transferPeriod

The grace period after a domain name has been transferred from one Registrar to another. The transferPeriod is set to zero in IRS.

redemptionPeriod

The grace period following the deletion of a domain name from the Registry. During this period, the domain name no longer resolves and cannot be renewed but the Registrar has the option to use the restore command to return the domain name to the registered state.

pendingRestore

The period during which a domain name is in the process of being restored to the Registry after having been in the `redemptionPeriod` stage.

pendingDelete

This is the purge state where the domain name cannot be renewed under any circumstances and is in the process of being removed from the Registry database to become available when the period ends.

Life Cycle State Transitions

Depending on the different actions taken with a domain name in the Registry during its life cycle, it can transition from one stage to another in a number of different ways.

The image below illustrates the stages of a conventional domain name life cycle.

This image is based on the IETF standard defined in **RFC 3915**.

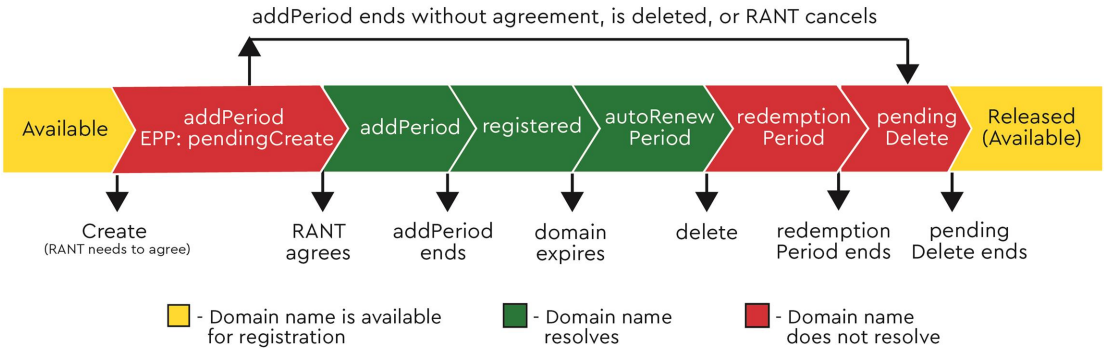
available *to* addPeriod

This occurs after the domain name has been created and added to the Registry.

addPeriod *to* pendingDelete

If a domain is created but then deleted during the addPeriod.

The image below illustrates a domain name life cycle for a domain that is not registered because of a failure while the domain name is in the `addPeriod/pendingCreate` stage.



addPeriod *to* registered

The grace period following the creation of the domain name ends.

addPeriod *to* renewPeriod

This transition occurs when the domain moves from the grace period after which the domain name has been added to the registry to the period after a domain has been explicitly renewed by the Registrar.

registered *to* renewPeriod

This transition occurs when a renewal request is submitted for an active domain name.

registered *to* autoRenewPeriod

If a Registry is configured for automatic renewal, a domain name makes this transition when it reaches its expiry date.

registered *to* transferPeriod

This transition occurs when a transfer request is submitted for an active domain name.

registered *to* redemptionPeriod

This transition occurs when a delete request is submitted for a registered domain name. It can also occur when an automatic renewal does not take place.

renewPeriod *to* registered

Following the successful renewal of a domain name and the end of the renewal grace period, the domain name returns to the `registered` stage.

renewPeriod *to* transferPeriod

Following the successful renewal of a domain name, the domain name has been transferred from one Registrar to another.

renewPeriod *to* redemptionPeriod

In the grace period following a domain name's renewal, a delete request is submitted causing the transition to `redemptionPeriod`.

autoRenewPeriod *to* registered

The domain returns to registered state when the automatic renewal period ends.

autoRenewPeriod *to* renewPeriod

During the grace period following a domain name's automatic renewal, an explicit renewal request is submitted for the domain.

autoRenewPeriod *to* transferPeriod

During the grace period following a domain name's automatic renewal, a transfer request is submitted for the domain.

autoRenewPeriod *to* redemptionPeriod

During the grace period following a domain name's automatic renewal, a delete request is submitted or the automatic renewal fails.

transferPeriod *to* registered

The grace period following the successful transfer of a domain name ends.

transferPeriod *to* renewPeriod

Following the successful transfer of a domain name, an explicit renewal request is submitted for the domain.

transferPeriod *to* redemptionPeriod

Following the successful transfer of a domain name, a delete request is submitted.

redemptionPeriod *to* transferPeriod

This transition occurs when a domain is transferred when it is in the redemptionPeriod.

redemptionPeriod *to* pendingDelete

The period following the end of the redemptionPeriod in which the domain name can no longer be restored.

redemptionPeriod *to* pendingRestore

During the grace period following the submission of a delete request, a restore request is submitted.

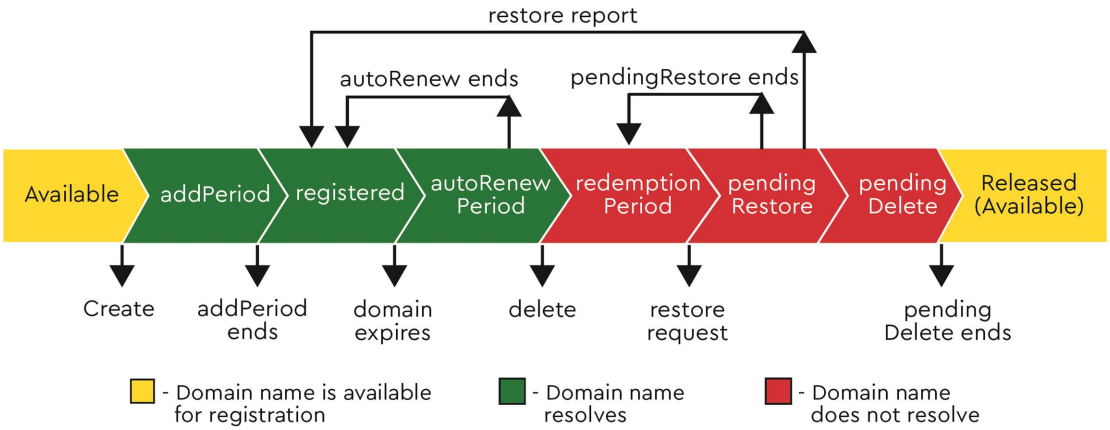
pendingRestore *to* redemptionPeriod

After transitioning to the pendingRestore stage following the submission of a restore request, a restore report request was not submitted before the pendingRestore period ended.

pendingRestore *to* registered

After transitioning to the `pendingRestore` stage following the submission of a restore request, a restore report will cause the domain name to transition to the `registered` state.

The image below illustrates a domain name life cycle for a domain that is restored.



pendingDelete *to* Available

The deletion of a domain name from the Registry is completed and the name is available to be registered.

Note: If the Droplist feature is enabled for the Registry, domain names that transition to a pendingDelete state will automatically be added to the next Droplist session.

Droplist

The Droplist function allows a Registry to manage the release of domain names that are about to become available again following the expiry of their current registration. Domain names added to the Droplist will become available to Registrars in a controlled fashion using Droplist sessions, periods during which domain names on the Droplist can be re-registered.

Note: This feature can be enabled or disabled by Registry or System-level users and may not be in effect for this Registry at this time.

A domain name that is added to the Droplist is simply a previously registered domain name that is about to be deleted from the Registry and is made available for re-registration during the Droplist session.

For Registries with the Droplist feature enabled, domain names are added to the Droplist automatically when they transition from `redemptionPeriod` to `pendingDelete`. If a domain name transitions from `addPeriod` to `pendingDelete`, it will not be added to the Droplist.

Domain names on the Droplist that are not claimed when the current Droplist session ends are released and are no longer in the Registry.

Domain names on the Droplist that were unsuccessfully claimed are moved to the next available Droplist session.

Credentials

To access the Droplist system you need an EPP user account. If you have an EPP user account, use the EPP credentials to connect. If you do not have an EPP user account, you may use the IRS portal to create the EPP user account. You can also use the IRS portal to create additional EPP user accounts to be used for Droplist sessions.

Droplist IP Addresses

Adding IP addresses to an allowlist is required to access the Droplist sessions. You can enter up to 10 IP addresses in the Droplist Settings section of the Registrar Settings page. If your IP address has not been identified as a Droplist IP address, your connection will be refused.

For details on setting up your IP addresses and Droplist Connections, see "Droplist Connections" on page 76.

Droplist Commands

There are two EPP commands available for use in the Droplist system: Domain Check and Domain Create.

Domain Check

The standard EPP Domain Check (with or without the Fee extension) may be used to ensure the availability of a domain either during or prior to the next Droplist session.

As part of the Domain Check command used during a Droplist session, a timestamp is added to the response so that Registrars can use it to compare against winning timestamps of Droplist claims and validate their timing for command rate limiting.

The following is an example of the timestamp response that appears in the <result> section of a Domain Check:

```
<extValue>
  <value>
     <fury:ciraCode>5614</fury:ciraCode>
  <value>
  <reason>2019-04-11T12:45:44:504Z</reason>
</extValue>
```

The following messages may occur when issuing the Domain Check command on a domain in the Droplist environment:

- Claims against domains in the current Droplist session that have not yet been claimed will return: `avail-l="true"`
- Claims against domains that are not in the current session or do not exist will return: `avail="false"` with the error message `8447 "Domain is not in the current Droplist session"`
- Claims against domains in the current Droplist session that have been claimed will return: `avail="false"` with the message `"REGISTERED"` as the reason
- Claims against domains that are in the process of being claimed in the Droplist session will return: `avail-l="false"` with the error message `8457 "This domain is being claimed"`

Domain Create

The Droplist session uses the standard Domain Create EPP command. The Create command may only be issued against domains that are in the current Droplist session. As a domain in a Droplist session is in a `pendingDelete` phase, a successful Droplist Create command will first delete the existing domain and then create it again with the new parameters. There is a special `addPeriod` duration specifically for domains created during a Droplist session, so once the domain has been created, it will remain in the Droplist `addPeriod` only as long as specified by the Registry.

As part of the Domain Create command used during a Droplist session, a timestamp is added to the response so that Registrars can use it to compare against winning timestamps of Droplist claims and validate their timing for command rate limiting.

The following is an example of the timestamp response that appears in the <result> section of a Domain Create:

```
<extValue>
  <value>
     <fury:ciraCode>5614</fury:ciraCode>
  <value>
  <reason>2019-04-11T12:45:44:504Z</reason>
</extValue>
```

The following messages may occur when issuing the Domain Create command on a domain in the Droplist environment:

- Claims against domains that do not exist will be rejected with the message `8448 "Domain is not in the Droplist system."`
- Claims against domains that do exist, but are not available for a Droplist session will be rejected with the message `"8448 Domain is not in the Droplist system."`
- Claims against domains that do exist, but are assigned to the next Droplist session, but the session is not yet active, will be rejected with the error message`8455 "Droplist Session is not currently open."`

- Claims against domains that do exist, but are assigned to a future (not active) Droplist session will be rejected with the message `8447 "Domain is not in the current Droplist session"`.
- Claims against domains that do exist and are assigned to the current Droplist session will succeed in being claimed on a first-come, first-served basis.
- Claims against domains that are in the process of being claimed in the Droplist session will be rejected with the message `8457 "This domain is being claimed"`
- The result of a successful Domain Create command will mark the domain as no longer available to be claimed in the Droplist session and any subsequent claim attempts will return the message `8458 "This domain has been claimed"`.
- Following a failed domain claim, subsequent requests to create the domain will return the message `8459 "This domain has been moved to the next session."`

The following table lists the possible Droplist error messages that may occur and outlines at what stage in the Droplist process they can appear.

Domain Exists in the Droplist System?		Available in which Session?		Domain is Claimed?			Session is Active?		Error Code	Message
Yes	No	Current	Future	InProcess	Complete	Failed	Yes	No		
	✓								8448	Domain is not in the Droplist system. Note Domains MUST be in the pendingDelete life cycle stage to be eligible for the Droplist. Domains that are available for registration should be requested outside the Droplist system using standard EPP connections or the portal.
✓		✓						✓	8455	Droplist session is not currently open.
✓			✓				✓		8447	Domain is not in the current Droplist session.

Domain Exists in the Droplist System?		Available in which Session?		Domain is Claimed?			Session is Active?		Error Code	Message
Yes	No	Current	Future	InProcess	Complete	Failed	Yes	No		
✓		✓		✓			✓		8457	This domain is being claimed. Note While the first CREATE request is being processed, other CREATE requests that are submitted before the inital request is complete will result in the "The domain is being claimed" message since the actual CREATE process is incomplete. Only when the initial CREATE has been processed successfully will the message "The domain has been claimed" be returned. If the initial CREATE request fails, the domain will be rescheduled for a subsequent session and the message "This domain has been moved to the next session" will be returned.

Domain Exists in the Droplist System?		Available in which Session?		Domain is Claimed?			Session is Active?		Error Code	Message
Yes	No	Current	Future	InProcess	Complete	Failed	Yes	No		
✓		✓			✓		✓		8458	This domain has been claimed. Note While the first CREATE request is being processed, other CREATE requests that are submitted before the initial request is complete will result in the "The domain is being claimed" message since the actual CREATE process is incomplete. Only when the initial CREATE has been processed successfully will the message "The domain has been claimed" be returned. If the intial CREATE request fails, the domain will be rescheduled for a subsequent session and the message "This domain has been moved to the next session" will be returned.

Domain Exists in the Droplist System?		Available in which Session?		Domain is Claimed?			Session is Active?		Error Code	Message
Yes	No	Current	Future	InProcess	Complete	Failed	Yes	No		
✓		✓				✓	✓		8459	This domain has been moved to the next session. Note 2. While the first CREATE request is being processed, other CREATE requests that are submitted before the initial request is complete will result in the "The domain is being claimed." message since the actual CREATE process is incomplete. Only when the initial CREATE has been processed successfully will the message "The domain has been claimed." be returned. If the initial CREATE request fails, the domain will be rescheduled for a subsequent session and the message "This domain has been moved to the next session." will be returned.

Rate Limits and Restrictions

For each Droplist session, you must adhere to the Registry's requirements for acceptable use, as well as the following rate limits and restrictions:

- You can only submit Droplist commands from pre-registered IP addresses.
- After a Domain Create command is submitted to the Droplist system, all subsequent Domain Create commands will result in an error for the next 5 seconds. This is the case whether the original functional call was successful or resulted in an error.

Creating a connection to the Droplist EPP server using the hello command sets the start time for the rate limit timestamp.

There is a 5-second rate limit on the Domain Create command. Each time that command is executed the Rate Limit Timestamp is updated with the time for that command plus 10 seconds.

Note: Performing the Login, Check or Logout commands will NOT affect the rate limit; you can log in at any time or execute a Check command and the rate limit timestamp will not change.

Performing a Domain Create will check against the timestamp for the Rate Limit time. If you execute a command within 5 seconds of the last timestamp, the system will extend the Rate limit time by 10 seconds for each command sent incorrectly. For example, if you send in a Domain Create before 5 seconds, you will not be able to send in another command for 15 seconds (i.e., 10-second penalty plus 5 second rate limit) from the time you send the last successful command. If you send multiple commands within that time period the effect is cumulative. For example, 2 commands would be 25 seconds from the time of the last successful command sent.

Following is a sample timeline for a Domain Create:

- 19:00:00 – Connection established (Rate limit timestamp starts)
- 19:00:01 – Login (Good; login is not counted against rate limit)
- 19:00:05 – Domain Create (Good; create was 5 seconds from Rate Limit Timestamp Start)
- 19:00:06 – Domain Create (Bad; this hits the rate limiting so it adds 10 seconds penalty, now the earliest you can send the next command is 19:00:20, which is 15 seconds after the last successful command)
- 19:00:07 – Domain Create (Bad; another 10 seconds added, now the earliest you can send is 19:00:30)
- 19:00:30 – Domain Create (Good; penalty was served, rate limit reset to 5 seconds)
- 19:00:35 – Domain Create (Good)

Consider connecting early (using the hello command) and keeping your session open with hello commands before the session. That way you will be ready with the domain create at the opening of the session.

As a reminder, the EPP timeout between commands is 300 seconds. If you do not send a command within that time period you will be disconnected.

Email Templates

Email templates in IRS are used for notification emails that are sent to Registrars, Admin Contacts and/or Registrants in response to specific configured events that affect the Registry such as domain creation, domain deletion, or contact update.

Note: These email templates are only available if they have been configured by the Registry.

The Registry configures email templates to send notification emails for the following triggers. These emails are sent to the Registrant, Admin Contact and the Registrar Admin Contact if requested. Any additional recipients are specified below.

Contact Update

A Registrant or an Admin's contact name or email address has been updated. The email will be sent to the previous contact's email address as well as to all of the to/cc/bcc recipients associated with the updated contact's domains.

Domain Auto Renew

A domain name's registration is automatically renewed.

Domain Create

A domain name object is created in the Registry.

Domain Delete

A domain name object is removed from the Registry. A different email is sent depending on whether the domain was deleted from addPeriod vs. Registered or autoRenewPeriod.

Domain Explicit Renew

A domain name's registration is manually renewed.

Domain Restore

A domain name has been restored from redemptionPeriod and is now back to registered.

Domain Update

A Registrant or an Admin contact has been updated for a domain. The email will also be sent to the previous contact's email address.

Transfer Approve

The transfer of domain names to a different Registrar is approved. The email will also be sent to the gaining Registrar and the losing Registrar.

Transfer Cancel

The transfer of domain names to a different Registrar is canceled. The email will also be sent to the gaining Registrar and the losing Registrar.

Transfer Reject

The transfer of domain names to a different Registrar is rejected. The email will also be sent to the gaining Registrar and the losing Registrar.

Transfer Request

A request is received to transfer a domain name to a different Registrar. The email will also be sent to the gaining Registrar and the losing Registrar.

Interested Party Contact: Message Delivery Form

WHOIS does not release information about Registrants or other associated contacts for a domain. Those wishing to contact individual Registrants may use the Interested Party Contact: Message Delivery Form (MDF). When this form is used, an interested party is able to contact a domain's Registrant without the registrant details ever being exposed to the sender.

The Message Delivery Form is a three step process:

- The interested party accesses the Message Delivery Form and enters the domain name to verify it's a valid, private domain. They then enter their contact details and message, and submit the form.
- The system now sends a confirmation email to the sender to verify the validity of the email address they entered. Inside this email is a confirmation link and a date. The sender has seven (7) days to use this link. After this, it expires and the sender must begin the process again.
- When they click the link in the confirmation email, the email is sent to the registrant without ever revealing Registrant information and an email is sent to the sender stating that the email has been successfully sent.

This provides total privacy of the Registrant's information while still allowing contact to be made. However, there is no guarantee to the sender that the Registrant will receive the email and the Registrant is under no obligation to respond to this email.

There are limits to the number of requests that can be made to an individual contact within 24 hours or that can be sent from a single IP address within 24 hours.

Note: When the Registrant does reply to the interested party, they have now revealed their private information to the sender and they have done so by choice, so there are no further requirements that their information remain hidden to that sender.

Object Status

In accordance with **RFC 5731**, **RFC 5732**, and **RFC 5733**, the IRS Registry Platform uses status values to manage registry objects. Registry objects to which status values can be assigned are Domains, Contacts, and Hosts. When a status value is assigned to a registry object, this can affect the actions that can be taken with the object. For example, a

Contact with the `clientDeleteProhibited` status assigned to it could not be removed from the Registry by a Registrar.

Status Values

Status values that can be assigned to Domains, Contacts, or Hosts include the following:

Restriction Status Values

Client restriction status values are assigned by the Registrar while server restriction status values are either automatically assigned by IRS or manually assigned by a system-level user.

clientUpdateProhibited

This status prevents properties of the object in the Registry from being modified and can be assigned to Domains, Contacts, or Hosts.

clientDeleteProhibited

This status prevents the object from being removed from the Registry and can be assigned to Domains, Contacts, or Hosts.

clientRenewProhibited

This status prevents Domains from being renewed and cannot be assigned to either Contacts or Hosts.

Note: A domain with the `clientRenewProhibited` status is still subject to automatic renewals as this status will only prevent manual or explicit renewals.

clientTransferProhibited

This status prevents Domains from being transferred and cannot be assigned to either Contacts or Hosts.

For IRS, Registrars are not permitted to set clientTransferProhibited status.

serverUpdateProhibited

This status prevents the object in the Registry from being modified and can be assigned to Domains, Contacts, or Hosts.

serverDeleteProhibited

This status prevents the object from being removed from the Registry and can be assigned to Domains, Contacts, or Hosts.

serverRenewProhibited

This status prevents Domains from being renewed and cannot be assigned to either Contacts or Hosts.

Note: A domain with the `serverRenewProhibited` status is prevented from being subject to automatic renewal.

serverTransferProhibited

This status prevents Domains from being transferred and cannot be assigned to either Contacts or Hosts.

Pending Status Values

Pending status values are automatically assigned by IRS to indicate that an operation affecting an object has been started but has not been completed. Operations affecting objects in IRS can be delayed for a number of reasons such as a requirement for review and approval. As the values are assigned or removed automatically, they cannot be configured manually.

pendingCreate

The object has been initially created in IRS but its addition to the Registry has not been completed. This status can be assigned to Domains or Contacts.

pendingDelete

The object is in the process of being deleted in IRS but its removal from the Registry has not been completed. This status can be assigned to Domains, Contacts, or Hosts.

pendingRenew

The renewal of a domain has been initiated in IRS but has not been completed. This status cannot be assigned to Contacts or Hosts.

pendingTransfer

The transfer of a domain has been initiated in IRS but has not been completed. This status can be assigned to Domains, Contacts, or Hosts.

pendingUpdate

Modification of the properties of an object has been initiated in IRS but has not been completed. This status can be assigned to Domains, Contacts, or Hosts.

Miscellaneous Status Values

clientHold

Assigned by the Registrar, this status stops the Registry from activating a Domain in DNS which means that the domain name will not resolve. This status cannot be assigned to Contacts or Hosts.

serverHold

Automatically assigned by IRS or manually assigned by a system-level user, this status stops the Registry from activating a Domain in DNS which means that the domain name will not resolve. This status cannot be assigned to Contacts or Hosts.

inactive

This status is assigned to a Domain that is not associated with any Hosts which means that the domain name is not activated in DNS and will not resolve. This status cannot be assigned to Contacts or Hosts.

ok

This is the normal status value for an object that has no pending operations or restrictions and is automatically assigned or removed by IRS as other status values are assigned or removed.

linked

Automatically assigned by IRS, this status shows that the object (Contact or Host) is linked to at least one domain. This status can be assigned to Contacts or Hosts.

Note: The linked status for contacts or hosts is applied by monitoring domain changes asynchronously. As a result, there will be a slight delay before the correct status is displayed.

Note: For more information on domain name status values, refer to **https://www.icann.org/resources/pages/epp-status-codes-2014-06-16-en**.

RDAP

Registration Data Access Protocol (RDAP) is a protocol that delivers registration data like WHOIS, but its implementation will change and standardize data access and query response formats. RDAP has several advantages over the WHOIS protocol, including support for internationalization, secure access to data, and the ability to provide differentiated access to registration data.

The RDAP service allows you to query for **Domain**, **Nameserver**, and **Entities** (Registrars) using a query for an exact match. For example, a domain lookup for `example.nz` returns information if `example.nz` exists.

Internationalized Domain Names (IDN) are allowed when searching for a domain or host name by entering either the U-label or A-label when specifying the object name.

For more information, see **https://www.icann.org/rdap**.

Registrar Recertification

Please refer to the **Domain Name Commission** (DNC) website for details on registrar recertification.

Registry Lock

The Registry Lock service helps to protect domains that are vulnerable to malicious actors or that are less tolerant of unintended changes that may affect stability and availability. It helps prevent unintended changes to the configuration, resolution and stability of a domain name.

Users with Registry Security or Registrar Security roles can apply the Registry Lock service to lock a domain. The Registrar cannot make changes to the locked domain without following specific authentication and verification protocols. When this service is enabled, domains can be temporarily unlocked so that any authorized changes can be made. Once these changes are made, domains can then be relocked.

Registry Lock will not be available if there is a block without override tag applied to the Registry Lock Buy event for the domain. If there is a block with override tag applied to the Registry Lock Buy event, users with the correct permissions will be able to approve or reject pending requests.

When Registry Lock is applied to a domain name, no attributes of the domain can be changed and the domain cannot be transferred or deleted. The locked domain can still be renewed, however. When enabled, Registry Lock applies locks to the domain name that reject requests submitted to the Registry to delete, transfer or edit the domain name information. The service may also lock the domain name's contact and/or hosts if this option is selected while buying or locking the domain.

Registry Lock Billing

When the Registry Lock Service is activated, it is auto-renewed annually with its associated domain name on the domain's anniversary. If the domain has been registered or renewed for multiple years, the annual fee for the Registry Lock Service is still charged on the domain's anniversary. If the Registrar does not have enough funds for the renewal in its prepaid account, the lock is removed from the domain.

Registry Lock will not renew if there is a block tag applied to the Registry Lock Renew event for the domain. If there is a block with override tag applied to the Registry Lock Renew event, however, users with the correct permissions will be able to approve or reject pending Registry Lock Renew requests.

If the Registry Lock Service is purchased for a domain during the year, there will be a prorated charge based on the domain anniversary date. Any associated premium or discount tags connected to the purchase will be prorated as well.

If a domain that does have Registry Lock is deleted during the Auto Renew Period, then the Registrar will be refunded both the domain renewal fee and the Registry Lock fee. The exception to this is if Registry Lock was purchased while the domain was in Auto Renew, and then subsequently deleted, the Registry Lock fee will not be refunded.

If the Registry Lock is canceled at any other time, the Registry Lock fee will not be refunded.

Block - Registry Lock Buy Tags

If a **Block - Registry Lock Buy** tag that is not configured with **Allow Override** is applied to a domain name, Registry Lock will be unavailable for purchase. Registry Lock can, however, be manually purchased by Registry and system-level users if the associated **Block - Registry Lock Buy** tag has been configured with the **Allow Override** setting.

If a **Block - Registry Lock Buy** tag configured with **Allow Override** is applied to the domain name, the following will occur if a domain name Registry Lock Buy request is submitted:

1. The `pendingUpdate` status will be assigned to the domain name.
2. The Registrar will be charged the Registry Lock Buy fee. Registry Lock will not be applied until the request is approved. If the request is rejected, the fee will be refunded.
3. An email notification message will be sent to the Registry indicating that the request has been submitted.
4. No email notification messages will be sent to either the Registrar or Registrant.

If the request is manually approved by a Registry or system-level user, the following will occur:

1. The `pendingUpdate` status will be removed from the domain name.
2. `serverDeleteProhibited`, `serverTransferProhibited` and `serverUpdateProhibited` will be applied to the domain in addition to any existing statuses.
3. A notification message will be sent to the Registrar indicating that the Registry Lock Buy request has been approved.
4. If configured, notification email messages will also be sent to selected recipients.

If the request is rejected by a Registry or system-level user, the following will occur:

1. The `pendingUpdate` status will be removed from the domain name.
2. Registry Lock and associated statuses will not be applied to the domain.
3. A notification message will be sent to the Registrar indicating that the Registry Lock Buy request has been rejected.

Block - Registry Lock Renew Tags

If a **Block - Registry Lock Renew** tag that is not configured with **Allow Override** is applied to a domain name, Registry Lock will be unavailable for renewal. Registry Lock can, however, be manually renewed by Registry and system-level users if the associated **Block - Registry Lock Renew** tag has been configured with the **Allow Override** setting.

If a **Block - Registry Lock Renew** tag configured with **Allow Override** is applied to the domain name, the following will occur if a domain name Registry Lock Renew request is submitted:

1. The `pendingUpdate` status will be assigned to the domain name.
2. The Registrar will be charged the Registry Lock Renew fee. Registry Lock will not be renewed until the request is approved but the domain will remain locked. If the request is rejected, the fee will be refunded.
3. An email notification message will be sent to the Registry indicating that the request has been submitted.
4. No email notification messages will be sent to either the Registrar or Registrant.

If the request is manually approved by a Registry or system-level user, the following will occur:

1. The `pendingUpdate` status will be removed from the domain name.
2. Domain statuses remain as they were and the lock renewal date is updated.
3. A notification message will be sent to the Registrar indicating that the Registry Lock Renew request has been approved.
4. If configured, notification email messages will also be sent to selected recipients.

If the request is rejected by a Registry or system-level user, the following will occur:

1. The `pendingUpdate` status will be removed from the domain name.
2. The Registry Lock is removed from the domain.
3. A notification message will be sent to the Registrar indicating that the Registry Lock Renew request has been rejected.

Roles (System, Registries and Registrars)

Administration of a domain name registry using IRS is carried out through a variety of different roles in terms of how domain names are managed.

For IRS, the primary roles are:

- **Registry** - A Registry is a database of domain names and the associated Registrant information that allows third party entities to request administrative control of a domain name.
- **Registrars** - The Registrar is a commercial entity that manages the reservation of domain names. A domain name Registrar using IRS must be accredited. Management of domain names using IRS is carried out in accordance with the guidelines of the designated domain name registries.
- **Registrants** - The Registrant is the entity that has the authority to use and manage the domain name.

Warning: The current status of the associated Registrar (`Active`, `Applied`, `Restricted`, or `Inactive`) may apply limitations or restrictions on IRS functionality.

Tags

Tags are used as identifiers either for a specific domain name or for all domains containing specified characters. Tags can be used to indicate prices that are different from the default values, to block specific domain names, or simply to associate multiple domain names with each other.

There are several different types of tags including:

- **Block** - used to restrict any actions from being carried out with specific domain names.
- **Discount** - used to override default prices by applying discounts.
- **Discount - Term** - used to override default prices by applying discounts that are based on registration or renewal terms.
- **Group** - used to associate a number of domain names for organizational purposes.
- **Level** - used to manage the registration of third-level or lower level domain names (for example, `rocket.space.nz`).
- **Premium** - used to override default prices by applying a price increase for each term selected.
- **Premium - Single Charge** - used to apply a one-time markup charge for a domain registration in addition to the default price regardless of how many terms are selected.

Tags can only be configured at the Registry level.

Domains

IRS's core functionality revolves around the management and administration of domain names.

The **Domain** tab in the IRS portal provides the following features for managing domain names:

- "Domain Search" on the facing page - allows you to perform a search for a single domain name or conduct searches to check the domain name availability for multiple domain names.
- "Domain Information" on page 33 - the properties associated with an existing domain.
- "Creating Domains" on page 39 - allows you to create a new domain name in the Registry.
- "Edit Domains" on page 41 - allows you to modify a domain in the Registry. You can add, delete or modify the association of the domain with hosts and contacts.
- "Transfer Domains" on page 46 - allows you to transfer the sponsorship of a domain from another Registrar to yourself. The Registry can also transfer domain names on behalf of another Registrar.
- "Renew Domains" on page 43 - allows you to extend the validity period of a domain.
- "Delete Domains" on page 44 - allows you to delete a domain name from the Registry.

- "Restoring Domains" on page 47 - allows you to restore a domain to the Registry that is currently in the Redemption Grace period.

Note: Some of the options listed above are only available to specific types of user accounts or when certain conditions are met. For example, domains with a `transferProhibited` status cannot be transferred.

Domain Privacy

Registries provide contact information to the WHOIS database for every domain name that is registered. Security of personal information for Registrants can be maintained, however, if privacy services are provided where the information submitted for WHOIS is hidden. For more information about WHOIS, see "Searchable WHOIS" on page 179.

For more information about Domain Privacy, see Domain Privacy.

Domain Information

For each individual domain, IRS provides the ability to display detailed information about the domain itself and also every specific action that affects the domain.

To display detailed information about an individual domain

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name for which you want to review information.
3. Click the name of the domain.
4. In the **Edit Domain** page, review the information about the domain.

To display information about a specific action that affected an individual domain

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name for which you want to review information.
3. Click the name of the domain.
4. In the **Edit Domain** page, scroll down to the **History** section.
5. Click the **Action ID** of the specific action for which you want to review detailed information.

   Note: You can select the **Show only changed values** check box to reduce the **History Detail** dialog box so that it only displays those properties of the action that have been changed since the previous action.
6. In the **History Detail** dialog box, click **Close** when you are completed reviewing the information about the action.

Domain Search

The **Domain Search** functionality allows you to perform searches for individual domain names or you can conduct searches to simultaneously check the availability of multiple domain names.

Note: If you perform a search for a domain name that does not exist in the registry, IRS will display the **Domain Name** and no other information. You can click on the name to start the domain name creation process. For more information, refer to "Creating Domains" on page 39. This will not function if a particular domain name has been assigned the tag `restricted-blocked` as domains associated with that tag cannot be created.

If you perform a search for a domain name that is invalid for any reason, IRS displays the name of the domain in the **Domain Name** column and `Invalid` in the Life Cycle State column. For information about valid domain names, see "Domain Information" on page 33.

Special Notes on Performing Searches

1. To perform a search for an IDN (Internationalized Domain Name), you can type the domain name in either **A-label**[1] or **U-label**[2] format.
2. Searches can be performed for multiple domain names by separating them with a space character in a Basic Search. IRS will search for all of the search names included in the search string. For example, typing `123.nz 456.nz` in the **Domain Search** field will return two separate results, one for each domain name.
3. When a domain is entered without an extension, all levels that match that domain name will be returned. For example, entering `mydomain` will return `mydomain.nz`, `mydomain.co.nz`, `mydomain.edu.nz`, etc. as determined by the zone level tags created at the Registry level.

Limitations

1. Advanced Search requires that criteria be configured for each field.
2. To properly implement a domain name exclusion (using NOT EQUAL) in an Advanced Search, you must include the entire domain name. For example, to exclude the domain "dnssec.nz', you must configure the query as "NOT EQUAL dnssec.nz". Configuring the query as "NOT EQUAL dnssec" would not exclude the domain name.
3. To type a date criteria in an Advanced Search, it must be typed in the following format: YYYY-MM-DD (for example, 2016-12-25). Attempting to use a different format will cause the search to fail. You can also use the date selection tool instead of typing the date.

Domain Search Results

After a search has been completed, the following are the IRS domain name properties displayed in the **Domain Search** page:

Show only my domains

Select whether or not you want to view Search results for only your domains or for domains belonging to all Registrars.

For Registrar users, the default setting is selected.

Select All checkbox

Check this box to select all domains on the page. This feature allows you to perform operations on multiple domains at the same time.

Note: When you check this box, only domains on the search page are selected. If you would like to include additional domains in your selection, increase the number of entries in the Show entries dialog.

Domain Name

The identifying name of the domain displayed in U-label format.

Life Cycle State

The current life cycle state of the domain.

Note: If the Registry supports additional levels of domain names, third-level (or lower level) domain names cannot be registered if the superordinate domain name has already been registered. If a search is performed that would result in a restricted third-level

[1]The ASCII-Compatible Encoded (ACE) representation of an internationalized domain name that always begins with the prefix "xn--". A-labels use Punycode transcription.
[2]The Unicode label version of a domain name which can be used for internationalized domain names (IDNs). U-labels allow for language-specific scripts or alphabets (such as Arabic, Chinese, or characters with diacritics or ligatures) in domain names encoded in multi-byte Unicode.

domain name being displayed, the **Life Cycle State** would be reported as `Withheld`.

If a search is performed that would result in an invalid domain name being displayed, the **Life Cycle State** would be reported as `Invalid`. For information about valid domain names, see "Domain Information" on page 33.

Life Cycle State Ends

The time and date at which the current life cycle state will be completed.

Created

The time and date on which the domain was created.

Expiry

The time and date on which the domain will expire.

Registrant ID

The unique identifier assigned to the individual Registrant associated with the domain. If you are the sponsoring Registrar, you can click the **Registrant ID** to display the Contact Info page for that Registrant.

Domain Status

One or more statuses of the selected domain object. A domain always has at least one associated status value. Status values are set or reset by you (for example, `clientRenewProhibited`) or by the Registry (for example, `serverTransferProhibited`). Status values can also be assigned automatically based on configured criteria or rule-based settings.

Tags

Identification tags associated with the domain (for example, `Premium` or `Blocked`).

Search Procedures

To perform a basic search for domain names:

1. In the IRS portal, click the **Domains** tab.
2. In the **Domain Search** field, type the characters in the name of the domain for which you want to search.
3. Click the search icon ( ) or press **Enter**.

Note: To display all domains in the registry, do not type anything in the **Domain Search** field and perform the search.

To perform an advanced search for domain names:

Advanced search functionality allows you to build queries to perform complex searches.

1. In the IRS portal, click the **Domains** tab.
2. Below the **Search** field, click **Advanced**.
3. In the first search criteria pull-down menu, select the type of criteria to be selected from one of the following:
   - `Domain Name`
   - `Domain Status`
   - `Domain Life Cycle State`

- Domain Expiry Date
- Domain Create Date
- Domain Modified Date
- Domain AutoRenew Retry
- Domain Privacy
- Domain Reseller Name
- Domain Registry Lock
- Domain Compliance Lock
- Domain Last Modified By
- Contact Name
- Contact Type
- Contact ID
- Contact Address
- Contact Country
- Contact City
- Contact Postal Code
- Contact Province/State/Region
- Contact Email
- Contact Organization
- Contact Phone Number
- Contact Status
- Contact Language
- Host Name
- Host IPv4
- Host IPv6
- Registrar Name
- Registrar ID
- Registrar IANA ID
- Tag Name
- Tag Type

4. In the operator field, select how the criteria will be applied to the query from one of the following:
    - equal
    - not equal
    - contains (does not apply for Contact ID and Registrar ID searches; not used for date-based queries)
    - less (only used for date-based queries)
    - greater (only used for date-based queries)
    - less or equal (only used for date-based queries)
    - greater or equal (only used for date-based queries)

5. Depending on the criteria type selected, select the specific criteria in the pull-down menu or type the alpha-numeric characters in the criteria string field for which you want your query to search. Partial text searches are supported.

   For example, you could compose an Advanced Search to search for `Contact Name contains "Jo"` which could return results for domains that have a contact named Joe, Joseph, or Jocelyn.

   Note: For date elements, IRS provides a graphical date selection tool to allow you to select a specific date for your search criteria. You can also type a date value into the criteria text field but it must be in the numerical format of `yyyy-mm-dd` (for example, 2016-10-31) in order to be valid. To choose a date, navigate to the year and month that you want to configure as your search criteria and click the specific date to be selected.

6. To add additional search criteria to the query, click **Add rule**.
7. In the top left corner of the query builder, select the Boolean operator by which the search criteria will be associated from either **AND** or **OR**.

   Note: IRS's query builder currently only supports one Boolean operator to associate all criteria in the query. Selecting **AND** will result in all criteria being used in the query while selecting **OR** will result in any of the criteria being used in the query.

8. When your query is completed, click **Search**.

To clear search criteria or results:

1. After configuring or performing a Basic or Advanced search, click **Reset Search**.

   Any search results or previously configured criteria will be removed from the display.

Domain Information

Domain names have a large number of properties that can be displayed in different ways in the IRS portal. For example, the **Domain Search** page displays a brief summary of the information about a domain. For more information, refer to "Domain Search" on page 29.

Note: Some of the properties described below may not be displayed depending on whether or not you are the sponsoring Registrar for the domain.

The following are the IRS domain name properties displayed in the **Edit Domain** page for individual domains:

Info Section

Domain Name

The identifying name of the domain. When creating a domain, this can be typed in either A-label or U-label format.

Note: U-label domain names cannot contain more than 63 characters.

Characters must be alphanumeric or hyphens with the exception that you cannot use a hyphen as the first character, the third and fourth characters (combined together), or the last character of a label. For example, `ns1.te--st.nz` is invalid with two hyphens as the third and fourth characters.

This setting is mandatory when first creating a domain name.

A-Label

The ASCII-Compatible Encoded (ACE) label of a domain name that begins with a Punycode encoded string. This field is only displayed if the domain name has been configured with an A-label name.

Repertoire

The character repertoire language that was selected when the domain name was created. This setting is only displayed if the Registry supports more than one repertoire for IDNs (Internationalized Domain Names) and if the domain name has been configured with an A-label name.

Note: If the registry only supports one character repertoire, this option will not be displayed.

Sponsoring Registrar

The Registrar that owns or makes the initial request to create a domain name object created in the Registry. Domain name sponsorship can be changed through the domain transfer process. Only the sponsoring Registrar can access the complete information about a domain name object or modify it. A non-sponsoring Registrar can display the data for a domain if they have the authorization code.

Expiry Date

The expiry time and date of the domain name.

Life Cycle State

The current life cycle state of the domain.

Life Cycle State Ends

The time and date at which the current life cycle state will be completed.

Authorization Code

This field displays the Registrar Authorization Info or domain transfer key.

Authorization codes must be between the minimum and maximum number of characters defined by the Registry and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z, or numerals 0 to 9) or the hyphen (-) character.

This setting is mandatory when first creating a domain name.

If the Hashed Authorization Code toggle has been enabled by the Registry at the database level, this information is stored as a hashed value and will only display asterisks in the portal.

Note: As a security measure, the authorization code is masked in this field. If you would like to reveal the content, click on the eye icon in the field. You can also copy and paste the content while it is revealed.

If the Hashed Authorization Code toggle has been enabled, this information cannot be revealed.

Authorization Code Expiry

If the Authorization Code Expiry is configured, this field displays the date and time on which the authorization code will expire. If the authorization code has expired and is no longer valid, this field displays the word "Expired".

Created

The date and time at which the domain name was most recently created in the Registry.

Created By

The name of the Registrar that created the domain name.

Modified

The date and time of the most recent modification made to the domain name object in the Registry. If no modifications have been made, this field will remain blank.

Modified By

The name of the Registrar that made the most recent modification to the domain name object in the Registry. If no modifications have been made, this field will remain blank.

Original Created

The date and time at which the domain was first created in the Registry. For example, if a domain was created, subsequently deleted, and then created again the date on which the domain was first created would appear in this field.

Registry Object ID

The unique identifier assigned by IRS to the domain name object when it is created in the Registry.

Transferred

The date and time when the domain name was most recently transferred. If the domain name has never been transferred, this field will remain blank.

Registry Lock

The current status of the Registry Lock security service being applied to the domain name. For example, `Unlocked` indicates that the domain name has not been locked at the Registry level.

Registrant Lock

The current status of the Registrant Lock security service being applied to the domain name. For example, `Unlocked` indicates that the Registrant has not been locked on the domain name.

Compliance Lock

The current status of whether or not Compliance Lock has been applied to the domain.

Status Section

Status Indicators

The statuses that are currently associated with the domain including their properties: **Client Status**, **Server Status**, and, **Support Status**. For more information, see "Object Status" on page 23.

Domain Details

Privacy

Select the domain privacy for WHOIS information as either `Private` or `Public`.

For more information, refer to Domain Privacy.

Reseller Name

Enter the name of the reseller that you would like to be associated with this domain. The reseller name can be up to 256 characters. This field is optional.

Note that this name will be cleared on transfer of a domain between Sponsoring Registrars.

If the Reseller Name is entered, it will not appear in the WHOIS or RDAP response for that domain.

Hosts Section

The properties of the hosts associated with the domain name.

Note: You can modify the configuration of an existing host from the **Edit Domain** page. Select the check box next to the name of the host that you want to modify and click **Edit Host** in the action bar.

Host Name

The host name is comprised of segments of alphanumeric or hyphen characters delimited by period characters. For example, `hostname1.domainname.nz` or `hostname2.domainname.nz`.

Characters must be alphanumeric or hyphens with the exception that you cannot use a hyphen as the first character, the third and fourth characters (combined together), or the last character of a label. For example, `ns1.te--st.nz` is invalid with two hyphens as the third and fourth characters.

Click on the host's name to view its Edit Host page. From this page, you can see the host's details, such as its status, as well as a list of domains associated with that host. This link is only available if you have the correct permissions.

IPv4 Address

The IPv4 address associated with the host. An IPv4 address is a unique 32-bit identifier that consists of a set of four numbers in the range of 0 to 255, separated by periods. For example, `64.230.164.58`. Each host can be associated with up to five IPv4 addresses.

IPv6 Address

The IPv6 address associated with the host. An IPv6 address is a unique 128-bit identifier. IPv6 notation consists of eight groups of four hexadecimal digits, separated by colons. For example, `2001:d-b8:0000:0000:0000:0000:0000:5b0f`. Each host can be associated with up to five IPv6 addresses.

Status

The current status value of the host. A host object always has at least one associated status value.

Locked

The current status of whether or not the host is locked through the Registry Lock service. If the status is Y, the host is locked. If the status is blank, the associated domain is temporarily unlocked, the attempt to lock the host was unsuccessful or locking the hosts was not selected as part of the domain lock. This column does not appear if Registry Lock was not purchased for the domain or if Registry Lock has been removed from the domain.

Contacts Section

The properties of the contacts associated with the domain name.

Note: You can modify the configuration of an existing contact from the **Edit Domain** page. Select the check box next to the name of the contact that you want to modify and click **Edit Contact** in the action bar.

Name

The proper name of the contact. Click on the contact's name to view its Edit Contact page. From this page, you can see the contact's details, such as address and status, as well as a list of domains associated with that contact. This link is only available if you have the correct permissions.

Organization

The organization that the contact represents.

Contact ID

The unique identifier generated by IRS for the contact.

Phone Number

The telephone number at which the contact can be reached.

Email Address

The address to which email messages for the contact can be sent.

Contact Type

The type of contact from the following categories: `Registrant`, `Administrative`, `Technical`, and, `Billing`.

Locked

The current status of whether or not the contact is locked through the Registry Lock service. If the status is Y, the contact is locked. If the status is blank, the associated domain is temporarily unlocked, the attempt to lock the contact was unsuccessful or locking the contacts was not selected as part of the domain lock. This column does not appear if Registry Lock was not purchased for the domain or if Registry Lock has been removed from the domain.

Tags Section

The properties of tags associated with the domain name.

Tag Name

The identifying name of the tag.

Type

The category of tag.

Events

A list of the events during the domain name life cycle that will automatically trigger the association of the tag with a domain name that meets the configured criteria.

Description

Additional information about the tag to further identify its usage.

Pattern

Indicates whether the tag is matching based on a character string pattern.

Effective Date

Displays the date and time at which the tag will become active.

Expiry Date

Displays the date and time at which the tag will become inactive and will no longer be in effect.

DNSSEC Section

Note: This section is only displayed if the domain has been configured with DS records. If no DS records have been added to the domain, this section will not be displayed.

Created

The date and time when the DS record was created.

Keytag

A short numeric value which can help quickly identify the referenced DNSKEY record.

Digest Type

Cryptographic hash algorithm used to create the Digest value.

Digest

A cryptographic hash value of the referenced DNSKEY record.

Protocol

Fixed value of `3`.

Flag

"Zone Key" (set for all DNSSEC keys).

Algorithm

The public key's cryptographic algorithm.

DNSKEY

Public key data.

History Section

Historical data about actions performed by the Registry that affected the domain name.

Click on the **Action ID** to display more detailed information about individual actions.

Note: Registrars will only see historical data for when they are the sponsoring Registrar for a domain. For example, if Registrar A transfers a domain to Registrar B and then the domain is transferred back to them, Registrar A will not be able to see historical data for the period during which Registrar B was the sponsoring Registrar.

Action ID

The unique identifier assigned to individual requests made to the Registry that affect the domain name.

Action

The action performed by the Registry in response to the request.

Charge

The financial amount associated with the action if there is a cost incurred.

Refund

The financial amount associated with the action if funds are being returned as a result of the action.

Note: For domain name transfers when a domain is in autoRenewPeriod, a charge will be applied to the new sponsoring Registrar while a refund will be applied to the Registrar from which the domain name is being transferred. If the domain name transfer is rejected, a refund will be applied to the Registrar that would have become the new sponsoring Registrar while a charge will be applied to the Registrar from which the domain name was originally going to be transferred.

Source

The original source from which the action affecting the domain name originates. This can be one of the following:

- **EPP** - the IRS EPP interface
- **WEB** - the IRS web portal
- **HKP** - internal housekeeping mechanisms within IRS
- **SQL** - the Registry database

Modified

The date and time at which the request was made to the Registry.

Modified By

The originator of the request.

Domain Privacy

IRS supports configuring domain names with privacy. Please refer to **.NZ Rules Policy** (section 6) for the policy and operational rules for setting domain privacy.

The Privacy Option is available to a Domain Name Holder if the Domain Name Holder:

- Is an individual (rather than an entity)
- Does not intend to use the .nz domain name to any significant extent in 'trade' as that term is defined in section 2 of the Fair Trading Act 1986.

Eligible domain name holders can elect the privacy option at the time of registering a domain name and can change their selection at any time afterwards. For more information, see "Domain Information" on page 33.

Note: Privacy applies to all contacts associated to a domain including secondary contacts that may be a mix of individuals and organizations.

Domain Management

Creating Domains

One of the fundamental procedures in IRS is the ability to create new domain names in the registry.

Note: You can also configure domain names with DNSSEC information during the initial creation of the domain in IRS. For more information, refer to "DNSSEC" on page 50.

Restrictions

1. A new domain name cannot be created if it already exists in the Registry. If you attempt to create an existing domain name, the error message `This domain already exists` will be displayed.
2. You cannot create a new domain name if the name has been associated with a **Block** tag.
3. If a **Block - Create** tag is applied to a domain name, the domain name cannot be created in the registry unless the tag is configured with the **Allow Override** setting. For more information, refer to "Block - Create Tags" on the next page.
4. If the domain name is restricted or reserved, you must first create a special domain name request. For more information, refer to Requesting a Special Domain Name.

Relationships Between Domains, Contacts, and Hosts

When creating a domain, you can create relationships between the domain name and existing contacts and hosts or you can associate the domain with new contacts and hosts.

When establishing the association of a new domain name with new or existing contacts, there are several different types of relationships:

- A single Registrant contact-domain relationship indicates that the individual or non-individual that owns the domain registration.
- A single Administrative contact-domain relationship indicates the individual or non-individual that is authorized by the Registrant to administer administrative information for a registered domain.
- A single Technical contact-domain relationship indicates the individual or non-individual that is authorized by the Registrant to administer technical information for a registered domain.
- Zero or more Billing Contacts contact-domain relationships indicate individuals or non-individuals that are authorized by the Registrant to administer financial information for a registered domain.

A Registrar does not need to be the sponsor of related hosts but it must be the sponsor of all associated contacts to create a domain name successfully.

Note: You can modify the settings for an existing Contact during the creation of a new domain name in IRS.

Domain Creation Procedure

To create a new domain name

1. In the IRS portal, click the **Domains** tab.
2. In the action bar, click **Create Domain**.
3. In the **Create Domain** page, type or select the properties to be assigned to the new domain name. Domain name properties that are mandatory are indicated with a red asterisk (*).

   Note: When typing the name of a new domain to which a **Block - Create** tag that has been configured with the **Allow Override** setting has been applied, the following warning will be displayed: `"Restricted Operation: This domain name has usage restrictions and requires Registry Approval."` If this message is displayed, creating the domain name will require manual approval by a Registry or system-level user.

4. In the action bar, click **Link Contact** or **Add Contact** to create an association for the new domain name with either an existing contact or a new contact.

   Note: To successfully create a new domain name, it must be associated with either a new or existing Registrant, Administrative and Technical contact.

5. In the action bar, click **Link Host** or **Add a New Host** to create an association for the new domain name with either an existing host or a new host. If you are selecting an existing host, from the **Link Host to this Domain** window you can click on the **Show only my hosts** checkbox to view only those hosts belonging to you. When the checkbox is not checked, this window shows hosts from all Registrars.
6. If a change is needed after a Contact or Host has been linked to the new domain, perform one of the following:
   - click **Edit Contact** to modify an existing Contact,
   - click **Remove Contact** to disassociate the Contact from the domain, or,
   - click **Remove Host** to disassociate the Host from the domain.

   Note: Using the **Remove** option in the Action Bar does not delete the Contact or Host. It only removes the link between it and the domain. In order to permanently delete a Contact or Host, it must be deleted in the Contact or Host page.

7. Once the domain properties have been entered and it has been associated with a Registrant, click **Create Domain**.

Block - Create Tags

If a **Block - Create** tag that is not configured with **Allow Override** is applied to a domain name, it cannot be created. A request to create the domain name can, however, be approved by Registry and system-level users if the associated **Block - Create** tag has been configured with the **Allow Override** setting.

If a **Block - Create** tag configured with **Allow Override** is applied to the domain name, the following will occur if a domain name create request is submitted:

1. The `pendingCreate` status will be assigned to the domain name.
2. The Registrar will be charged the registration fee.
3. Additional statuses that are associated with the `pendingCreate` state are also applied to the domain name. These statuses are `serverHold`, `serverTransferProhibited`, `serverUpdateProhibited`, and, `serverRenewProhibited`.
4. The expiry date of the domain is modified to the request date plus the length of the term defined during registration.
5. The Life Cycle State Ends date is changed to 3000-01-01 00:00:00 (UTC).
6. No system transitions will be permitted to affect the domain name while it is waiting for the registration to be approved.
7. Until the domain name create is approved or rejected, no additional changes will be made in terms of life cycle transitions as all deadlines will be temporarily suspended.
8. An email notification message will be sent to the Registry indicating that the create request has been submitted.
9. A pending create request is created on the Registry dashboard.
10. No email notification messages will be sent to either the Registrar or Registrant.

If a Create request is manually approved by a Registry or system-level user, the following will occur:

1. The `pendingCreate` status (and associated statuses) will be removed from the domain name.
2. The domain name will remain in an `addPeriod` state with the associated statuses being assigned to the domain name.
3. The Life Cycle State Ends date for the domain name will be changed according to the length of the `addPeriod` duration.
4. Conventional life cycle transitions will resume.
5. A notification message will be sent to the Registrar indicating that the domain name registration has been approved.
6. If configured, notification email messages will also be sent to selected recipients.

If a Create request is manually rejected by a Registry or system-level user, the following will occur:

1. The domain name status will change to `pendingDelete`.
2. Additional statuses that are associated with the `pendingDelete` state are also applied to the domain name. These statuses are `serverHold`, `serverTransferProhibited`, `serverUpdateProhibited`, and, `serverRenewProhibited`.
3. The end of life value for the domain name will be changed according to the length of the `pendingDelete` duration.
4. The Registrar will be refunded the registration fee that was charged when the request was submitted.
5. Conventional life cycle transitions will resume.
6. A notification message will be sent to the Registrar indicating that the domain name registration has been rejected.

Edit Domains

Once a domain name has been created in IRS, various settings may change over the life cycle of the domain name object. Modifying an existing domain name's settings is both quick and straightforward using the IRS portal.

Note: Modifying a domain name object in the Registry using the IRS portal may add or delete relationships between the domain and previously created hosts and contacts.

Requirements and Restrictions

1. You must be the sponsoring Registrar in order to modify a domain.
2. A domain name must have a Contact configured as a Registrant in order to be successfully updated.
3. Domain name settings cannot be modified if the following status values are in effect:
    - `clientUpdateProhibited`
    - `serverUpdateProhibited`
4. If the `clientUpdateProhibited` status is in effect but the `serverUpdateProhibited` status is not in effect, you can modify the domain name to remove the `clientUpdateProhibited` status from the domain.
5. Updates can be made to the Authorization Code for domains in `redemptionPeriod` only if the Allow Domain Authorization Code Update in Redemption toggle is enabled by the Registry. When this toggle is enabled, only the Authorization Code can be updated; no other updates can be made. If the toggle is disabled (which is the default) or the domain is locked, no updates can be made to domains in `redemptionPeriod`.
6. Domains that are associated to a zone can only be modified by users with the correct permissions.

To update an existing domain name

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name that you want to modify.
3. Click the name of the domain that you want to modify.
4. In the **Edit Domain** page, modify the properties that you want to change.
5. In the action bar, click **Link Contact** or **Add Contact** to create associations for the domain name with either an existing contact or a new contact.
6. In the action bar, click **Link Host** or **Add a New Host** to create associations for the domain name with either an existing host or a new host. If you are selecting an existing host, from the **Link Host to this Domain** window you can click on the **Show only my hosts** checkbox to view only those hosts belonging to you. When the check-box is not checked, this window shows hosts from all Registrars.
7. For any existing Contacts or Hosts that have previously been linked to a domain and are no longer required, click **Remove Contact** or **Remove Host** to disassociate the Contact or Host from the domain.

    Note: Using the **Remove** option in the Action Bar does not delete the Contact or Host. It only removes the link between it and the domain. In order to permanently delete a Contact or Host, it must be deleted in the Contact or Host page.
8. Click **Update Domain**.

To update multiple domain names simultaneously

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain names that you want to modify.
3. Do one of the following:
    - Select the checkbox in front of each of the domains you want to update.
    - Click on the Select All checkbox to select all domains on the page.
4. Click on Edit Domain in the action bar.
5. In the **Bulk Status Update** page, do one of the following:
    - If you want to add domain status settings, click Set Selected Statuses in the Action drop-down menu. This is the default setting.
    - If you want to remove the domain status settings, click Remove Selected Statuses in the Action drop-down menu.

6. Click on the checkbox beside the names of the statuses that you want to set or remove.
7. Click **Update Domains**.

Renew Domains

Successfully renewing a domain name will extend the length of the term for which it is registered.

Note: Domain names cannot be renewed if their domain status is either `clientRenewProhibited` or `serverRenewProhibited`.

A domain with the `clientRenewProhibited` status is still subject to automatic renewals as this status will only prevent manual or explicit renewals. The `serverRenewProhibited` status will prevent automatic renewal of a domain.

To renew an individual domain name

Note: Domain names can also be renewed in the **Edit Domain** page.

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name that you want to renew.
3. Select the check box next to the name of the domain that you want to renew.
4. Click **Renew Domain** in the action bar.
5. In the **Renew Domain** dialog box, select the period (indicated in months or years) in the **Renew For** drop-down menu for which you want to extend the length of the registration term.

   Note: The values that will be available for **Renew For** will be based on the Registry configuration.
6. Click **Renew Domain**.

   Note: If a **Block - Renew** tag that has been configured with the **Allow Override** setting is applied to the domain, the **Renew Domain** dialog box will display a warning: `"Restricted Operation: This domain name has usage restrictions and requires Registry Approval."` If this message is displayed, renewing the domain name will require manual approval by a Registry or system-level user.

Block - Renew Tags

If a **Block - Renew** tag that is not configured with **Allow Override** is applied to a domain name, it cannot be renewed. The domain name can, however, be manually renewed by Registry and system-level users if the associated **Block - Renew** tag has been configured with the **Allow Override** setting.

If a **Block - Renew** tag configured with **Allow Override** is applied to the domain name, the following will occur if a domain name renewal request is submitted:

1. The `pendingRenew` status will be assigned to the domain name.
2. The Registrar will be charged the renewal fee.
3. Additional statuses that are associated with the `pendingRenew` state are also applied to the domain name. These statuses are `serverTransferProhibited`, `serverUpdateProhibited`, and, `serverRenewProhibited`.
4. The expiry date of the domain is modified to the current expiry date plus the renewal period.
5. The Life Cycle State Ends date is changed to 3000-01-01 00:00:00 (UTC).
6. No system transitions will be permitted to affect the domain name while it is waiting for the renewal to be approved.

7. Until the domain name renewal is approved or rejected, no additional changes will be made in terms of life cycle transitions as all deadlines will be temporarily suspended.
8. An email notification message will be sent to the Registry indicating that the renewal request has been submitted.
9. No email notification messages will be sent to either the Registrar or Registrant.

If a renewal request is manually approved by a Registry or system-level user, the following will occur:

1. The `pendingRenew` status (and associated statuses) will be removed from the domain name.
2. The domain name will transition to a `renewPeriod` state with the associated statuses being assigned to the domain name.
3. The Life Cycle State Ends date for the domain name will be changed according to the length of the renewal period.
4. Conventional life cycle transitions will resume.
5. A notification message will be sent to the Registrar indicating that the domain name renewal has been approved.
6. If configured, notification email messages will also be sent to selected recipients.

If a renewal request is manually rejected by a Registry or system-level user, the following will occur:

1. The domain name will revert to the life cycle state that it was in prior to the renewal request being submitted.
2. The expiry date, length of term, and life cycle state end date values will all revert to what they were before the renewal request was submitted.
3. The Registrar will be refunded the renewal fee that was charged when the request was submitted.
4. Conventional life cycle transitions will resume.
5. A notification message will be sent to the Registrar indicating that the domain name renewal has been rejected.

Delete Domains

Domain names can be deleted during any of the following stages of the domain name life cycle:

- `addPeriod`,
- `registered`,
- `autoRenewPeriod`,
- `renewPeriod`, and,
- `transferPeriod`.

Note: Domain names cannot be deleted if their domain status is either `clientDeleteProhibited` or `serverDeleteProhibited`.

The ability to delete a domain name is based on which stage in the life cycle that it is currently in. This includes:

- If a domain name is in the `addPeriod` stage, it is moved to the `pendingDelete` stage when it is deleted before becoming available again.
- If a domain is in the `registered`, `autoRenewPeriod`, `renewPeriod`, or `transferPeriod` stage when it is deleted, it is moved to the `redemptionPeriod` stage.
- A deleted domain name can be redeemed from the `redemptionPeriod` state within 90 days of its being deleted. When a deleted domain name is not redeemed within this period, it is moved to the `pendingDelete` state before becoming available again.

Note: Domains that are associated with zone tags cannot be deleted.

Domain names that are locked using the Registry Lock service cannot be deleted. This applies to domains that are temporarily unlocked as well. The Registry Lock must be removed from the domain

by a user with the Registry Security or Registrar Security role before it can be deleted.

Note: When a domain name is associated with an existing subordinate host object (for example, `domain.nz` is associated with `hostname.domain.nz`) deleting the domain name will remove the association and eventually delete the subordinate hosts when the domain is fully deleted. Any other domains associated to those hosts will lose their delegation. If the superordinate domain is restored from redemption period, the delegation will be recovered.

To delete an individual domain name

Note: Domain names can also be deleted in the **Edit Domain** page.

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name that you want to delete.
3. Select the check box next to the name of the domain that you want to delete.
4. Click **Delete Domain** in the action bar.

   The **Domain Delete** dialog box is displayed.
5. Click **Delete Domain**.

To delete multiple domain names simultaneously

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain names that you want to delete.
3. Do one of the following:
   - Select the checkbox next to the names of each of the domains that you want to delete.
   - Click on the Select All checkbox to select all domains on the page.
4. Click **Delete Domain** in the action bar.
5. In the **Domain Delete** dialog box, click **Delete Domains**.
   View the status of the multiple domain delete on the Bulk Operations page. For more information, refer to "Bulk Operations" on page 72.

Block - Delete Tags

If a **Block - Delete** tag that is not configured with **Allow Override** is applied to a domain name, it cannot be deleted. The domain name can, however, be manually deleted by Registry and system-level users if the associated **Block - Delete** tag has been configured with the **Allow Override** setting.

If a **Block - Delete** tag configured with **Allow Override** is applied to the domain name, the following will occur if a domain delete request is submitted:

1. The `pendingDelete` status will be assigned to the domain name.
2. The Registrar will be charged the deletion fee, if applicable.
3. Additional statuses that are associated with the `redemptionPeriod` state are also applied to the domain name. These statuses are `serverHold`, `serverRenewProhibited`, `serverTransferProhibited`, and `serverUpdateProhibited`.
4. The expiry date of the domain does not change.
5. The Life Cycle State Ends date is changed to 3000-01-01 00:00:00 (UTC).
6. No system transitions will be permitted to affect the domain name while it is waiting for the delete to be approved.

7. Until the domain name delete is approved or rejected, no additional changes will be made in terms of life cycle transitions as all deadlines will be temporarily suspended.
8. An email notification message will be sent to the Registry indicating that the delete request has been submitted.
9. No email notification messages will be sent to either the Registrar or Registrant.

If a delete request is manually approved by a Registry or system-level user, the following will occur:

1. The domain remains in the `pendingDelete` or `redemptionPeriod` stage of life and retains any statuses associated with that stage.
2. The Life Cycle State Ends date is set according to the stage of life period length.
3. A notification message will be sent to the Registrar indicating that the domain name deletion has been approved.
4. If configured, notification email messages will also be sent to selected recipients.

If a delete request is manually rejected by a Registry or system-level user, the following will occur:

1. The domain name will revert to the life cycle state that it was in prior to the delete request being submitted.
2. The expiry date, length of term, and life cycle state end date values will all revert to what they were before the delete request was submitted.
3. The Registrar will be refunded the deletion fee that was charged when the request was submitted, if applicable.
4. Conventional life cycle transitions will resume.
5. A notification message will be sent to the Registrar indicating that the domain delete has been rejected.

Transfer Domains

A Domain Transfer request transfers the sponsorship of a domain name from one Registrar to another.

If the Transfer in Redemption toggle is enabled by the Registry, users can transfer domains, even when they are in the Redemption period. If this toggle is disabled, users cannot transfer a domain if it is in the Redemption period.

If the Change Authorization Code on Transfer toggle is enabled by the Registry, IRS auto-generates a new authorization code for a domain as part of a successful domain transfer . As well, if the Authorization Code has been configured to expire, the authorization code expiry date for the updated code will be reset based on the date of the domain transfer.

To transfer a domain name

Note: Domain names can also be transferred in the **Edit Domain** page.

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name that you want to transfer.
3. Select the check box next to the name of the domain that you want to transfer.
4. Click **Transfer Domain** in the action bar.
   The **Domain Transfer** dialog box opens.
5. In the **Domain Name** field, enter the domain name you would like to transfer.
6. Configure the following properties:

   - **Renewal Period** - The length of time (indicated in years) that the domain name will be registered with the new Registrar. In cases where you want to transfer a domain that is less than a year from its maximum term length, select a renewal period of 0 (which is the only option available in this case).

     Note: The 0 renewal period option:

- will not change the domain expiry date
- will not charge the Registrar for the renewal

- **Authorization Code** - The Registrar Authorization Info or domain transfer key. To obtain this code, the Registrant must request it from the sponsoring Registrar. The **Authorization Code** can be found in the **Edit Domain** page for the sponsoring Registrar if the Registry is not hashing auth codes. The losing Registrar may also use the authcode API to retrieve the authorization code and send it to the Registrant automatically via email. This code is not required for system level users.

7. Click **Transfer Domain**.

Note: Contacts associated to the selected domains will be copied, not moved, to the new Registrar.

Hosts will only be transferred if they are subordinate hosts to the selected domains.

Restrictions

1. To transfer a domain name object, the resulting domain name and its contact associations must remain valid.
2. Domain names cannot be transferred if the following status values are in effect:
   - `clientTransferProhibited`
   - `serverTransferProhibited`
   - `pendingTransfer`
3. If the Authorization Code Expiry setting is enabled, domains cannot be transferred if the authorization code has expired. The authorization code must be updated first in order to do the transfer.

Restoring Domains

If a domain name has transitioned to the `redemptionPeriod` state, it cannot be registered again (either by explicit request from the Registrant or if it is not renewed and expires). As the Registrar, however, you do have the option to restore and renew the domain name again for the Registrant (as an option for resolving renewal problems before the domain name is finally deleted from the registry database).

To restore a domain name

Note: Domain names can also be restored in the **Edit Domain** page.

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name that you want to restore.
3. Select the check box next to the name of the domain that you want to restore.

   Note: Restoring a domain can only be performed on domains that display `redemptionPeriod` in the **Life Cycle State** column.
4. Click **Restore Domain** in the action bar.
5. In the **Domain Restore** dialog box, type a statement in the **Please input reason for restoring this domain** field to explain why the domain name is being restored.
6. Click **Restore Domain**.

Following a successful restoration, the domain name will be transitioned to a `Registered` state.

Managing Registry Lock

Users with Registry Security and Registrar Security roles can manage the Registry Lock service for a domain. The Registrar cannot make changes to the locked domain without following specific authentication and verification protocols.

Registry lock is unavailable for domains that are associated with a zone tag. You cannot buy the Registry Lock service for or lock a domain with a zone tag.

For more information about Registry Lock, refer to "Registry Lock" on page 26.

To Buy the Registry Lock Service

The **Buy Lock** option enables the Registry Lock Service for the domain and locks the domain.

1. In the IRS portal, click the **Domains** tab.
2. Click on the name of the domain for which you would like to buy the Registry Lock service.
3. In the action bar, under Registry Lock Service, click **Buy Lock**.
4. Select the **Lock Hosts** option if you would like to lock the hosts for this domain.
   If selected, hosts will only be locked if they are not shared with other domains.
5. Select the **Lock Contacts** option if you would like to lock the contacts for this domain.
   If selected, contacts will only be locked if they are not shared with other domains.
6. Enter any comments in the **Comments** field.
7. Click on the **Buy Lock** button.
   When you click on the **Buy Lock** button, the Registry Lock Service is enabled for the domain, the domain is locked and the Registry Lock fee is applied.

To Buy the Registry Lock Service for One or More Domains

The **Buy Lock** option on the Domains page enables the Registry Lock Service for multiple domains at the same time and locks them.

1. In the IRS portal, click the **Domains** tab.
2. Click on the checkbox beside the names of the domains for which you would like to buy the Registry Lock service.
3. In the action bar, under Registry Lock Service, click **Buy Lock**.
4. Select the **Lock Hosts** option if you would like to lock the hosts for these domains.
   If selected, hosts will only be locked if they are not shared with other domains.
5. Select the **Lock Contacts** option if you would like to lock the contacts for these domains.
   If selected, contacts will only be locked if they are not shared with other domains.
6. Enter any comments in the **Comments** field.
7. Click on the **Buy Lock** button.
   When you click on the **Buy Lock** button, the Registry Lock Service is enabled for the selected domains, the domains are locked and the Registry Lock fee is applied.

View the status of this operation on the Bulk Operations page. If any of the domains could not have Registry Lock enabled, the Bulk Operations page displays the status of the job and any error messages. For more information, refer to "Bulk Operations" on page 72.

To Unlock a Domain

The **Unlock Domain** option unlocks the domain temporarily, so that any authorized changes can be made to it.

1. In the IRS portal, click the **Domains** tab.
2. Click on the name of the domain that you would like to temporarily unlock.
3. In the action bar, under Registry Lock Service, click **Unlock Domain**.
4. Enter any comments in the **Comments** field.
5. Click on the **Unlock Domain** button.
   When you click on the **Unlock Domain** button, the Registry Lock Service is disabled for the domain and the

domain is temporarily unlocked. If hosts and contacts were also locked during the previous buy or lock, they will also now be unlocked.

To Unlock One or More Domains from the Landing Page

The **Unlock Domain** option on the Domains page temporarily unlocks multiple domains at the same time, so that any authorized changes can be made to them.

1. In the IRS portal, click the **Domains** tab.
2. Click on the checkbox beside the names of the domains that you would like to temporarily unlock.
3. In the action bar, under Registry Lock Service, click **Unlock Domain**.
4. Enter any comments in the **Comments** field.
5. Click on the **Unlock Domain** button.
   When you click on the **Unlock Domain** button, the Registry Lock Service is disabled for the domain and the domain is temporarily unlocked. If hosts and contacts were also locked during the previous buy or lock, they will also now be unlocked.

View the status of this operation on the Bulk Operations page. If any of the domains could not be unlocked, the Bulk Operations page displays the status of the job and any error messages. For more information, refer to "Bulk Operations" on page 72.

To Lock a Domain

The **Lock Domain** option locks the domain, so that no changes can be made to it. The **Lock Domain** option is disabled if:

- the lock service is not enabled for that domain
- the domain is already locked
- the domain is not in registered or Auto-renew stage of life
- the domain is associated with a zone tag

The domain may be automatically relocked after the number of hours set in the **Registry Lock - Auto Relock After** field, which is configured by the Registry.

1. In the IRS portal, click the **Domains** tab.
2. Do one of the following:
   a. Click on the checkbox beside the name of the domain that you would like to lock.
   b. Click on the name of the domain that you would like to lock.
3. In the action bar, under Registry Lock Service, click **Lock Domain**.
4. Select the **Lock Hosts** option if you would like to lock the hosts for this domain.
   If selected, hosts will only be locked if they are not shared with other domains.
5. Select the **Lock Contacts** option if you would like to lock the contacts for this domain.
   If selected, contacts will only be locked if they are not shared with other domains.
6. Enter any comments in the **Comments** field.
7. Click on the **Lock Domain** button.
   When you click on the **Lock Domain** button, the Registry Lock Service is enabled for the domain and the domain is locked.

To Lock One or More Domains from the Landing Page

The **Lock Domain** option on the Domains page locks multiple domains at the same time, so that no changes can be made to them. Domains may be automatically relocked after the number of hours set in the **Registry Lock - Auto Relock After** field, which is configured by the Registry.

1. In the IRS portal, click the **Domains** tab.
2. Click on the checkbox beside the names of the domains for which you would like to lock.

3. In the action bar, under Registry Lock Service, click **Lock Domain**.
4. Select the **Lock Hosts** option if you would like to lock the hosts for these domains.
   If selected, hosts will only be locked if they are not shared with other domains.
5. Select the **Lock Contacts** option if you would like to lock the contacts for these domains.
   If selected, contacts will only be locked if they are not shared with other domains.
6. Enter any comments in the **Comments** field.
7. Click on the **Lock Domain** button.
   When you click on the **Lock Domain** button, the Registry Lock Service is enabled for the selected domains and the domains are locked.

View the status of this operation on the Bulk Operations page. If any of the domains could not be locked, the Bulk Operations page displays the status of the job and any error messages. For more information, refer to "Bulk Operations" on page 72.

To Remove the Registry Lock Service from a Domain

The **Remove Lock** option permanently removes the Registry Lock service on the domain, so the domain is no longer locked. After you have removed the Registry Lock Service from a domain, you must purchase the lock again if you want to re-enable it.

1. In the IRS portal, click the **Domains** tab.
2. Do one of the following:
   a. Click on the checkbox beside the name of the domain from which you would like to remove the Registry Lock Service.
   b. Click on the name of the domain from which you would like to remove the Registry Lock Service.
3. In the action bar, under Registry Lock Service, click **Remove Lock**.
4. Enter any comments in the **Comments** field.
5. Click on the **Remove Lock** button.
   When you click on the **Remove Lock** button, the Registry Lock Service is removed from the domain and the domain and any associated contacts or hosts are unlocked.

To Remove the Registry Lock Service from One or More Domains from the Landing Page

The **Remove Lock** option permanently removes the Registry Lock service on the selected domains, so the domains are no longer locked. After you have removed the Registry Lock Service from a domain, you must purchase the lock again if you want to re-enable it.

1. In the IRS portal, click the **Domains** tab.
2. Click on the name of the domains from which you would like to remove the Registry Lock service.
3. In the action bar, under Registry Lock Service, click **Remove Lock**.
4. Enter any comments in the **Comments** field.
5. Click on the **Remove Lock** button.
   When you click on the **Remove Lock** button, the Registry Lock Service is removed from the domains and the domains and any associated contacts or hosts are unlocked.

View the status of this operation on the Bulk Operations page. If any of the domains could not have Registry Lock removed, the Bulk Operations page displays the status of the job and any error messages. For more information, refer to "Bulk Operations" on page 72.

DNSSEC

DNSSEC (Domain Name System Security Extensions) is a suite of published IETF (Internet Engineering Task Force) RFCs (Request for Comments) that define standards for securing information provided through the Domain Name System (DNS) by adding digital signatures to DNS data.

For more information about DNSSEC and the security benefits that it provides, refer to the following:

- **DNSSEC Deployment Initiative**
- **Internet Society Introduction to DNSSEC**
- **DNSSEC – What Is It and Why Is It Important?**
- **DNSSEC.net**
- **Internet Engineering Task Force (IETF) RFC5910**
- **Internet Engineering Task Force (IETF) RFC4034**
- **Domain Name System Security (DNSSEC) Algorithm Numbers**
- **Delegation Signer (DS) Resource Record (RR) Type Digest Algorithms**

DNSSEC and its associated technology are focused primarily on the DNS system. Another element is defining how DNSSEC records are integrated into the top-level DNS. This process is similar to other data incorporated into the top-level DNS which is performed through the Registry. In the case of IRS, DNSSEC data is accepted into the Registry through both EPP extensions and the IRS web portal.

RFC 5910 defines a set of EPP extensions to add, update, and delete DNSSEC information related to a domain in a Registry. RFC 4034 defines Resource Records for DNS Security Extensions and is referenced within RFC 5910. IANA (Internet Assigned Numbers Authority) is responsible for maintaining the current lists (Protocol Registries) of codes and numbers used in many RFCs. Specifically related to IRS, IANA maintains within RFC 4034 the list of DNSSEC Algorithm Numbers as well as the list of Digest Algorithms.

IRS accepts DNSSEC information for IRS-signed domains from Registrants through their Registrars and imports it into the Registry for inclusion in the IRS-signed zone to establish a chain of trust.

Additional documentation for the schema can be found in RFC 5910. Details of the DS and DNSKey record fields are described in RFC 4034.

All Registrars are strongly encouraged to adopt and support this EPP extension.

Note: The implementation of DNSSEC for IRS-registered domain names is optional. If you choose not to implement DNSSEC, you will not have to adapt your systems in any way.

DNSSEC Concepts and Benefits

Asymmetric Encryption

Asymmetric Encryption is also referred to as Public-key cryptography. Asymmetric Encryption uses two related keys - a key pair:

1. A public key that is made available through the DNS and is stored in the DNSKEY record.
2. A private key that is kept secret, so that only you know it.

In DNSSEC, each DNS zone is associated with one or more key pairs. For example, a private key is held by the administrator of the zone and kept secret. The public key is added to the zone in a type of resource record referred to as a DNSKEY record.

The private key signs the resource record sets in the zone. The signature does not encrypt the records, but it does provide a digital signature that is used to validate the source of the records. It also ensures that they have not been modified. It is an important part in verifying the chain of trust.

Each signature is added to the zone in another new type of resource record called an RRSIG record.

What DNSSEC Cannot Do

DNSSEC cannot:

- protect against packet sniffing (listening in on DNS traffic),
- stop some forms of phishing, and pharming, such as typo-squatting (typosquatting means using domain names that look a lot like real domain names but actually contain other characters), or,
- protect against DDoS attacks.

What DNSSEC Can Do

Domain Name Security Extensions (DNSSEC) add a layer of security to your domain names by attaching digital signatures to their Domain Name System (DNS) information. The DNSSEC extensions are used to verify data by means of cryptographically secured signatures.

DNSSEC offers:

- Reliability - the DNS data that you are using is reliable (the DNSSEC data received by the user has not been compromised in transit).
- Seal of Quality - everyone see that your Registry takes security seriously.
- Retain your clients because some will want to deal with a service provider that supports DNSSEC.
- Future-proof and service-oriented - DNSSEC might ultimately become compulsory.

DNSSEC Implementation

IRS's implementation of DNSSEC follows industry standards providing Registrars with the capability to add DNSSEC information to domain names. The following list defines and describes items specific to IRS's implementation of RFC5910:

1. Section 4 of RFC 5910 (DS Data Interface and Key Data Interface) states the following:

   The server MUST support the use of only one form of interface across all `<secDNS:create>`, `<secDNS:update>`, *and* `<secDNS:infData>` *elements, except during a transition period, during which the server MAY support both.*

   IRS accepts either `<secDNS:dsData>` or `<secDNS:keyData>` interfaces across the commands referenced above. This provides the most flexibility to Registrars and in turn their Registrants who want to store DNSSEC data within the Registry.

2. Appendix A.1 of RFC 4034 defines the cryptographic algorithms supported within DNSSEC. IANA maintains the current list of supported algorithms at **http://www.iana.org/assignments/dns-sec-alg-numbers/dns-sec-alg-numbers.xhtml**. At the present time, IRS supports all eleven (11) algorithms identified as valid Zone Signing algorithms which includes:
   - #3 - DSA/SHA-1
   - #5 - RSA/SHA-1
   - #6 - DSA-NSEC3-SHA1
   - #7 - RSASHA1-NSEC3-SHA1
   - #8 - RSA/SHA-256
   - #10 - RSA/SHA-512
   - #12 - GOST R 34.10-2001
   - #13 - ECDSA Curve P-256 with SHA-256
   - #14 - ECDSA Curve P-384 with SHA-384
   - #15 - ED25519
   - #16 - ED448
   - #253 - private algorithm
   - #254 - private algorithm OID

   These supported algorithms are related to any `<secDNS:alg>` element (the element that contains the algorithm value).

   Note: All other algorithm types result in an error message being returned.

3. Appendix A.2 of RFC 4034 defines the cryptographic digest algorithm used to generate DS records. IANA maintains the current list of supported digest algorithms at **http://www.iana.org/assignments/ds-rr-types/ds-rr-types.xml**. At the present time, IRS supports the following algorithms when accepting DS data

records:

- #1 - SHA-1
- #2 - SHA-256
- #3 - GOST R 34.11-94
- #4 - SHA-384

Warning: When IRS is provided with a DNSKEY record and generates the DS record, digest algorithm #1 (SHA-1) will always be used.

These supported algorithms are related to any `<secDNS:digestType>` element. The Digest Type field identifies the algorithm used to construct the digest and is mandatory. For example, Value #1 (see above) is SHA-1. Refer to RFC 4034 and (5.1.3) Digest Type for more information.

Note: All other algorithm types result in an error message being returned.

Registrars and DNSSEC

RFC 5910 defines an EPP extension that allows DNSSEC information to be transmitted using EPP.

Registrars offering DNSSEC capabilities to their customer base for IRS-based domains (and who want to send the DNSSEC data to IRS using EPP) must modify their system to support the EPP extension defined within RFC 5910 and the `secDNS-1.1.xsd` schema.

Note: It is the responsibility of the Registrar to ensure that their EPP requests validate against the EPP schema. Access a copy of the schema files from the IRS web portal.

Support for the IRS extensions and schema have the following constraints:

- the optional Maximum Signature Lifetime (`maxSigLife`) element is not supported,
- the optional "urgent" attribute in the `<secDNS:update>` element is not supported,
- update has a `<chg>` command that IRS ignores,
- a maximum of six (6) DS /DNSKEY records are allowed for each domain, and,
- IRS supports and accepts both DS `<secDNS:dsData>` and /or DNSKEY `<secDNS:keyData>` data elements.

Protocol Identification

All EPP XML instances must begin with an `<epp>` element. This element identifies the start of an EPP protocol element and the namespace used within the protocol.

The `secDNS-1.1.xsd` schema has been imported from RFC 5910 and is used to support all changes detailed within this document. Registrars must conform to these schema changes when sending DNSSEC EPP requests to IRS.

Example DS Record Using SHA-256

The following is an example DNSKEY and matching DS record.

This DNSKEY record comes from RFC 4509 Use of SHA-256 in DNSSEC DS RRS, section 2.3

The DNSKEY record:

```
dskey.example.fury. 86400 IN DNSKEY 256 3 5 ( AQOeiiR0GOMYkDshWoSKz9XzfwJr1AYts-
mx3TGkJaNXVb-
fi/2pHm822aJ5iI9BMzNXxeYCmZDRD99WYwYqUSd-
jMm-
mAphXd-
vxegXd/M5+X7OrzKBaMbCVdFLUUh6DhweJBjEVv5f2wwjM9XzcnOf+EPbtG9DMBmADjFDc2w/rljwvFw==)
; key id = 60485
```

The resulting DS record covering the above DNSKEY record using a SHA-256 digest:

```
dskey.example.fury. 86400 IN DS 60485 5 2 (
D4B7D520E7BB5F0F67674A0CCEB1E3E0614B93C4F9E99B8383F6A1E4469DA50A )
```

More About DS Records

DS records contain the following data elements:

Keytag

A short numeric value which can help quickly identify the referenced DNSKEY record.

Algorithm

The algorithm of the referenced DNSKEY record.

Digest Type

Cryptographic hash algorithm used to create the Digest value.

Digest

A cryptographic hash value of the referenced DNSKEY record.

More about DNSKEY

DNSKEY records contain the following data elements:

Flags

"Zone Key" (set for all DNSSEC keys).

Protocol

Fixed value of `3`.

Algorithm

The public key's cryptographic algorithm.

Public key

Public key data

Configuring Domains with DNSSEC Data

Registrars can configure domain names with DNSSEC information using either the IRS web portal or through EPP. The following instructions are provided for configuring DNSSEC through the portal. For more information on configuring DNSSEC by EPP, refer to the *IRS EPP Guide*.

There are three types of DNSSEC information that can be added to a domain name:

- **DS Records** - Delegation of Signing (DS) records that include information about a signed zone file.
- **DS Records with DNSKEY** - Delegation of Signing (DS) records that include information about a signed zone file and incorporate the public key used to generate the record.
- **DNSKEY** - The public key used to generate the DS records.

Once a DNSSEC record of any type has been created, it cannot be modified either through the IRS web portal or through EPP. If a DNSSEC record must be modified or changed, it must be removed from the domain and then the information must be added again as if you were creating the DNSSEC record for the first time.

To configure a domain with a DS record

Note: The following procedure describes how to configure an existing domain name. You can also configure a domain with a DS record when you are first creating the domain in IRS.

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name for which you want to configure a DS record.

   Note: You can also perform this function during the initial creation of a domain name in IRS.
3. Click the name of the domain for which you want to configure a DS record.
4. In the action bar of the **Edit Domain** page, click **Add DS Record**.
5. In the **DS Record** dialog box, configure the following:
   - **Keytag** - the identifier of the DNSKEY referred to by this DS record.
   - **Algorithm** - the algorithm of the referenced DNSKEY record.
   - **Digest Type** - a cryptographic hash algorithm used to create the **Digest** value.
   - **Digest** - a cryptographic hash value of the referenced DNSKEY record.
6. Click **Add DNSSEC Record**.
7. Click **Update Domain**.

   Note: If you do not click **Update Domain**, your DS record configuration will not be saved.

To configure a domain with a DS record with DNSKEY

Note: The following procedure describes how to configure an existing domain name. You can also configure a domain with a DS record with DNSKEY when you are first creating the domain in IRS.

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name for which you want to configure a DS record with DNSKEY.

   Note: You can also perform this function during the initial creation of a domain name in IRS.
3. Click the name of the domain for which you want to configure a DS record with DNSKEY.
4. In the action bar of the **Edit Domain** page, click **Add DS Record with DNSKEY**.
5. In the **DS Record with DNSKEY** dialog box, configure the following:
   - **Keytag** - the identifier of the DNSKEY referred to by this DS record.
   - **Algorithm** - the algorithm of the referenced DNSKEY record.
   - **Digest Type** - a cryptographic hash algorithm used to create the **Digest** value.
   - **Digest** - a cryptographic hash value of the referenced DNSKEY record.
   - **Flag** - the indicator whether the key is a zone signing key (`256`) or a key signing key (`257`).
   - **DNSKEY** - the encoded public key.
6. Click **Add DNSSEC Record**.
7. Click **Update Domain**.

   Note: If you do not click **Update Domain**, your DS record with DNSKEY configuration will not be saved.

To configure a domain with a DNSKEY

Note: The following procedure describes how to configure an existing domain name. You can also configure a domain with a DNSKEY when you are first creating the domain in IRS.

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name for which you want to configure a DNSKEY.

   Note: You can also perform this function during the initial creation of a domain name in IRS.
3. Click the name of the domain for which you want to configure a DNSKEY.
4. In the action bar of the **Edit Domain** page, click **Add DNSKEY**.
5. In the **DNSKEY** dialog box, configure the following:
   - **Flag** - the indicator whether the key is a zone signing key (`256`) or a key signing key (`257`).
   - **Algorithm** - the algorithm of the referenced DNSKEY record.
   - **DNSKEY** - the encoded public key.
6. Click **Add DNSSEC Record**.
7. Click **Update Domain**.

   Note: If you do not click **Update Domain**, your DNSKEY configuration will not be saved. The associated DS record will be generated when you click **Update Domain**.

To remove DNSSEC data from a domain

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name from which you want to remove DNSSEC data.
3. Click the name of the domain from which you want to remove DNSSEC data.
4. In the **DNSSEC** section of the **Edit Domain** page, select the check box next to the records or DNSKEYs that you want to remove or select the check box in the column header to select all of the records and DNSKEYs for the domain.
5. In the action bar, click **Remove DNSSEC Data**.
6. Click **Update Domain**.

   Note: If you do not click **Update Domain**, no DNSSEC data will be removed as your configuration changes will not be saved.

Contacts

Contacts are individuals or organizations that are associated with domain names. There are different types of contacts including:

- **Registrant** - The entity that has the authority to use and manage the domain name.
- **Administrative Contact** - Either the Registrant or someone authorized to act on behalf of the Registrant.
- **Technical Contact** - A technical contact is an individual identified as a contact for technical information-related administration of a registered domain name.
- **Billing Contact** - Also known as the Finance Contact, this is the individual or organization responsible for payment of fees related to the domain name and will monitor period activity, account balances, and account status.

Managing Contacts

For each individual contact, IRS provides the ability to display detailed information about the contact itself and also every specific action that affects the contact.

To display detailed information about an individual contact

1. In the IRS portal, click the **Contacts** tab.
2. Perform a search to display the contact name for which you want to review information.
3. Click the name of the contact.
4. In the **Edit Contact** page, review the information about the contact.

To display information about a specific action that affected an individual contact

1. In the IRS portal, click the **Contacts** tab.
2. Perform a search to display the contact name for which you want to review information.
3. Click the name of the contact.
4. In the **Edit Contact** page, scroll down to the **History** section.
5. Click the **Action ID** of the specific action for which you want to review detailed information.

   Note: You can select the **Show only changed values** checkbox to reduce the **History Detail** dialog box so that it only displays those properties of the action that have been changed since the previous action.
6. In the **History Detail** dialog box, click **Close** when you are completed reviewing the information about the action.

Contact Search

The **Contact Search** functionality allows you to perform searches for individual contacts or you can conduct searches to simultaneously display multiple contacts.

Searches can be performed for multiple contacts by separating them with a space character in a basic search. IRS will search for all of the contacts included in the search string.

Advanced search functionality allows you to build queries to perform complex searches.

Limitations

1. Searching for contacts will only provide results for a single Registrar's contacts. A Registrar will not be able to view any contacts for another Registrar.
2. Basic Search supports full word search only; it does not support a partial word search. For example, a search for the name "Smith" would return a list of all contacts named "Smith" in the system. However, if you search on the partial word "ith", no results will be returned (unless that is a full word in the system). If you would like to do a partial word search, use the Advanced Search.
3. Advanced Search requires that criteria be configured for each field.
4. To properly implement a domain name exclusion (using NOT EQUAL) in an Advanced Search, you must include the entire domain name. For example, to exclude the domain "dnssec.nz', you must configure the query as "NOT EQUAL dnssec.nz". Configuring the query as "NOT EQUAL dnssec" would not exclude the domain name.
5. To type a date criteria in an Advanced Search, it must be typed in the following format: YYYY-MM-DD (for example, 2016-12-25). Attempting to use a different format will cause the search to fail. You can also use the date selection tool instead of typing the date.

Search Procedures

To perform a basic search for contacts:

1. In the IRS portal, click the **Contacts** tab.
2. In the **Contact Search** field, type the name of the contact or the contact ID for the contact for which you want

to search.

3. Click the search icon ( ).

Note: The list of contacts displayed as a result of the search can also include variations on the search criteria allowing you to perform partial-word searches.

To perform an advanced search for contacts:

1. In the IRS portal, click the **Contacts** tab.
2. Below the **Search** field, click **Advanced**.
3. In the first search criteria pull-down menu, select the type of criteria to be selected from one of the following:
   - `Domain Name`
   - `Domain Status`
   - `Domain Life Cycle State`
   - `Domain Expiry Date`
   - `Domain Create Date`
   - `Domain Modified Date`
   - `Domain Privacy`
   - `Domain Compliance Lock`
   - `Contact Name`
   - `Contact Type`
   - `Contact ID`
   - `Contact Address`
   - `Contact Country`
   - `Contact City`
   - `Contact Postal Code`
   - `Contact Province/State/Region`
   - `Contact Email`
   - `Contact Organization`
   - `Contact Phone Number`
   - `Contact Status`
   - `Contact Language`
   - `Host Name`
   - `Registrar Name`
   - `Registrar ID`
   - `Registrar IANA ID`
4. In the operator field, select how the criteria will be applied to the query from one of the following:
   - `equal`
   - `not equal`
   - `contains` (does not apply for Contact ID and Registrar ID searches; not used for date-based queries)
   - `less` (only used for date-based queries)

- `greater` (only used for date-based queries)
- `less or equal` (only used for date-based queries)
- `greater or equal` (only used for date-based queries)

5. Depending on the criteria type selected, select the specific criteria in the pull-down menu or type the alpha-numeric characters in the criteria string field for which you want your query to search. Partial text searches are supported.

   For example, you could compose an Advanced Search to search for `Contact Name contains "Jo"` which could return results that have a contact named Joe, Joseph, or Jocelyn.

   Note: For date elements, IRS provides a graphical date selection tool to allow you to select a specific date for your search criteria. You can also type a date value into the criteria text field but it must be in the numerical format of `yyyy-mm-dd` (for example, 2016-10-31) in order to be valid. To choose a date, navigate to the year and month that you want to configure as your search criteria and click the specific date to be selected.

6. To add additional search criteria to the query, click **Add rule**.
7. In the top left corner of the query builder, select the Boolean operator by which the search criteria will be associated from either **AND** or **OR**.

   Note: IRS's query builder currently only supports one Boolean operator to associate all criteria in the query. Selecting **AND** will result in all criteria being used in the query while selecting **OR** will result in any of the criteria being used in the query.

8. When your query is completed, click **Search**.

To clear search criteria or results:

1. After configuring or performing a Basic or Advanced search, click **Reset Search**.

   Any search results or previously configured criteria will be removed from the display.

Contact Information

Contacts have a large number of properties that can be displayed in different ways in the IRS portal.

Note: The **Contact Type** property is specific to an individual domain name and will not be displayed in all pages of the IRS portal.

The following are the IRS contact properties displayed in the portal.

Info Section

Contact ID

A unique identifier for the contact.

Contact IDs must be from three (3) to sixteen (16) characters in length and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z, or numerals 0 to 9) or the hyphen (-) character.

Contact Name

The proper name of the contact.

The contact name must be from two (2) to two-hundred and fifty-five (255) characters in length. All characters are valid.

Registry Object ID

The unique identifier assigned by IRS when the object was created.

Registry Lock

The current status of whether or not the contact is locked through the Registry Lock service. If the status is Locked, the name of the domain that locked it appears in brackets beside the status. If the status field is blank, the associated domain never had Registry Lock, is currently unlocked or has had Registry Lock removed.

Registrant Lock

The current status of whether or not the contact is locked through the Registrant Lock Service. If the status is Locked, the name of the domain that locked it appears in brackets beside the status. If the status field is blank, the Registrant is not locked.

Compliance Lock

The current status of whether or not Compliance Lock has been applied to any of the contact's domains. If the status is Locked, the name of the domain that locked it appears in brackets beside the status. If the status field is blank, the contact's domains are not locked.

Created

The creation date and time that the contact object was created in the Registry.

Created By

The identifier of the user that created the contact object in the Registry.

Modified

The date and time that the contact object was last modified in the Registry.

Modified By

The identifier of the user that last modified the contact object in the Registry.

Contact Info

Email

The address to which email messages for the contact can be sent.

The contact email must be in standard email format (for example, `email@domain.tld`).

Organization

The organization that the contact represents.

If entered, the organization name must be from two (2) to two-hundred and fifty-five (255) characters in length. All characters are valid.

Phone Number

The telephone number at which the contact can be reached.

The length of the phone number is based on the specified country code. For example, for country code +1 the phone number must be 10 digits long.

If required, you can add an extension number in the extension field. The extension number must be from zero (0) to ten (10) digits long.

Fax Number

The fax number at which the contact can be reached.

The length of the fax number is based on the specified country code. For example, for country code +1, the fax number must be 10 digits long.

If required, you can add an extension number in the extension field. The extension number must be from zero (0) to ten (10) digits long.

Authorization Code

The authorization password of the contact. Authorization codes must be between the minimum and maximum number of characters defined by the Registry and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z, or numerals 0 to 9) or the hyphen (-) character.

If the Hashed Authorization Code toggle has been enabled by the Registry at the database level, this information is stored as a hashed value and will only display asterisks on the portal.

Note:

As a security measure, the authorization code is masked in this field. If you would like to reveal the content, click on the eye icon in the field. You can also copy and paste the content while it is revealed.

If the Hashed Authorization Code toggle has been enabled, this information cannot be revealed.

Authorization Code Expiry

If the Authorization Code Expiry is configured, this field displays the date and time on which the authorization code will expire. If the authorization code has expired and is no longer valid, this field displays the word "Expired".

Address

Street Address

The address at which the contact is located.

If entered, the address must be from two (2) to two-hundred and fifty-five (255) characters in length per line. All characters are valid.

Country

The country in which the contact is located.

City/Town/Village

The city, town or village in which the contact is located.

The city, town or village name must be from two (2) to two-hundred and fifty-five (255) characters in length.

Province/State/Region

The province or state in which the contact is located.

The field must be from two (2) to two-hundred and fifty-five (255) characters in length if entered.

Postal Code/ZIP Code

The postal code or ZIP code of where the contact is located.

The postal code must be from zero (0) to sixteen (16) characters if entered.

Status Section

Status Indicators

The statuses that are currently associated with the contact including their properties: **Client Status**, **Server Status**, and, **Support Status**. For more information, see "Object Status" on page 23.

Contact Details

Language

The language that the contact would prefer to be used in all communications. If the language is not selected, it will default to the language of the registry.

Domains Section

The following settings are displayed in the **Domains** table for all domains that are associated with the Contact.

Domain Name

The name of the domain.

Domain Status

The current status settings of the associated domain name.

Expiry Date

The date and time at which the registration of the associated domain name will expire.

Life Cycle State

The current state of the domain name life cycle for the associated domain.

Contact Type

The type setting that the contact is currently configured for the associated domain.

History Section

The following settings are displayed in the **History** table for all actions that affected the Contact.

Action ID

The unique identifier assigned to individual actions.

Note: Click on the **Action ID** to display detailed information about individual actions.

Action

The action performed by the Registry in response to a request.

Source

The original source from which the action affecting the contact originates. This can be one of the following:

- **EPP** - the IRS EPP interface.
- **WEB** - the IRS web portal.
- **HKP** - internal housekeeping mechanisms within IRS.
- **SQL** - the Registry database.

Modified

The date and time at which the action was performed by the Registry.

Modified By

The originator of the action.

Creating a Contact

Creating a contact in the Registry allows you to record relevant information about the contact and further improve your ability to manage domains. You can create contacts for use with multiple domains or separate contacts for individual domains.

A contact can be for an individual or a non-individual. The following guidance should be followed when creating a registrant contact:

- For an individual, "Name" is used for the name of the domain name holder/registrant
- For a non-individual, "Name" is used for the company or organisation name of the domain name holder. The Organisation field can be used to provide additional information about the company/organisation if required.

If a contact is not associated with a domain name within 60 days after it is created, the contact status is set then to pendingDelete. If the contact pendingDelete status remains in place for an additional 30 days, the contact is deleted and the Registry sends a service message to the contact's sponsor.

A contact will have its status set to pendingDelete if it is not associated with a domain name within 5 days of it being created. If the contact pendingDelete status remains in place for an additional 90 days, the contact is deleted and the Registry sends a service message to the contact's registrar sponsor.

To create a new contact

Note: You can also create a new contact during the creation of a new domain or the editing of an existing domain although the procedure is slightly different.

1. In the IRS portal, click the **Contacts** tab.
2. In the action bar, click **Create Contact**.
3. In the **Create Contact** page, type or select the properties to be assigned to the new contact. Contact properties that are mandatory are indicated with a red asterisk (*).
4. In the action bar, click **Create Contact**.

Updating a Contact

Contact information may change frequently depending on a number of factors but modifying a Contact's properties is easily done using the IRS portal. Contact information can also be modified using EPP. For more information on updating a Contact using EPP, refer to "Contact Update" on page 141.

The properties of a Contact can be modified in any of the following:

- in the **Edit Contact** page,
- in the **Create Domain** page, or,
- in the **Edit Domain** page.

Changing the Contact Type

Modifying the **Contact Type** of an individual contact in either the **Create Domain** page or the **Edit Domain** page will only change the type for that domain. If the contact is configured for other domains, the **Contact Type** setting for those domains will remain unchanged.

Modifying the **Contact Type** of a different contact as the Registrant for the domain will replace that setting for the original contact. For example, if Contact A is configured as the Registrant for Domain X but Contact B is modified to be the

Registrant, Contact A will no longer be configured as the Registrant. If **Create Domain** or **Update Domain** (depending on the procedure being performed) is clicked after this has been done, this will then remove the association of Contact A with the domain unless it has been configured as another **Contact Type** such as `Billing` or `Administrative`.

Procedures for Modifying Contacts

To modify a contact

Note: You can also modify a contact during either the creation of a new domain or the editing of an existing domain.

1. In the IRS portal, click the **Contacts** tab.
2. Perform a search to display the contact that you want to modify.
3. Click the name of the contact that you want to modify.

   Note: Alternately, you can select the check box next to the name of the contact that you want to modify and click **Edit Contact** in the action bar.
4. In the **Edit Contact** page, modify the properties that you want to change.
5. In the action bar, click **Update Contact**.

To modify a contact from the *Create Domain* page

1. In the IRS portal, click the **Domains** tab.
2. In the action bar, click **Create Domain**.
3. Perform the procedure for creating a new domain name in IRS.
4. Once a contact has been added or linked to the domain, select the check box next to the name of the contact that you want to modify in the **Contacts** section of the **Create Domain** page.
5. In the action bar, click **Edit Contact**.
6. In the **Update Contact** dialog box, modify the properties that you want to change.
7. Click **Update Contact**.

   Note: Most of the changes made to the configuration of a contact in the **Update Contact** dialog box will take effect immediately. You do not have to click **Create Domain** on the **Create Domain** page in order for your contact modifications to be saved unless you have modified the **Contact Type**. If you have modified the **Contact Type**, you must click **Create Domain** in the **Create Domain** page in order for the change to take effect.

To modify a contact in the *Edit Domain* page

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name for which you want to modify a contact.
3. Click the name of the domain for which you want to modify a contact.
4. In the **Contacts** section of the **Edit Domain** page, select the check box next to the name of the contact that you want to modify.
5. In the action bar, click **Edit Contact**.
6. In the **Update Contact** dialog box, modify the properties that you want to change.
7. Click **Update Contact**.

   Note: Most of the changes made to the configuration of a contact in the **Update Contact** dialog box will take effect immediately. You do not have to click **Update Domain** on the **Edit Domain**

page in order for your contact modifications to be saved unless you have modified the **Contact Type**. If you have modified the **Contact Type**, you must click **Update Domain** in the **Edit Domain** page in order for the change to take effect.

Restrictions

1. Contacts cannot be modified if the following status values are in effect:
    - `clientUpdateProhibited`
    - `serverUpdateProhibited`

Deleting a Contact

Deleting a contact in IRS will remove the contact object from the Registry.

Note: IRS will reject attempts to delete a contact if the contact is associated with a domain. Before attempting to delete a contact, update the domain to remove the association with the contact.

To delete an individual contact

1. In the IRS portal, click the **Contacts** tab.
2. Perform a search to display the contact that you want to delete.
3. Click the name of the contact that you want to delete.
4. Click **Delete Contact** in the action bar.
5. In the **Contact Delete** dialog box, click **Delete Contact**.

Restrictions

1. Contacts cannot be deleted if the following status values are in effect:
    - `clientDeleteProhibited`
    - `serverDeleteProhibited`

Hosts

A host (also known as a name server) uses DNS to resolve domain names into IP addresses. Your IRS-managed Registry maintains and publishes information about the hosts that contain IP address information for associated registered domains. Configuring name server data for a domain name is not mandatory.

IRS supports both IPv4 and IPv6 address types for hosts.

If name servers are configured, IRS requires that two or more name servers be configured in order to activate a domain name. A-labels are accepted in the IRS Registry.

Registrars must convert a host:name that contains Unicode characters to its A-label value in order to register the host name.

Managing Hosts

For each individual host, IRS provides the ability to display detailed information about the host itself and also every specific action that affects the host.

To display detailed information about an individual host

1. In the IRS portal, click the **Hosts** tab.
2. Perform a search to display the host name for which you want to review information.

3. Click the name of the host.
4. In the **Edit Host** page, review the information about the host.

To display information about a specific action that affected an individual host

1. In the IRS portal, click the **Hosts** tab.
2. Perform a search to display the host name for which you want to review information.
3. Click the name of the host.
4. In the **Edit Host** page, scroll down to the **History** section.
5. Click the **Action ID** of the specific action for which you want to review detailed information.

   Note: You can select the **Show only changed values** checkbox to reduce the **History Detail** dialog box so that it only displays those properties of the action that have been changed since the previous action.
6. In the **History Detail** dialog box, click **Close** when you are completed reviewing the information about the action.

Host Search

The **Host Search** functionality allows you to perform searches for individual hosts or you can conduct searches to simultaneously display multiple hosts.

Advanced search functionality allows you to build queries to perform complex searches.

Special Notes on Performing Searches

1. Searches can be performed for multiple hosts by separating them with a space character in a basic search. IRS will search for all of the hosts included in the search string.
2. To perform a search for a host name that uses an IDN (Internationalized Domain Name), you can type the host name in either **A-label**[1] or **U-label**[2] format.

Limitations

1. Advanced Search requires that criteria be configured for each field.
2. To properly implement a domain name exclusion (using NOT EQUAL) in an Advanced Search, you must include the entire domain name. For example, to exclude the domain "dnssec.nz', you must configure the query as "NOT EQUAL dnssec.nz". Configuring the query as "NOT EQUAL dnssec" would not exclude the domain name.
3. To type a date criteria in an Advanced Search, it must be typed in the following format: YYYY-MM-DD (for example, 2016-12-25). Attempting to use a different format will cause the search to fail. You can also use the date selection tool instead of typing the date.

Search Procedures

To perform a basic search for hosts:

1. In the IRS portal, click the **Hosts** tab.
2. In the **Host Search** field, type the characters in the name of the host for which you want to search.

[1]The ASCII-Compatible Encoded (ACE) representation of an internationalized domain name that always begins with the prefix "xn--". A-labels use Punycode transcription.
[2]The Unicode label version of a domain name which can be used for internationalized domain names (IDNs). U-labels allow for language-specific scripts or alphabets (such as Arabic, Chinese, or characters with diacritics or ligatures) in domain names encoded in multi-byte Unicode.

3. Click the search icon ( ).

Note: The list of hosts displayed as a result of the search can also include variations on the search criteria allowing you to perform partial-word searches.

To perform an advanced search for hosts:

1. In the IRS portal, click the **Hosts** tab.
2. Below the **Search** field, click **Advanced**.
3. In the first search criteria pull-down menu, select the type of criteria to be selected from one of the following:
   - `Domain Name`
   - `Domain Status`
   - `Domain Life Cycle State`
   - `Domain Expiry Date`
   - `Domain Create Date`
   - `Domain Modified Date`
   - `Contact ID`
   - `Contact Country`
   - `Contact City`
   - `Contact Province/State/Region`
   - `Host Name`
   - `Host IPv4`
   - `Host IPv6`
   - `Host Status`
   - `Registrar Name`
   - `Registrar ID`
   - `Registrar IANA ID`
4. In the operator field, select how the criteria will be applied to the query from one of the following:
   - `equal`
   - `not equal`
   - `contains` (does not apply for Contact ID and Registrar ID searches; not used for date-based queries)
   - `less` (only used for date-based queries)
   - `greater` (only used for date-based queries)
   - `less or equal` (only used for date-based queries)
   - `greater or equal` (only used for date-based queries)
5. Depending on the criteria type selected, select the specific criteria in the pull-down menu or type the alpha-numeric characters in the criteria string field for which you want your query to search. Partial text searches are supported.

   For example, you could compose an Advanced Search to search for `Contact Name contains "Jo"` which could return results that have a contact named Joe, Joseph, or Jocelyn.

Note: For date elements, IRS provides a graphical date selection tool to allow you to select a specific date for your search criteria. You can also type a date value into the criteria text field but

it must be in the numerical format of `yyyy-mm-dd` (for example, 2016-10-31) in order to be valid. To choose a date, navigate to the year and month that you want to configure as your search criteria and click the specific date to be selected.

6. To add additional search criteria to the query, click **Add rule**.
7. In the top left corner of the query builder, select the Boolean operator by which the search criteria will be associated from either **AND** or **OR**.

   Note: IRS's query builder currently only supports one Boolean operator to associate all criteria in the query. Selecting **AND** will result in all criteria being used in the query while selecting **OR** will result in any of the criteria being used in the query.

8. When your query is completed, click **Search**.

To clear search criteria or results:

1. After configuring or performing a Basic or Advanced search, click **Reset Search**.

   Any search results or previously configured criteria will be removed from the display.

Host Information

Hosts have a number of properties that can be displayed in different ways in the IRS portal.

Host Search Page

The following are the IRS host properties displayed in the **Host Search** page:

Host Name

The host name is comprised of segments of alphanumeric or hyphen characters delimited by period characters. For example, `hostname1.domainname.nz` or `hostname2.domainname.nz`.

Characters must be alphanumeric or hyphens with the exception you cannot use a hyphen as the first character, the third and fourth characters (combined together), or the last character of a label. For example, `ns1.te--st.nz` is invalid with two hyphens as the third and fourth characters.

IPv4 Address

The IPv4 address(es) associated with the host. An IPv4 address is a unique 32-bit identifier that consists of a set of four numbers in the range of 0 to 255, separated by periods. For example, `64.230.164.58`.

IPv6 Address

The IPv6 address(es) associated with the host. An IPv6 address is a unique 128-bit identifier. IPv6 notation consists of eight groups of four hexadecimal digits, separated by colons. For example, `2001:db8:0000:0000:0000:0000:0000:5b0f`.

Status

The current status value of the host. A host object always has at least one associated status value.

Create/Edit Host Page

The following are the IRS host properties displayed in the **Create Host** and **Edit Host** page for individual hosts:

Info Section

Host Name

The host name is comprised of segments of alphanumeric characters delimited by period characters. Hyphens are permitted. For example, `hostname1.domainname.nz` or `hostname2.domainname.nz`.

IPv4 Addresses

The IPv4 address(es) associated with the host. An IPv4 address is a unique 32-bit identifier that consists of a set of four numbers in the range of 0 to 255, separated by periods. For example, `64.230.164.58`.

Note: When entering multiple IP addresses in the IPv4 Addresses field, use a comma to separate the addresses.

IPv6 Addresses

The IPv6 address(es) associated with the host. An IPv6 address is a unique 128-bit identifier. IPv6 notation consists of eight groups of four hexadecimal digits, separated by colons. For example, `2001:db8:0000:0000:0000:0000:0000:5b0f`.

Note: When entering multiple IP addresses in the IPv6 Addresses field, use a comma to separate the addresses.

Superordinate Domain Name

The relationship that the parent domain object has with the child host object. For example, `ns1.super.nz` has a lesser or subordinate relationship to the domain name `super.nz`.

Registry Object ID

The IRS-generated object identifier that was assigned to the host object.

Registry Lock

The current status of whether or not the host is locked through the Registry Lock Service. If the status is Locked, the name of the domain that locked it appears in brackets beside the status. If the status field is blank, the associated domain never had Registry Lock, is currently unlocked or has had Registry Lock removed.

Created

The date and time at which the host object was created in the registry.

Created By

The name that created the host object.

Modified

The date and time at which the host object was last modified.

Modified By

The name that last modified the host object.

Status Section

Status Indicators

The statuses that are currently associated with the host including their properties: **Client Status**, **Server Status**, and, **Support Status**. For more information, see "Object Status" on page 23.

Domains Section

Domains

The properties of the specific domains that are currently associated with the host including the **Domain Name**, **Domain Status**, **Expiry Date**, and, **Life Cycle State**.

History Section

Note: Click on the **Action ID** to display detailed information about individual actions.

Action ID

The unique identifier assigned to individual actions that affect the host.

Action

The action performed by the Registry in response to the request.

Source

The original source from which the action affecting the host originates. This can be one of the following:

- **EPP** - the IRS EPP interface.
- **WEB** - the IRS web portal.
- **HKP** - internal housekeeping mechanisms within IRS.
- **SQL** - the Registry database.

Modified

The date and time at which the action was performed by the Registry.

Modified By

The originator of the action.

Creating a Host

Creating a host in IRS creates a host object identified by its name in the Registry. Hosts can be used as name servers in the Domain Name System (DNS).

Note: IP addresses are only required when IRS is managing the top-level domain of the host.

To create a new host

1. In the IRS portal, click the **Hosts** tab.
2. In the action bar, click **Create Host**.
3. In the **Host Create** page, type or select the properties to be assigned to the new host. Host properties that are mandatory are indicated with a red asterisk (*).
4. In the action bar, click **Create Host**.

Updating a Host

Depending on the nature of your network, host information may change from time to time but modifying a host's properties is a straightforward procedure using the IRS portal.

You can modify the properties of a host in the **Edit Host** page or you can also change the configuration of a host from the **Edit Domain** page.

To modify a host

1. In the IRS portal, click the **Hosts** tab.
2. Perform a search to display the host that you want to modify.

3. Click the name of the host that you want to modify.

   Note: Alternately, you can select the check box next to the name of the host that you want to modify and click **Edit Host** in the action bar.

4. In the **Edit Host** page, modify the properties that you want to change.
5. In the action bar, click **Update Host**.

To modify a host from the Edit Domain page

1. In the IRS portal, click the **Domains** tab.
2. Perform a search to display the domain name for which you want to modify a host.
3. Click the name of the domain for which you want to modify a host.
4. In the **Hosts** section of the **Edit Domain** page, select the check box next to the name of the host that you want to modify.
5. In the action bar, click **Edit Host**.
6. In the **Update Host** dialog box, modify the properties that you want to change.
7. Click **Update Host**.

   Note: Changes made to the configuration of a host in the **Update Host** dialog box will take effect immediately. You do not have to click **Update Domain** on the **Edit Domain** page in order for your host modifications to be saved.

Restrictions

1. Hosts cannot be modified if the following status values are in effect:
   - `clientUpdateProhibited`
   - `serverUpdateProhibited`
2. If the `clientUpdateProhibited` status is in effect but the `serverUpdateProhibited` status is not in effect, you can modify the host to remove the `clientUpdateProhibited` status from the host.
3. To modify a host object, the resulting host object and its associations with domains and contacts must remain valid.

Deleting a Host

Deleting a host in IRS will remove the host object from the Registry.

Note: IRS will reject attempts to delete a host if the host is associated with a domain. Before attempting to delete a host, update the domain to remove the association with the host.

To delete an individual host

Note: Hosts can also be deleted in the **Update Host** page by clicking **Delete Hosts** in the action bar.

1. In the IRS portal, click the **Hosts** tab.
2. Perform a search to display the host that you want to delete.
3. Select the check box next to the name of the host that you want to delete.
4. In the action bar, click **Delete Host**.
5. In the **Host Delete** dialog box, click **Delete Host**.

Restrictions

1. Hosts cannot be deleted if the following status values are in effect:
    - `clientDeleteProhibited`
    - `serverDeleteProhibited`

Administration

Using the IRS portal to manage your domain objects, contact objects, and host objects will also require the performance of certain administrative functions. This includes managing the user accounts that can access the IRS portal as well as basic interface settings.

The **Admin** menu in the IRS portal provides access to the following functions:

- "Bulk Operations" below
- "Registrar Settings" on the facing page
- "Reports" on page 81
- "User and API Client Accounts" on page 82

Bulk Operations

The Bulk Operations page displays information about the status of in progress or completed bulk jobs associated with the Registrar. Bulk operations allow Registrars to perform the same operation on multiple entities.

Registry or System users can see all jobs; Registrar users can only see the jobs run for that Registrar.

To cancel a bulk operations job

1. In the IRS portal, click the **Admin** tab.
2. Select **Bulk Operations**.
3. Select the checkbox next to the **Job ID** of the job that you want to cancel.
4. In the action bar, click **Cancel Job**.
   The Cancel Job dialog box appears.
5. Enter any comments to record why you are cancelling the job.
6. Click **Cancel Job**.

Bulk Operations Information

The **Bulk Operations** page displays the following information:

Job ID

A unique identifier for the bulk operation. If the job status is Completed with errors, you can click on the Job ID link to view more information about the job.

Job Operation

Displays the type of operation.

Job Date

Displays the date and time when the operation was started.

Progress

Displays the status of the job: In Progress, Completed, Completed with errors, or Cancelled. It also displays the number of successful or failed transactions and the total number of records requested.

Registrar Settings

The following are the IRS Registrar properties displayed for individual Registrars.

Info Section

You can make changes to most of these settings at any time; click **Update Registrar** in the action bar to save your changes.

Registrar Name

The identifying name of the Registrar.

Note: Only users with the correct permissions can update the Registrar Name field. Contact Registrar Support to update the Registrar Name.

Registrar ID

The unique identifier assigned by the Registry to the individual Registrar.

IANA ID

The unique identifier assigned to the Registrar by the Internet Assigned Numbers Authority (IANA).

Note: Only users with the correct permissions can update the IANA ID field. Contact Registrar Support to update the IANA ID.

Registrar Website

The URL of the Registrar's web site.

Preferred Language

The language that the Registrar would prefer to be used in all communications.

Register Premium Names

This option, which can be updated by the Registrar, determines whether a registrar is able to create or transfer a domain that has a premium tag associated to it. When this setting is disabled and a Registrar attempts to register or transfer a premium domain, they will receive a Blocked Operation error. If a premium domain name is needed, this setting can be enabled to register the domain, and then disabled again.

This option is not supported under .nz policy. All domain names are provided at the same price.

Notes

Additional text used to record information about the Registrar that is not provided in other property fields.

Whois Server

This feature is not implemented and will be ignored.

RDAP Server

This feature is not implemented and will be ignored.

Created

The date and time at which the Registrar was created.

Modified

The date and time at which the Registrar's settings were last modified.

Modified by

The name of the account that modified the Registrar's settings.

Contact Info Section

You can make changes to these settings at any time; click **Update Registrar** in the action bar to save your changes.

Note: If you change the Country or Province/State of a Registrar that has taxes automatically assigned (see "Automatically Assign Tax" on the facing page), its taxes will be automatically updated to the taxes for that region.

Street

The postal address at which the Registrar is located.

Country

The country in which the Registrar is located.

City

The city in which the Registrar is located.

Province/State

The province or state in which the Registrar is located.

The field must be from two (2) to two-hundred and fifty-five (255) characters in length if entered.

Postal Code/ZIP Code

The postal code or ZIP code of where the Registrar is located.

Email Address

The address to which email messages for the Registrar can be sent.

Phone Number

The telephone number at which the Registrar can be reached.

FAX Number

The FAX number at which the Registrar can be reached.

Registrar Status Section

Registrar Status

The current status of the Registrar.

Anniversary Date

The Registrar's anniversary date.

Active Since

The date when the Registrar first became active.

Do Not Renew

The option to not allow automatic Registrar recertification. The Do Not Renew checkbox only appears if Registrar Recertification is enabled.

Financial Details Section

Account Type

The type of financial account for the Registrar. The default setting is `Prepaid`.

When a Registrar is assigned an account type of `Direct Debit`, fund allocation related to that Registrar will be handled externally from the IRS platform. This means the system will not check for sufficient funds prior to doing any financial transactions such as registrations, renewals or transfers. The portal will display a running total of charges and refunds for the current month so the Registrar will always have an up-to-date view of their invoiceable amount, as well as a forecast amount of the estimated final invoice for that month. The Usage and Forecast Usage are reset on the first of every month. The Registry will establish a threshold limit for each Registrar so that an email will be sent whenever the Registrar exceeds that limit during the month, but this will not affect future transactions.

Prepaid Fields

The following fields are only displayed if the **Account Type** is `Prepaid`.

Current Account Balance

The amount of the current balance for the Registrar's account.

Email Reminder Threshold

The value that will be used to trigger automatic reminders when the balance reaches the specified threshold.

Minimum Balance

The minimum value that the Registrar's account must contain in order to continue normal business transactions.

Direct Debit Fields

The following fields are only displayed if the **Account Type** is `Direct Debit`.

Usage

The sum of the amount for all transactions that happened in the current month.

Forecast Usage

The estimated monthly charge.

Email Reminder Threshold

The value that will be used to trigger automatic reminders when the balance reaches the specified threshold.

Tax Details

Registrar Tax Number

The tax number for the Registrar. Users with the correct permissions can enter this value, up to a maximum of 256 characters.

Automatically Assign Tax

This checkbox indicates whether or not the tax rate will be assigned automatically based on the billing address.

Tax Name

The name of the sales tax that will be applied.

Tax Rate

If a sales tax is applied, the rate (as a percentage) that will be charged for the tax.

Effective Date

The date and time at which the tax will begin to be applied.

Expiry Date

The date and time after which the tax will no longer be applied.

Event Pricing

Year

Indicates the length of the term for either domain name registration or domain name renewal.

Registration

Indicates the fee to be charged for a specific term for an initial domain name registration.

Renewal

Indicates the fee to be charged for a specific term for a domain name registration renewal.

Event

Indicates the type of event for which specific fees will be charged including: **Auto-Renew**, **Delete**, **Restore**, **Transfer**, **Droplist Claim**, and **Registrant Change Validation**.

Fee

Indicates the fee to be charged for each event.

Annual Fees

Indicates any applicable fees that are due to the Registry on an annual basis:

- Droplist Cost / Connection - the annual fee for each connection that a Registrar has to the Droplist Sessions
- Registry Lock - the annual fee for the Registry Lock Service

Droplist Connections

Number of paid Droplist connections

Indicates the number of connections that you have paid for that can access the Droplist server during a Droplist Session. Registries may provide one or more free connections; the number of free connections is displayed in the note.

To update the number of connections

To update the number of Droplist connections, select **Edit Droplist Connections** from the Action Bar. This dialog window displays the number of free droplist connections offered by the Registry and allows you to maintain the number of extra connections you would like to have.

The changes will be saved and charges applied (if applicable) when you click Update Connections.

Note: The **Edit Droplist Connections** link will be disabled 30 minutes before a Droplist Session begins. This is to ensure that all updates to the Droplist Session will be included before the session begins. This link will be enabled again as soon as the Droplist Session has ended.

Contacts Section

Contacts

The properties of the contacts associated with the user including the **Name**, **Title**, **Contact Type**, **Phone Number**, **Fax Number** and, **Email Address**.

The following contact types can be assigned to one or more contacts:

- **Abuse**: The person to contact if it is suspected that there is corrupt behavior occurring on a site or a potential DNS attack has occurred. The abuse contact details also appear in the WHOIS/RDAP response on a domain lookup.
- **Admin**: The administrator contact for the Registrar. It is this contact who receives Registry Lock and Registrar Recertification emails, if applicable.
- **Billing**: The person to contact for finance related matters, as well as the person to receive financial emails.
- **Communications**: The person to contact to receive general communications.
- **Compliance**: The person to contact for compliance related matters. The Registry conducts compliance work to monitor Registrar portfolios, spot check Registrant data, and to respond to requests for information that may result in Registrars needing to act if the Registry finds non-compliance with Registry policy. If so, this contact may be contacted for additional information or action.
- **Customer Service**: The person to contact to provide support to the customer.
- **Dispute**: The person to contact in the event of any ongoing domain dispute. The Domain Name Dispute Resolution Policy is a process established by ICANN for the resolution of disputes regarding the registration of internet domain names. This contact will receive emails regarding any ongoing domain disputes.
- **Droplist**: The person to contact for any Droplist issues or questions, if the Registry or Registrar uses the Droplist feature.
- **Emergency**: The person to contact in case of an urgent matter that requires quick action.
- **Main**: The main person to contact for general questions.
- **Marketing**: The person to contact to discuss marketing campaigns, materials and promotions.
- **Technical**: The person to contact if there are technical issues related to the Registry or Registrar platforms.

In the action bar of the **Create Registrar** page or the **Edit Registrar** page, click **Create Contacts** to create new Registrar contacts and configure their settings.

Click **Edit Contacts** or **Delete Contacts** in the action bar to modify or delete an existing Registrar contact.

Click **Update Registrar** to save your changes.

Note: All Registrars are required to have an **Admin** contact.

IP Allowlist Settings

IP Addresses for Portal

This section allows Registrars to enter or update the list of IP addresses they would like to use to access the portal. A maximum of ten IP addresses may be entered. The following conditions must be met when entering or updating IP addresses:

- At least one IP address is required if portal allowlist settings are enabled.
- The IP address must be unique. It cannot be duplicated in this list and cannot be used by another Registrar. The same IP Address may be used in both the EPP Server and Droplist list, however.
- IP address blocks may be used. For IPV4 blocks, the minimum prefix acceptable is 16; for IPV6 blocks, the minimum prefix acceptable is 64.

Note: If portal allowlist settings are enabled, you cannot delete all of the IP addresses in this table.

IP Addresses for EPP Servers

This section allows Registrars to enter or update the list of IP addresses they would like to use to access EPP servers. A maximum of ten IP addresses may be entered. The following conditions must be met when entering or updating IP addresses:

- The IP address must be unique. It cannot be duplicated in this list and cannot be used by another Registrar. The same IP Address may be used in both the portal and Droplist list, however.
- IP address blocks may be used. For IPV4 blocks, the minimum prefix acceptable is 16; for IPV6 blocks, the minimum prefix acceptable is 64.

IP Addresses for Droplist Servers

Note: The Droplist feature can be enabled or disabled by Registry or System-level users and may not be in effect for this Registry at this time.

This section allows Registrars to enter or update the list of IP addresses they would like to use during a Droplist Session. A maximum of ten IP addresses may be entered. The following conditions must be met when entering or updating IP addresses:

- The IP address must be unique. It cannot be duplicated in this list and cannot be used by another Registrar. The same IP Address may be used in both the EPP Server and portal, however.
- IP address blocks may not be used at this time.

Note: Updates to the Droplist IP Addresses are not allowed 30 minutes prior to or during a Droplist Session to ensure that any changes will be in effect in time for a session.

History Section

Note: Click on the **Action ID** to display detailed information about individual actions.

Action ID

The unique identifier assigned to individual requests made to the Registry that affect the Registrar.

Action

The action performed by the Registry in response to the request.

Source

The original source from which the action affecting the Registrar originates. This can be one of the following:

- **WEB** - the IRS web portal
- **SQL** - the Registry database
- **HKP** - the internal housekeeping mechanisms within IRS

Modified

The date and time at which the request was made to the Registry.

Modified By

The originator of the request.

Data Export

You can export CSV files with the following information from the Export section of the action bar:

- A list of all domains belonging to a Registrar
- A list of all financial transactions for a Registrar

Export Domain List

You can export a detailed list of all domains belonging to a Registrar by clicking on **Domain List** in the action bar.

To export a list of a Registrar's domains

1. In the IRS portal, click the **Admin** tab.
2. Select **Registrar Settings**.
3. In the action bar, click **Domain List**.

   IRS produces a CSV file that contains a list of all domains sponsored by the requesting Registrar with the following details:

   - Domain name
   - Life cycle state
   - Life cycle state ends
   - Created date
   - Expiry date
   - Registrant ID
   - Registrant Name
   - Organization
   - Registry Lock Status

Export Transaction Details

Users with the correct permissions can export a detailed list of all financial transactions belonging to a Registrar by clicking on **Transaction Details** in the action bar. This list contains domain transactions and Registrar balance entries going back to the first day of the previous month.

To export a list of a Registrar's financial transactions

1. In the IRS portal, click the **Admin** tab.
2. Select **Registrar Settings**.

3. In the action bar, click **Transaction Details**.
4. Select the date range for which you want to view financial transactions, to a maximum of two months.
5. Click **Apply**.

   IRS produces a CSV file that contains a list of all financial transactions belonging to the requesting Registrar with the following details:

   - Request
   - Event
   - Description
   - Domain Name
   - Transaction Date
   - Amount

Registrar Status

The status of a Registrar on the IRS platform determines what functionality is enabled for the Registrar and which features are disabled.

The status values for a Registrar in IRS are:

- `Active` - Registrar is currently registering and managing domain names, all IRS functionality that is ordinarily available to the Registrar is enabled.
- `Applied` - New potential Registrar is in the process of being approved, IRS functionality available to an `Applied` Registrar is limited.
- `Restricted` - Registrar is no longer active due to business reasons, some IRS functionality that is ordinarily available to the Registrar is disabled.
- `Inactive` - Registrar is no longer registering and managing domain names, all IRS functionality that is ordinarily available to the Registrar is disabled.

Note: Registry and system-level users are still able to perform all relevant functions on behalf of Registrars as needed.

Limitations

Depending on their current status, a Registrar will be subject to restrictions on the following features:

Active

Active Registrars have access to all of the functionality that is normally available for their account.

Applied

- cannot register a new domain name
- cannot request domain name transfers
- cannot create or modify any Domains, Contacts, Hosts, or perform Transfer requests
- cannot purchase Registry Lock for a domain
- no notification emails about low balances will be sent

Note: An `Applied` Registrar can create and modify user accounts and can also modify their own Registrar settings.

Restricted

- can no longer register a new domain name
- can no longer restore domain names
- can no longer explicitly renew an existing domain name

  Note: Automatic renewals will continue to succeed without restriction.
- can no longer request domain name transfers
- can no longer purchase Registry Lock for a domain

Inactive

- can no longer register a new domain name
- can no longer restore domain names
- can no longer explicitly renew an existing domain name

  Note: Domains that are currently in the `autoRenewPeriod` stage will continue with their normal life cycle. Registered domains for inactive Registrars will now transition to the `redemptionPeriod` stage immediately instead of the `autoRenewPeriod` stage when their expiry date is reached.
- can no longer request domain name transfers
- can no longer create or modify their Domains, Contacts, Hosts, Registrar settings, User accounts, or perform any Transfer requests, Transfer approvals, or Transfer rejections
- can no longer purchase Registry Lock for a domain
- is automatically changed to the `Prepaid` financial account type if participating in the credit program
- no notification emails about low balances will be sent

Note: For Registry and system-level users, completely inactivating a Registrar requires both transitioning the Registrar to an `Inactive` state and also disabling all associated user accounts.

Implications for Domain Name Transfers

1. If the Registry is configured with the **Instant Transfer** setting to automatically perform domain name transfers without any approvals required, a Registrar that is currently in either a `Restricted` or an `Inactive` state cannot request domain name transfers. Other Registrars can, however, request transfers of domains that are associated with a Registrar that is either `Restricted` or `Inactive`.
2. If the Registry is not configured with the **Instant Transfer** setting so that domain name transfers require approval, a Registrar that is in a `Restricted` state can approve or reject transfer requests but cannot request domain name transfers. Other Registrars can, however, request transfers of domains that are associated with a `Restricted` Registrar.
3. If a Registrar is in an `Inactive` state and domain name transfers require approval, the Registrar cannot approve, reject, or request domain name transfers but other Registrars can request transfer of domains that are associated with an `Inactive` Registrar.
4. If there is a pending transfer of a domain name to a Registrar that changes from an `Active` to an `Inactive` state, the transfer will automatically be cancelled.
5. If there is a pending transfer of a domain name from a Registrar that changes from an `Active` to an `Inactive` state, the transfer will continue to proceed as per usual.

Reports

The Reports page allows Registrars to download monthly pre-generated report files. It is only visible to users with the appropriate permissions.

The following Report types are available for download from this page:

- Financial Details
- Financial Summary
- Registrar Market Share
- Registrar Market Share FY
- Scorecard

Registry or System users can access all reports; Registrar users can only access the reports belonging to that Registrar.

To download a report

1. In the IRS portal, click the **Admin** tab.
2. Select **Reports**.
3. In the **Report Title** section, click on the type of report that you want to download. This will show all of the reports of that type.
4. In the **Report** section, click the name of the report to download it.

   You can use the Search bar to find a specific report if it is not initially visible.
5. Save the downloaded file to where it is most appropriate.

User and API Client Accounts

Multiple user and API client accounts can be configured to provide access to the IRS portal so that you can delegate certain functions to different accounts. You can only maintain users at your level of permission or lower; for example, RGY-level users can maintain users at the RGY or RAR level and RAR-level users can only maintain users at the RAR level.

The following are the different types and roles for IRS user and API Client accounts:

Registrar Accounts

Portal Realm

- **Admin** - can manage Registrar information, Registrar contacts, users, Droplist connections and IP allowlist; cannot manage domains, contacts, or hosts
- **Finance** - can view Registrar information and Registrar financial reports
- **Read-Only** - can view Registrar information domains, contacts, hosts, but cannot change any settings
- **Security** - has access to Registry Lock service options; this role must be assigned by a Registry user
- **Support** - can manage Registrar information, domains, contacts and hosts; cannot manage users or IP allowlists

EPP Realm

- **EPP** - has access to the EPP interface to execute commands

API Client Accounts

Registrar Accounts

- **Domain Info**- has access to the sendAuthCode endpoint API

User and API Client Account Information

For more information on the different settings for user and API client accounts, refer to "Account Information" on page 85.

User and API Client Account Management

IRS provides the following functions for managing user and API client accounts:

To perform a search for users or API clients

Note: Accessing this feature requires that you log in with an account that has the appropriate permissions to use this functionality.

1. In the IRS portal, click the **Admin** tab.
2. Select **Users**.
3. In the **User Search** field, type alphanumeric characters in the name of the user or API Client for which you want to search.
4. Click the search icon ( ).

   Note: The list of users and API Clients displayed as a result of the search can also include variations on the search criteria allowing you to perform partial-word searches.

To create a new user or API Client

1. In the IRS portal, click the **Admin** tab.
2. Select **Users**.
3. In the action bar, click **Create User**.
4. In the **Create User** page, type or select the properties to be assigned to the new user or API Client. Properties that are mandatory are indicated with a red asterisk (*).
5. Click **Create User**.

To modify an existing user or API Client

Note: The **Username** and **User Type** properties cannot be modified.

1. In the IRS portal, click the **Admin** tab.
2. Select **Users**.
3. Perform a search to display the user or API Client that you want to modify.
4. Click the name of the user or API Client that you want to modify.

   Note: Alternately, you can select the check box next to the name of the user or API Client that you want to modify and click **Edit User** in the action bar.
5. In the **Edit User** page, modify the properties that you want to change.
6. Click **Update User**.

To Regenerate an API Client Secret

To authenticate API Clients with the Keycloak server, you require a client ID and a secret key.

1. In the IRS portal, click the **Admin** tab.
2. Select **Users**.
3. Perform a search to display the API Client for which you want to regenerate a secret.
4. Click the name of the API Client for which you want to regenerate a secret.

   Note: Alternately, you can select the check box next to the name of the API Client for which you want to regenerate a secret and click **Edit User** in the action bar.
5. Click **Regenerate Secret** in the action bar.

The new secret key appears on the Edit User page.

To delete an individual user or API Client

In addition to the procedure described below, you can also delete an individual user or API Client from the **Update User** page.

Note: No user account has the capability to delete itself.

1. In the IRS portal, click the **Admin** tab.
2. Select **Users**.
3. Perform a search to display the user that you want to delete.
4. Select the check box next to the name of the user that you want to delete.
5. Click **Delete User** in the action bar.
6. In the **User Delete** dialog box, click **Delete User**.

To display information about a specific action that affected a user or API Client account

1. In the IRS portal, click the **Admin** tab.
2. Select **Users**.
3. Perform a search to display the user or API Client.
4. Click the name of the user or API Client for which you want to display information about a specific action.
5. In the **Edit User** page, scroll down to the **History** section.
6. Click the **Action ID** of the specific action for which you want to review detailed information.

   Note: You can select the **Show only changed values** check box to reduce the **History Detail** dialog box so that it only displays those properties of the action that have been changed since the previous action.
7. In the **History Detail** dialog box, click **Close** when you are completed reviewing the information about the action.

To Remove One or More Existing Two-Factor Authentication Devices Associated to a User Account

Users can remove one or more existing two-factor authentication devices currently associated to a user account from the **Edit User** page. This procedure does not apply to EPP or API Client accounts, as two-factor authentication cannot be set for these account types.

1. In the IRS portal, click the **Admin** tab.
2. Select **Users**.
3. Perform a search to display the user account for which you want to remove one or more existing two-factor authentication devices.
4. Select the username of the user you would like to edit.
5. Click **Remove Device** in the action bar.
6. In the **Remove Device** dialog box, select the device or devices that you would like to remove. If you remove all of the devices, you must set up the two-factor authentication service again on your next login.
7. Click **Remove Device**.

This may also be performed by any user from their User Settings page.

After the devices are removed, the user will be prompted to configure a new device on the next sign in.

Account Information

Portal/EPP User Account Information

IRS portal and EPP user account types consist of a number of properties including the following:

Info Section

Enabled

This option indicates whether or not the user account is activated and can be used. If this option is not selected, the user account is considered to be disabled and cannot be used.

Note: This option is only displayed when editing another user's account. This option is not displayed when editing the properties of your own user account.

Account Type

The type of account to be assigned to this user.

You cannot modify the **Account Type** property.

User Type

The type of user to be assigned to this user account. This field is only visible during a User Create. For more information, refer to "User Accounts" on page 7.

Username

The unique identifier of the user account that is used when logging in.

You cannot modify the **Username** property.

User names must be from two (2) to sixteen (16) characters in length and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z,or numerals 0 to 9), underscores, hyphens, or @ characters.

First Name

The proper name of the individual for whom the account is created.

Last Name

The surname of the individual for whom the account is created.

Phone Number

The telephone number to be used to contact the individual for whom the account is created.

Email

The email address to be used to contact the individual for whom the account is created.

Notes

Additional text to record information about the user that is not provided in other property fields.

Security Section

Roles

The roles associated with the user account.

Registrar account Portal realm roles include:

- **RAR Admin**
- **RAR Finance**
- **RAR Read-Only**
- **RAR Security**
- **RAR Support**

Registrar account EPP realm roles include:

- **RAR EPP**

Note: The **Roles** property cannot be modified (and is read-only) when editing the properties of your own user account. This property can be modified when editing another user's account.

Two-Factor Authentication

Two-factor authentication is enabled for all users as part of IRS security measures. Users cannot modify the two-factor authentication setting.

If two-factor authentication has been enabled, but the user has not gone through the procedure to set it up yet, the words "Requires Setup" will appear beside the Two-Factor Authentication checkbox label. After the user follows the set-up procedure, the word "Active" appears beside the label. If two-factor authentication is enabled for the user, but that user has unchecked the check box, the label will be removed when the change is saved.

To set up two-factor authentication on a mobile device for the first time

Before you can set up two-factor authentication, make sure you have Google Authenticator or FreeOTP installed on your device.

1. Browse to the IRS portal.

2. Enter your username and password.

3. Click Login.

4. When the Mobile Authenticator Setup screen is displayed, start Google Authenticator or FreeOTP on your smart phone or tablet.

5. Scan the QR code displayed on the Mobile Authenticator Setup screen or type the security key displayed below it in Google Authenticator or FreeOTP.

6. Google Authenticator or FreeOTP will then display a security code on your smart phone or tablet.

7. Type the security code in the One-time code field of the Mobile Authenticator Setup screen.

8. Enter a name for your device. This is a free-form field you can use to identify your device.

9. Click Submit.

Reset Password

The security password to be used by this account in the **New Password** and **Password Confirmation**

fields.

Passwords must meet security requirements, which are set by the Registry.

Note: Passwords for EPP accounts have a maximum length of sixteen (16) characters and cannot use the ampersand (&) character.

Note: If you have forgotten your password and need to reset it from the login page, click on the Forgot Password link. An email will then be sent to you with a link to reset your credentials. When you click on this link the Update Password screen appears. If you are using two-factor authentication, you will first be asked to enter your one-time two-factor authentication code. If the code is correct, then the Update Password screen appears.

History Section

Historical data about actions that affected the user account.

Click on the **Action ID** to display more detailed information about individual actions.

Action ID

The unique identifier assigned to individual requests that affect the user account.

Action

The action performed in response to the request.

Source

The original source from which the action affecting the user account originates. This can be one of the following:

- **WEB** - the IRS web portal
- **SQL** - the Registry database

Modified

The date and time at which the request was made to the Registry.

Modified By

The originator of the request.

API Client Account Information

IRS API Client accounts consist of a number of properties including the following:

Info Section

Enabled

This option indicates whether or not the API Client account is activated and can be used. If this option is not selected, the account is considered to be disabled and cannot be used.

Account Type

The type of account being created. For API Client accounts, the account type is API.

You cannot modify the **Account Type** property.

User Type

The type of user to be assigned to this API Client account.

Username

The unique identifier of the API Client account that is used when logging in.

You cannot modify the **Username** property.

User names must be from two (2) to sixteen (16) characters in length and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z,or numerals 0 to 9), underscores, hyphens, or @ characters.

Notes

Additional text to record information about the API Client account that is not provided in other property fields.

Security Section

Roles

The roles associated with the API Client account.

Registrar account API realm roles include:

- **RAR Domain Info**

Two-Factor Authentication

Two-factor authentication cannot be set for API Client accounts.

EPP Interface

EPP (Extensible Provisioning Protocol) is an industry standard computer communications protocol used by Internet domain name registry systems. EPP provides a robust, flexible protocol to allocate objects within registries over the Internet. The EPP client - server protocol defines object management operations and maps protocol operations to specific domain names, contacts, and hosts.

IRS's EPP integration conforms to the following specifications:

- **RFC 5730**,
- **RFC 5731**,
- **RFC 5732**, and,
- **RFC 5733**.

Security services beyond those defined in EPP are provided by the Transport Layer Security (TLS) Protocol [**RFC 5246**].

Registrars will be able to create their own EPP accounts and passwords using their IRS portal account.

For more specific information about EPP, see:

- "Accessing the Registry EPP Service" on the facing page
- "EPP Client and Server Configuration" on page 90
- "Establishing an EPP Connection" on page 90

- "Request/Response Overview" on page 92
- "EPP Extensions" on page 155
- "EPP Code Examples" on page 158

Accessing the Registry EPP Service

IRS's Registry EPP service is a protected service, accessed by accounts configured with `EPP` as their **Account Type**. EPP communication between the Registrar and the Registry allows the Registrar to manage domains and their associated objects without using the web portal.

To use EPP, you must use either the initial EPP account provided to you by the Product Support team or an EPP account that you have created through the web portal.

Accessing IRS's web portal requires accounts configured with `Portal` as their **Account Type**.

Registrars must ensure that EPP requests meet EPP standards as defined by the following:

- **RFC 5730**,
- **RFC 5731**,
- **RFC 5732**, and,
- **RFC 5733**.

IRS parses all incoming requests using a validating XML parser that reads the XML and validates XML syntax before processing the request.

Operational Testing and Evaluation (OT&E) Environment

IRS provides a safe test environment that allows Registrars to test their systems without affecting the production database.

The OT&E environment mimics production and as such, it is strongly recommended that Registrars keep their test information unique and generic.

Registrars can work in the OT&E environment in both EPP and through the IRS web portal.

EPP Extensions

IRS supports the use of additional extensions with EPP.

The IRS EPP server component announces the extensions that are supported in the `<greeting>` element that is sent to clients before interactive sessions are established. EPP clients establish an interactive session with the IRS EPP server using the `<login>` command before attempting to use other commands or extensions. If you do not specify an extension that you wish to use in your `<login>`, it will not be supported for the duration of your session. The exception to this rule is the Registry Grace Period (RGP) extension that is always supported even if not identified in the `<login>`.

EPP IP Addresses on the Allowlist

IRS's EPP server will only accept Registrar EPP connections from Registrar-specific IP addresses.

A Registrar can have up to ten IP addresses on the allowlist in order to access the EPP system. For more information about updating these IP addresses, see "IP Allowlist Settings" on page 77.

Accessing the Droplist EPP Service

The Droplist function allows a Registry to manage the release of domain names that are about to become available again following the expiry of their current registration. Domain names added to the Droplist will become available to Registrars in a controlled fashion using Droplist sessions, periods during which domain names on the Droplist can be re-registered. For more information about Droplists, see "Droplist" on page 16.

To gain access to the domain names that are included in a Droplist session, you can connect to a dedicated EPP Droplist server using the same credentials (user name and password) that you use for conventional EPP connections. IRS's Droplist server will only accept Registrar EPP connections from Registrar-specific IP addresses identified specifically for the Droplist. For more information about maintaining Droplist IP allowlists, see "IP Allowlist Settings" on page 77.

EPP Client and Server Configuration

EPP client software must connect to IRS's EPP servers using Secure Socket Layer (SSL). IRS uses SSL to provide mutual authentication between IRS EPP servers and Registrar EPP clients using public keys, and to provide encrypted connections for all data exchange.

Ensure that your EPP client is SSL enabled.

Information Required by IRS for EPP Server Configuration

To configure IRS EPP servers to interact with the EPP client, we require:

- IP address of your EPP client, and,
- the subnet of your EPP clients.

This is required by IRS to enable EPP client access through the EPP server firewall.

Registrars should send their EPP client IP addresses and subnet addresses to their registry support contact.

Establishing an EPP Connection

Registrars establish a TCP connection using an EPP client that connects to IRS's EPP server. After the TCP connection is established, the EPP client must establish a Secure Socket Layer (SSL) handshake. When the SSL handshake is complete, a greeting response is immediately sent by the Registry to the connected Registrar.

The greeting response contains information that the Registrar may require to communicate with the Registry server.

IRS Greeting

The IRS EPP `<greeting>` is sent by the IRS EPP server in response to the Registrar's `<hello>`.

The greeting is used by IRS to:

- let the Registrar know what the EPP server provides to the Registrar,
- the current date and time in UTC,
- the protocol version supported by the server,
- the language for the text response,
- a declaration of the extensions that are supported, and,
- one or more elements that identify what the IRS EPP server manages.

The Registrar can then establish a session with the EPP server after a greeting has been issued by the server.

For more information on the protocol between the IRSRegistry and the Registrar refer to **RFC 5730**. It is expected that the IRS EPP `<greeting>` and `<response>` will conform to IRS's policies as well as to **RFC 5730**. In accordance with **RFC 5730**, the IRS EPP server's `<greeting>` response contains the following elements:

- `<svID>` - the name of the server,
- `<svDate>` - the server's current date and time in Universal Coordinated Time (UTC), and,
- `<svcMenu>` - identifies the services supported by the server including: `<version>`, `<lang>`, `<objURI>`, `<dcp>`, `<statement>`, `<recipient>`, and, `<retention>` elements.

Note: Data collection policy `<dcp>` elements are based on work described in the **World Wide Web Consortium's Platform for Privacy Preferences (W3C.REC-P3P-20020416)** specification.

EPP defines the Hello / Greeting protocol that allows a Registrar to query the Registry for information such as EPP protocol version, supported languages, and data collection policies.

Hello request

A Registrar may send an EPP `<hello>` request to the Registry at any time between a successful Login and Logout.

Example <hello> request:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
<hello/>
</epp>
```

Greeting response

The server returns a `<greeting>` response after receiving the `<hello>` request and establishing a successful connection. It specifies the services that the IRS EPP server provides, sent in response to a `<hello>` element and also on connection to the server.

EPP Encoding and XML

Registrars must ensure that EPP requests meet EPP standards.

XML

EPP uses Extensible Mark-up Language (XML), to map to objects using XML namespaces, and in addition to this, the IRS EPP interface also uses IRS defined extensions. (Namespaces in XML make it possible to give elements and attributes unique names.)

A valid XSD is required for all registrations. Valid tag values are defined by the XSD and the XSD files are used to validate XML.

It is the responsibility of all Registrars to ensure that their EPP requests validate against the EPP schemas.

Special Characters

Some special characters have special meaning as mark-up delimiters in XML. An XML entity reference is a group of characters used as a substitute for a single specific character. Entity references always begin with an ampersand (&) and end with a semicolon (;). For example, to represent a left angle bracket (<) within XML data, substitute the entity reference "<". Registrars can also substitute a numeric or hexadecimal reference.

&

Description = ampersand

Entity Reference = &

Numeric Reference = &

Hexadecimal Reference = &

<

Description = less than

Entity Reference = <

Numeric Reference = <

Hexadecimal Reference = <

>

Description = greater than

Entity Reference = >

Numeric Reference = >

Hexadecimal Reference = >

"

Description = double quote

Entity Reference = "

Numeric Reference = "

Hexadecimal Reference = "

'

Description = single quote

Entity Reference = '

Numeric Reference = '

Hexadecimal Reference = '

Registrars must conform to the IDNA2008 standard. IDNA2008 consists of a collection of RFCs that extend the valid characters in domain names, and establishes an automatic process for updating to future versions of the Unicode Standard. It also defines the concept of a valid domain name clearly, so that Registrants understand exactly what domain name string is being registered.

EPP Date and Time Representation

The representation of date and time values in IRS is in accordance with **ISO 8601**.

Request/Response Overview

All EPP XML requests and responses comprise an `<epp>` element with EPP-specific sub-elements.

Registrars must ensure EPP requests meet EPP standards as defined by RFCs 5730, 5731, 5732, and 5733. IRS parses all incoming commands using a validating XML parser.

IRS's EPP server uses standard tools to create outgoing response XML.

The response to a request usually contains this information:

Result codes include one or more response code numbers such as `<result code=XXXX>`, each having a corresponding human-readable message `<msg>`. For example, a successful execution of a request can return the result code "1000" with the associated message "Command completed successfully".

An EPP error usually indicates that some required data is missing. When an operation fails, an error response is provided. Where possible, IRS includes an `<extValue>` error code and a more comprehensible error message.

Every IRS EPP response includes a result code and a human-readable description of the result code.

Data - displays information that is returned within a `<resData>` element as a response to the request. Not all responses return a `<resData>` element. For example, some `<delete>` responses do not return a `<resData>` element.

Transaction IDs - displays the Registrar Transaction ID `<clTRID>` and the Registry Transaction ID `<svTRID>` contained in the `<trID>` element.

Registrars can also find common EPP response codes on the Internet by accessing the Results Codes section of the Extensible Provisioning Protocol document number RFC 5730.

Warning: The current status of the associated Registrar (`Active`, `Applied`, `Restricted`, or `Inactive`) may apply limitations or restrictions on IRS functionality.

Login

The Login request establishes an interactive session with the IRS EPP server which is used to perform additional commands for managing your domains and to declare the extensions that will be used. If you do not specify an extension that you wish to use in your `<login>`, it will not be supported for the duration of your session. The exception to this rule is the Registry Grace Period (RGP) extension that is always supported even if not identified in the `<login>`.

Note: IRS messages will only be available if the fury custom extension is specified in the `<login>`.

Registrar passwords must contain uppercase, lowercase, numeric and non-alphanumeric characters. Ensure that the credentials you are providing match the credentials provided to you by IRS.

Note: Passwords for EPP accounts have a maximum length of sixteen (16) characters and cannot use the ampersand (&) character.

The IRS web portal requires a separate login.

The EPP `<login>` request establishes an ongoing session that preserves client identity and authorization information during the entire session. When Registrars login they must ensure that the user account and password have the proper case or the login will fail.

The number of failed login attempts is limited to five unsuccessful attempts (within a 12-hour period), after which the connection to the server is closed. The system then automatically locks you out of that account and you will not be allowed to login for 15 minutes.

A lack of activity during the session results in the Registry ending the session and closing the connection. The time-length of inactivity is: 5 minutes (300 seconds) – EPP session.

Request

The following are the XML fields that may be used to initiate a Login request.

Client ID

EPP Element = `<clID>`

Usage = Mandatory

Description = The Registrar's client identification used to access IRS's XML interface

Valid Values = The client ID must exist on the Registry server, prior to login. Length from three (3) to sixteen (16) characters.

Password

EPP Element = `<pw>`

Usage = Mandatory

Description = The Registrar's password used to access IRS's XML interface.

Valid Values = Passwords must adhere to the following:

- Minimum length of eight (8) characters.
- Maximum length of sixteen (16) characters.
- Includes at least two (2) numeric digits.
- Includes at least two (2) lowercase alphabetical characters.
- Includes at least two (2) uppercase alphabetical characters.
- Includes at least two (2) special characters.
- Cannot use the ampersand (&) character.
- Passwords are case sensitive and cannot contain non-printable or extended characters that are not available on the keyboard.
- The password must exist on the Registry server, prior to login

New Password

EPP Element = `<newPW>`

Usage = Optional

Description = The Registrar's new password used to access all subsequent EPP login commands.

Valid Values = Passwords must adhere to the following:

- Minimum length of eight (8) characters.
- Maximum length of sixteen (16) characters.
- Includes at least two (2) numeric digits.
- Includes at least two (2) lowercase alphabetical characters.
- Includes at least two (2) uppercase alphabetical characters.
- Includes at least two (2) special characters.
- Cannot use the ampersand (&) character.
- Passwords are case sensitive and cannot contain non-printable or extended characters that are not available on the keyboard.
- The password must exist on the Registry server, prior to login

Options

EPP Element = `<options>`

Usage = Mandatory

Description = tagged option information child elements

Version

EPP Element = `<version>`

Usage = Optional

Description = the protocol version to be used for the command

Preferred Language

EPP Element = `<lang>`

Usage = Optional

Description = The Registrar's language of preference

Valid Values = Length of two (2) characters.

Namespace

EPP Element = `<svcs>`

Usage = Mandatory

Description = Element that contains one or more <objURI> elements

Valid Values = Namespace URIs representing the objects to be managed during the session.

Extension

EPP Element = `<svcExtension>`

Usage = Optional

Description = Child element that contains one or more <extURI> elements that

Valid Values = Identifies object extensions to be used during the session

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the login request

Valid Values = Length from 3-64 characters.

Note: Login requests require `<options>` and `<svcs>` tags.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the XML fields that may occur in the response to a Login request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

IRS Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific <extValue> error code. Each IRS error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

EPP Interface

It is important to also update the password in your EPP client software.

Logout

The EPP `<logout>` request terminates a current session.

When a session does not terminate with a logout request, the connection remains open for 5 minutes (300 seconds) after which the Registry server terminates the session and closes the connection.

Request

The following are the XML fields that may be used to initiate a Logout request.

Logout

EPP Element = `<logout/>`

Usage = Mandatory

Description = Initiates the logout request

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when initiating the logout request. Length: 3-64 characters

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the XML fields that may occur in the response to a Logout request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1500 is "Command completed successfully; ending session".

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

EPP Interface

When a `<logout>` command has processed successfully, the server responds with the English human-readable description of response code of "Command completed successfully; ending session" response.

There is no `<resData>` element.

Service Messages

The IRS EPP server uses service messages for communication. Messages arrive when specific changes occur and are generated whenever a certain change takes place. Service messages are placed in the queue until a poll command retrieves them. As a Registrar, you must retrieve your queued messages from the service messages. The Registry sends service messages to Registrars about operations performed by the Registry. The service messages can contain account balance notifications. Each service message is transferred to the appropriate Registrar by a message protocol:

The Registrar sends a Poll request to determine whether there are any pending service messages. The Registry response contains either the first service message in the queue for the Registrar or an indication that there are no queued service messages for the Registrar.

If the queue contained a service message, the Registrar sends a Poll Acknowledge request to delete the service message from the Registry's message queue. The Registry response indicates the number of remaining service messages in the queue.

Poll Message Request

Registrars use the `<poll>` command to receive messages, as well as keep the connection "alive". A successful Poll request determines whether any pending service messages are queued for that Registrar. Messages are retrieved on a "first in – first out" basis. The response contains the count of service messages in the Registrar's message queue and the first service message if the queue is not empty.

Polling can also help keep the session alive during periods of no activity. When there is no activity on the connection for 5 minutes, IRS terminates the connection.

Message queues can consume Registry resources when service messages are not retrieved regularly. IRS will remove any messages that have been left in the poll queue longer than 30 days.

Request

Service messages are retrieved with the EPP `<poll>` command.

The following are the XML fields that may be used to initiate a Poll request.

Poll message request

EPP Element = `<poll op="req"/>`

Usage = Mandatory

Description = The XML statement that defines the action as a poll request.

Valid Values = "req" or "ack"

Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when initiating the poll request.
Length: 3-64 characters

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The Registry will reply to every action with a response. The Poll request response may be with a success message and a request for an acknowledgement. The corresponding EPP element is displayed below the field name.

The following are the XML fields that may occur in the response to a Poll request.

Response Code

EPP Element = `<result code="1301">`

```
<msg>Command completed successfully; ack to dequeue</msg>
```

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example, the English human-readable description of response code 1000 is "Command completed successfully".

Message Details

EPP Element = `<msgQ count="4" id="12346">`

`<qDate>2019-05-02T17:36:29.046Z</qDate>`

`<msg lang="en">Contact testcontact has been deleted.</msg>`

Description = A count of the number of messages in the queue and the Registry message ID to uniquely identify the message that is at the head of the queue. It also includes the date and time that the message was queued and the associated human-readable message in the Registrar's preferred language. This element only displays if there are messages in the queue.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID.

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response/Error codes

Response codes are returned with the response to a Poll request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Poll Message Acknowledgement

For each Registry Poll response message that contains a message, the Registrar must send a Poll Acknowledgement request that confirms that the message was received and causes the Registry to remove the message from the queue. Removing the message from the queue makes subsequent messages available for retrieval.

Request

The following are the XML fields that may be used to initiate a Poll Acknowledgement request.

Poll Acknowledgement Request Fields

Message ID

EPP Element = `<poll op="ack" msgID="200"/>`

Description = The mandatory ID of the message being acknowledged.

Transaction ID

EPP Element = `<clTRID>`

Description = If the request contains an optional Registrar Transaction ID, this value will be included in the response.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The Poll Acknowledgement response contains the ID of the message that has been acknowledged and the number of messages remaining in the queue. The corresponding EPP element is displayed below the field name.

The following are the XML fields that may occur in the response to a Poll Acknowledgement request.

Response Code

EPP Element = `<result>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes.

Message Count

EPP Element = `<msgQ count="4" id="12346">`

Description = The new message count (after the message being acknowledged is removed) and the Registry message id.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response/Error codes

Response codes are returned with the response to a Poll Acknowledgement request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Domains

Domain name objects can be created and managed within the Registry using EPP with IRS supporting the following query requests related to domain names:

- "Domain Check" on page 106 - determines whether a domain name is available for registration.
- "Domain Info" on page 102 - retrieves the properties of an existing domain name object.
- "Domain Create" on page 108 - creates a domain name object in the Registry.
- "Domain Delete" on page 113 - deletes a domain name object from the Registry.
- "Domain Renew" on page 115 - extends the registration period of a domain name object.
- "Domain Transfer" on page 120 - transfers the sponsorship of a domain name object.
- "Domain Update" on page 125 - modifies the attributes of a domain name object.

Valid Domain Name Formats

A valid domain name must have the following:

- A label's length must be between 1 to 63 characters.
- Characters must be alphanumeric but hyphens (-) are permitted within a label, for example, `domain-name.-fury`.

Note: Hyphens are acceptable characters with the exception that you cannot use a hyphen as the first character, the third and fourth characters (combined together), or the last character of a label. For example, `ns1.te--st.fury` is invalid with two hyphens as the third and fourth characters.

Domain Name Object Properties and Status Values

Domain name objects in the Registry consist of a number of different properties and associated status values.

Domain Name

The identifying name of the domain.

U-Label

The unicode label version of the domain name.

The **Domain Name** field contains the A-label and corresponds to the U-label in the name field.

Note: The U-label must not contain more than 63 characters.

Registry Object ID

The unique identifier assigned by IRS to the domain name object when it is created in the Registry.

Status

One or more values as described in "Status Values" on the facing page.

Registrant

The identifier of the contact object that represents the person or organization that currently holds the domain name registration. A domain name has exactly one Registrant.

Administrative Contact

The identifier of the contact object that represents the person authorized by the Registrant to request confirm changes to the domain name. There must be only one Administrative Contact.

Technical Contact

The identifiers of the contact objects that represent people authorized by the Registrant to administer technical information for a domain name. There must be one Technical Contact.

Billing Contact

The identifiers of the contact objects that represent people authorized by the Registrant to manage financial information for a domain name. There may be from zero (0) to many Billing Contacts.

Hosts

The names of host objects that represent delegated hosts. The number of hosts is either 0 or 2 through 13.

Sponsor ID

The identifier of the Registrar object representing the sponsoring Registrar.

Creator ID

The identifier of the Registrar object representing the Registrar that created the domain name object.

Creation Date

The date and time at which the domain name was created in the Registry.

Expiry Date

The expiry time and date of the domain name.

Updater ID

The identifier of the Registrar object representing the Registrar that last updated the domain name information. This element is empty if the domain name has never been updated.

Update Date

The date and time of the most recent domain name object modification. This value is empty if the domain name has never been updated.

Transfer Date

The date and time of the most recent successful domain name transfer. This element is empty if the domain name has never been transferred.

AuthInfo

An authorization password associated with the domain name. This information is returned in a response only when:

- The querying Registrar is the current sponsoring Registrar
- The Registrar has supplied valid authorization information with the request.
- The Hashed Authorization Code toggle has not been enabled by the Registry.

Privacy

The domain privacy setting for WHOIS information configured as either `Private` or `Public`.

Reseller Name

The name of the reseller associated with this domain. This value can be up to 256 characters.

Note that this name will be cleared on transfer of a domain between Sponsoring Registrars.

If the Reseller Name is entered, it will not appear in the WHOIS or RDAP response for that domain.

Status Values

A domain name object always has at least one associated status value. Each status value is accompanied by text that describes the rationale for the status applied to the object.

The sponsoring Registrar can explicitly add or remove status values prefixed with "client" using a Domain Update request, but must not alter other status values. The Registry may change any status value.

`clientDeleteProhibited` *or* `serverDeleteProhibited`

The Registry will reject requests to delete the object.

`clientHold` *or* `serverHold`

The Registry will not publish DNS delegation information for the object.

`clientRenewProhibited` *or* `serverRenewProhibited`

The Registry will reject requests to renew the object.

`clientTransferProhibited` *or* `serverTransferProhibited`

The Registry will reject requests to transfer the object.

`clientUpdateProhibited` *or* `serverUpdateProhibited`

The Registry will reject requests to update the object.

`pendingCreate`, `pendingDelete`, `pendingRenew` *or* `pendingUpdate`

A transform request has been processed for the object, but the action has not been completed by the Registry. Registry personnel can delay action completion for a variety of reasons, such as to allow for human review or third-party action. A transform request that is processed, but whose requested action is pending, is noted with response code 1001.

`pendingTransfer`

Once a request for a transfer is made, the domain waits in a `pendingTransfer` state if the Registry is not configured for Instant Transfer.

The transfer request must be cancelled, approved or rejected in order to have the pendingTransfer flag removed.

By default, transfers that are not completed within the transfer period as defined by the Registry will be auto-approved and the pendingTransfer status will be removed from the domain name. This may change based on the configuration settings for each Registry.

inactive

This status is assigned to a Domain that is not associated with any Hosts, which means that the domain name is not activated in DNS and will not resolve.

ok

The status value for a Domain that has no pending operations or prohibitions, this value is automatically configured and removed by IRS as other status values are added or removed.

Domain Info

A successful Domain Info request retrieves information associated with an existing domain name.

All available information is returned if the querying Registrar is the domain's sponsor. For a non-sponsoring Registrar, all domain information is returned if the correct authorization code is entered. As well, if the Authorization Code Expiry has been configured, the authorization code must not be expired. Otherwise, only the following information is returned:

- domain name
- the identifier assigned by the Registry when the object was created
- status
- creation date and time of the object in the Registry
- subordinate host of the domain name
- identifier of the sponsoring Registrar
- date that the domain object was last updated
- date and time that the domain name will exit the present life cycle state
- DS and DNSKEY data information in response to queries against DNSSEC signed domains
- DNSSEC data related to the domain being queried is included in the response as per section 5.1.2 of RFC 5910.

Note: Optional `<secDNS:maxSigLife>` element is NOT supported.

Request

The following are the XML fields that may be used in a Domain Info request.

Domain Name

EPP Element = `<domain:name>`

Usage = Mandatory

Description = The name of the domain.

Valid Values = May contain the following optional attribute:

- "hosts"
- "del"
- "all"
- "sub"
- "none"

Authorization

EPP Element = `<domain:pw>`

Usage = Optional

Description = The authorization information associated with the domain name.

Valid Values = Authorization codes must be between the minimum and maximum number of characters defined by the Registry and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z, or numerals 0 to 9) or the hyphen (-) character.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The response to a successfully completed Domain Info request identifies the domain namespace. The optional elements that are returned are based on client authorization and Registry policies.

The following are the XML fields that may occur in a response to a Domain Info request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific <extValue> error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Domain Name

EPP Element = `<domain:name>`

Description = The name of the domain.

Registry ID

EPP Element = `<domain:roid>`

Description = The identifier assigned by the Registry when the object was created.

Status

EPP Element = `<domain:status>`

Description = One or more flags describing the status of the domain object. Contains value for server-UpdatedProhibited.

Registrant

EPP Element = `<domain:registrant>`

Description = The contact identifier that identifies the owner of the domain name. A domain name has one and only one Registrant.

Contact Name

EPP Element = `<domain:contact>`

Description = The identifiers of the contacts associated with the domain name. There are three domain name contact types:

- admin - administrative, there will be one administrative contact
- tech - technical, there will be one technical contact
- billing - billing, there may be from zero (0) to many billing contacts

Subordinate Host

EPP Element = `<domain:hostObj>`

Description = The names of a subordinate host of the domain name.

Delegated Host

EPP Element = `<domain:host>`

Description = The name of a delegated host.

Domain Sponsor ID

EPP Element = `<domain:clID>`

Description = The identifier of the sponsoring Registrar.

Creator ID

EPP Element = `<domain:crID>`

Description = The identifier of the Registrar that created the object in the Registry.

Creation Date

EPP Element = `<domain:crDate>`

Description = The creation date and time of the object in the Registry.

Update ID

EPP Element = `<domain:upID>`

Description = The identifier of the Registrar that last updated the object. This field is not present if the object has never been updated.

Update Date

EPP Element = `<domain:upDate>`

Description = The date and time of the most recent domain object modification. This field is not present if the domain name has never been updated.

Expiration Date

EPP Element = `<domain:exDate>`

Description = The expiry date and time of the domain name registration period.

Transfer Date

EPP Element = `<domain:trDate>`

Description = The date and time of the most recent successful domain name transfer. This element is not present if the domain name has never been transferred.

Authorization

EPP Element = `<domain:pw>`

Description = The authorization information associated with the domain name. This information is returned only when:

- The querying Registrar is the current sponsoring Registrar.
- The Registrar has supplied valid authorization information with the request.
- The Hashed Authorization Code toggle has not been enabled by the Registry.

RGP Stage of Life

EPP Element = `<rgp:rgpStatus>`

Description = A single attribute "s" whose value describes the current grace period status of the domain.

RGP Stage of Life End Date

EPP Element = `<fury-rgp:rgpStatusEnd>`

Description = The date and time the RGP Stage of Life ends.

Note: The RGP Stage of Life values will only appear when a domain is in one of the following grace periods: `addPeriod`, `autoRenewPeriod`, `renewPeriod`, `transferPeriod`, `redemptionPeriod`, `pendingRestore`, and `pendingDelete`. The RGP Stage of Life End Date will only appear if you are using the `fury-rgp-1.0.xsd` extension.

DS Record

EPP Element = `<secDNS:dsData>`

Description = The DS Record of the domain name. The DS record may include the Keytag, Algorithm, Digest Type and Digest. DS Records with DNSKEY may include the Keytag, Algorithm, Digest Type, Digest, Flag and DNSKEY.

Privacy

EPP Element = `<fury:key>PRIVACY</fury:key>`

Description = The domain privacy setting for WHOIS information configured as either `Private` or `Public`.

Reseller Name

EPP Element = `<fury:key>RESELLER_NAME</fury:key>`

Description = The name of the reseller associated with this domain.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request, if the request specified a Registrar Transaction ID.

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response and Error Codes

Response codes are returned with the response to a Domain Info request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Domain Check

A successful Domain Check request determines whether a domain name is available for use and whether a domain name registration can be successfully created in the Registry.

Note: If the Registry supports additional levels of domain names, you cannot create a new third-level (or lower level) domain name if the superordinate domain name has already been registered. For example, you could not create `example.space.fury` if the `space.fury` domain name was already registered. If the `space.fury` domain name was not registered, you would be allowed to register `example.space.fury`.

Request

The following are the XML fields that may be used in a Domain Check request.

Domain Name

EPP Element = `<domain:name >`

Usage = Mandatory. There may be 1 to 15 in the table.

Description = The domain name.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The reason does not return a value, only descriptive text.

For example:

```
<domain:cd>
  <domain:name avail="false">éxâmplé.fury</domain:name>
  <domain:reason>Character from an invalid script</domain:reason>
</domain:cd>
```

The following are the XML fields that may occur in the response to a Domain Check request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxx x"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific `<extValue>` error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Domain Name

EPP Element = `<domain:name>`

Description = The domain name supplied in the request and its availability. Contains one of the following values:

- A value of "true" means yes it can be provisioned.
- A value of "false" means no, the name registration cannot be provisioned at this time or the name is associated to a block tag meaning it cannot be registered or cannot be registered without registry approval.

Reason

EPP Element = `<domain:reason>`

Description = For each domain name, a reason is provided when a domain name cannot be registered. The reason does not return a value, only descriptive text. The following reasons are returned for Domain Check:

- Registered
- Character from an invalid script
- Invalid domain name format - see documentation
- If the domain is associated to a block tag, the reason will be the Domain Unavailable Reason for that tag as specified by the registry

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = If the request contains an optional Registrar Transaction ID, this value will be included in the response.

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response and Error Codes

Response codes are returned with the response to a Domain Check request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Domain Check requests can be used to verify the availability of domain names during Droplist sessions when performed on the EPP Droplist server. The following responses are specific to Droplist functionality:

- Result Code `8447` = Domain is not in the current Droplist session.
- Result Code `8448` = Domain is not in the Droplist system.

For more information, refer to "Accessing the Droplist EPP Service" on page 89.

Registry Fee Extension

IRS supports the Registry Fee Extension for the Extensible Provisioning Protocol (for more information, refer to **https://tools.ietf.org/html/draft-ietf-regext-epp-fees-00**) .

Note: The default value for the fee extension's period has now been revised so that it follows the Registry's configuration and is no longer permanently fixed at one (1) year.

Domain Create

A successful Domain Create request creates a domain object in the Registry, and also creates relationships between the domain name and previously created contacts and hosts.

Restrictions

1. A new domain name cannot be created if it already exists in the Registry.
2. There are restrictions to creating a domain name if the name has been associated with a **Block** tag. If the domain has a block **With override** tag, it can only be created once the request has been approved by the Registry. If the domain has a block **Without override** tag it cannot be created at all.
3. If the Registry supports additional levels of domain names, you cannot create a new third-level (or lower level) domain name if the superordinate domain name has already been registered. For example, you could not create `example.space.fury` if the `space.fury` domain name was already registered. If the `space.fury` domain name was not registered, you would be allowed to register `example.space.fury`.

A domain name can be registered during a Droplist session if it is included in the Droplist. For more information, refer to "Accessing the Droplist EPP Service" on page 89.

Relationships Between Domains, Contacts, and Hosts

There are four types of relationships between a domain name and related contacts:

- A single "Registrant" contact-domain relationship denotes the individual or non-individual that holds the domain name registration.
- A single Administrative contact-domain relationship indicates the individual or non-individual that is authorized by the Registrant to administer administrative information for a registered domain.
- A single Technical contact-domain relationship indicates the individual or non-individual that is authorized by the Registrant to administer technical information for a registered domain.
- From zero (0) to many "Billing Contact" contact-domain relationships denote individuals who typically administer financial information for a registered domain name.

A domain object may also have relationships with host objects in the Registry. Because the Registry does not permit a Registrar to create a host object for a host inside the domain name being registered before the domain object exists, the following procedure should be followed to register a domain name:

1. Perform a Domain Check request and stop if the domain name already exists in the Registry.
2. For any associated contacts that do not already exist in the Registry, create associated contacts, ensuring that the contact that will be used as the Registrant has all of the required information configured.
3. For each related host that is outside the domain name being created, create a host object if it does not already exist in the Registry.
4. Create the domain name in the Registry, including relationships to contacts and to hosts that are outside the domain name being created.
5. If there are related hosts that are inside the domain name being created:
    - Create associated hosts.
    - Update the domain object to add relationships to these hosts.

Note: To create a domain name, a Registrar is not required to be the sponsor of hosts that are assigned to the domain object. The Registrar must be the sponsor of all contacts that are assigned to a domain object.

The EPP `<create>` command allows a Registrar to create a domain name.

Extension Notes

In addition to the EPP command elements, the command must contain `<extension>` elements to support the following:

1. `idn` extensions when registering an Internationalized Domain Name (IDN),
2. `fee` extensions when registering a premium domain name (which cannot be created without a fee extension), and,
3. DNSSEC data related to a domain name is accepted through the DNSSEC EPP extension as per section 5.2.1. of RFC 5910.

Request

The following are the XML fields that may be used in a Domain Create request.

Domain Name

EPP Element = `<domain:name>`

Usage = Mandatory

Description = The domain name. The name field can contain the A-label that corresponds to the U-label. U-label domain names cannot contain more than 63 characters.

Valid Values = The maximum number of labels separated by period characters is two (2). The maximum number of characters per label is 63. Characters must be alphanumeric or hyphens with the exception that you cannot use a hyphen as the first character, the third and fourth characters (combined together), or the last character of a label. For example, `ns1.te--st.fury` is invalid with two hyphens as the third and fourth characters.

Period

EPP Element = `<domain:period>`

Usage = Optional

Description = The initial domain validity period

Valid Values = Period length is 1-10 years with the default value configured as one (1) year.

Host

EPP Element = `<domain:hostObj>`

Usage = Optional

Description = Names of the delegated host objects or host attributes (name servers) associated with the domain name to provide resolution services for the domain name.

Valid Values = Number of delegated host objects is either 0 or 2-13. Each host object must be created in the Registry before the host can be associated with a domain name.

Registrant

EPP Element = `<domain:registrant>`

Usage = Mandatory

Description = The identifier of the existing contact to be associated with the domain name as the Registrant.

Valid Values = Number of Registrants per domain name is one (1).

Administrative Contact

EPP Element = `<domain:contact type="admin">`

Usage = Mandatory

Description = The identifier of the existing individual contact to be associated with the domain name as the administrative contact.

Valid Values = Number of administrative contacts per domain name is one (1).

Technical Contact

EPP Element = `<domain:contact type="tech">`

Usage = Mandatory

Description = Existing individual contacts to be associated with the domain object as technical contacts.

Valid Values = Number of technical contacts per domain name is one (1).

Billing Contact

EPP Element = `<domain:contact type="billing">`

Usage = Optional

Description = Existing individual contacts to be associated with the domain object as billing contacts.

Valid Values = Number of billing contacts per domain name is 0 - many

Authorization Information

EPP Element = `<domain:pw>`

Usage = Mandatory

Description = The authorization password to be associated with the domain object

Valid Values = Length must be between the minimum and maximum number of characters as defined by the Registry; character values are: a - z, A - Z, 0 - 9, or the hyphen (-)

U-Label

Usage = Optional

Description = The name field corresponds to the A-label in the domain name field. U-label domain names cannot contain more than 63 characters.

DS Record

EPP Element = `<secDNS:dsData>`

Usage = Optional

Description = The DS Record of the domain name.

Valid Values = DS record must include the Keytag, Algorithm, Digest Type and Digest. DS Records with DNSKEY must include the Keytag, Algorithm, Digest Type, Digest, Flag and DNSKEY

DNSKEY

Usage = Optional

Description = The public key used to generate DS records

Valid Values = DNSKEY records must include:

- Flags,
- Protocol,
- Algorithm, and
- publicKey

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request

Privacy

EPP Element = `<fury:key>PRIVACY</fury:key>`

Usage = Optional

Description = The domain privacy setting for WHOIS information configured as either `Private` or `Public`.

Reseller Name

EPP Element = `<fury:key>RESELLER_NAME</fury:key>`

Usage = Optional

Description = The name of the reseller associated with this domain.

Valid Values = The maximum number of characters is 256.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Registry Actions

A successful Domain Create request initiates the following Registry actions.

***Current Life Cycle State* = Pending Create**

Registry Actions = Sets `serverTransferProhibited` status flags for a time period based on the system configuration. Reduces the Registrar financial balance.

***Current Life Cycle State* = Add Period**

Registry Actions = Sets `serverTransferProhibited` status flags for a time period based on the system configuration. Reduces the Registrar financial balance, if not previously reduced.

Response

The following are the XML fields that may occur in the response to a Domain Create request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

IRS Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific <extValue> error code. Each IRS error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example, the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Domain Name

EPP Element = `<domain:name>`

Description = The domain name supplied by the Registrar.

Creation Date

EPP Element = `<domain:crDate>`

Description = The date and time the domain name was created in the Registry.

Expiry Date

EPP Element = `<domain:exDate>`

Description = The date and time the domain name is set to expire in the Registry.

DS Record

EPP Element = `<secDNS:dsData>`

Description = Delegation of Signing (DS) records contain the digital signature information for the domain name's DNS.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response Codes

Response codes are returned with the response to a Domain Create request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Registry Fee Extension

IRS supports the Registry Fee Extension for the Extensible Provisioning Protocol (for more information, refer to **https://tools.ietf.org/html/draft-ietf-regext-epp-fees-00**) .

Note: The default value for the fee extension's period has now been revised so that it follows the Registry's configuration and is no longer permanently fixed at one (1) year.

Domain Delete

A successful Domain Delete request transitions a domain object into pending delete state within the Registry. (A domain name that has been deleted transitions from registered, to redemption, and then to pending delete.)

A Registrar can:

- Delete a registered domain name. The request to delete a registered domain name must come from the sponsoring Registrar. A registered domain name that is deleted is moved to Redemption Grace.
- Restore from Redemption Grace a deleted domain name within a number of days specified by the Registry. A registered domain name can be redeemed and deleted multiple times in 1 year. When a deleted domain name does not get redeemed within this period it is moved to "pendingDelete" status.

Note: Domains that are associated with zone tags cannot be deleted.

Registrars cannot delete registered domain names that are Locked.

When an expired domain name registration is explicitly deleted during the auto renew grace period, the domain name registration moves into the redemption grace period and an email deletion notice is sent to the Registrant.

Only the sponsoring Registrar can delete a domain name. When a domain name is deleted in the Registered period, it moves to the "Redemption Grace Period" stage of life.

When a domain name is deleted in the Add Period stage of life, it goes to PendingDelete and then becomes generally available. If a domain name is deleted during the Auto Renew Grace Period, and is not subsequently renewed or transferred during the Redemption Grace Period, it transitions to pendingDelete and then becomes generally available.

Note: A Registrar is permitted to apply the status "clientHold" to a domain name during the Auto Renew Grace Period, in lieu of deleting it, in order to attract the attention of the Registrant who has failed to pay for their renewal upon auto-renewal of the domain name upon its expiry.

A Registrar cannot delete a domain name when either of the following status flags is set:

- clientDeleteProhibited
- serverDeleteProhibited (applicable to Locked domain names)

A Registrar cannot delete a domain name when:

- it is in the pendingDelete or Redemption Grace stage of life

Note: When a domain name is associated with an existing subordinate host object (for example, `domain.fury` is associated with `hostname.domain.fury`) deleting the domain name will remove the association and eventually delete the subordinate hosts when the domain is fully deleted. Any other domains associated to those hosts will lose their delegation. If the superordinate domain is restored from redemption period, the delegation will be recovered.

Verifying object relationships can be performed by using the Domain Info request.

Request

The following are the XML fields that may be used in a Domain Delete request.

Name

EPP Element = `<domain:name>`

Usage = Mandatory

Description = The domain name to be deleted.

Valid Values = The maximum number of labels, separated by period characters, is four (4). The maximum number of characters per label is 63. Characters must be alphanumeric or "-" but "-" cannot appear at the start or end of a label.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Registry Actions

A successful request initiates the following Registry actions.

pending create or add period

The Registry sets the life cycle state to Pending Delete if the domain name is deleted during this life cycle state. The Registry then sets status flags to serverTransferProhibited, serverUpdateProhibited, serverHold, and serverRenewProhibited. All charges are refunded if the domain name is deleted during this life cycle state.

Registered domain name delete

The Registry sets the domain name to Redemption Grace for a number of days specified by the Registry with no refunds.

auto-renew

The Registry sets the life cycle state to Redemption if the domain name is deleted during this stage. The Registry then sets the status flags to serverTransferProhibited (only if the Transfer in Redemption setting is disabled), serverUpdateProhibited, and serverHold. The most recent charge is refunded if the domain name is deleted during this life cycle state.

Response

The following are the XML fields that may occur in the response to a Domain Delete request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific <extValue> error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages

help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response Codes

Response codes are returned in the response to a Domain Delete request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Registry Fee Extension

IRS supports the Registry Fee Extension for the Extensible Provisioning Protocol (for more information, refer to **https://tools.ietf.org/html/draft-ietf-regext-epp-fees-00**) .

Note: The default value for the fee extension's period has now been revised so that it follows the Registry's configuration and is no longer permanently fixed at one (1) year.

Block - Delete Tags

If a **Block - Delete** tag that is not configured with **Allow Override** is applied to a domain name, it cannot be deleted. The domain name can, however, be manually deleted by Registry and system-level users if the associated **Block - Delete** tag has been configured with the **Allow Override** setting. For more information, see "Delete Domains" on page 44.

Domain Renew

A successful Domain Renew request extends the registration period of a domain name. It also maintains existing status values.

Note: If a **Block - Renew** tag is applied to a domain name, the domain name cannot be renewed unless the tag is configured with the **Allow Override** setting. For more information, refer to "Block - Renew Tags" on page 118.

Use the `Domain Info` request prior to renewing a domain name to get the correct expiry date in the correct time zone.

Request

The following are the Domain Renew request fields.

Name

EPP Element = `<domain:name>`

Usage = Mandatory

Description = The name of the domain object whose validity period is to be extended.

Valid Values = The maximum number of labels, separated by period characters, is four (4). The maximum number of characters per label is 63. Characters must be alphanumeric or hyphens with the exception that you cannot use a hyphen as the first character, the third and fourth characters (combined together), or the last character of a label. For example, `ns1.te--st.fury` is invalid with two hyphens as the third and fourth characters.

Expiry Date

EPP Element = `<domain:curExpDate>`

Usage = Mandatory

Description = The date on which the current validity period ends.

Valid Values = Numeric characters separated by a hyphen (for example, 2017-11-25). Valid format is yyyy-mm-dd with yyyy indicating the year the domain name will expire, mm indicating the month (1 - 12) that the domain name will expire, and dd indicating the day (1-31) that the domain name will expire.

Period

EPP Element = `<domain:period unit="y">`

Usage = Optional

Description = The number of years to be added to the registration period of the domain object.

Valid Values = Period length is from one (1) to ten (10) years with the default value configured to one (1) year. At any time, the period of the domain name cannot exceed ten (10) years.

Registry Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Registry Actions

A successful Domain Renew request initiates the Registry actions listed in Domain Renew Registry Actions.

The Registry automatically renews domain names for a period based based on the Registry's configuration for the default term length. The Registry action also includes the collection of renewal fees from the Registrar.

The "Registered" life cycle state ends at the expiry date of the domain name registration. The expiry date is derived by adding the length of term indicated in the Domain Renew request to the balance of the term remaining, if any. If no length of term is indicated in the request, the default value of one year is added to the domain name's length of term.

Pending Create

Domain name remains in the pending create life cycle state. Reduces the Registrar financial balance.

Add Period

Updates the life cycle state to Registered. Reduces the Registrar financial balance.

Registered

Domain name remains in the registered life cycle state. Reduces the Registrar financial balance.

Auto renew

Updates the life cycle state to registered and another term is added to the domain name's length of term. When the process is completed, the registration's length of term is increased by the term indicated in the domain renew command.

Note: A registration's total length of term cannot be extended beyond a maximum of 10 years.

Maintains existing prohibition status flags, except clientHold. Reduces the Registrar financial balance.

Redemption

Domain name is moved into the registered life cycle state. Removes the transfer and update prohibition status flags but maintains all other existing prohibition status flags. Reduces the Registrar financial balance.

Response

The following are the Domain Renew response fields.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

IRS Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific <extValue> error code. Each IRS error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Name

EPP Element = `<domain:name>`

Description = The fully qualified domain name supplied by the Registrar.

Expiry Date

EPP Element = `<domain:exDate>`

Description = The date and time the domain name is set to expire in the Registry.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response Codes

Response codes are returned with the response to a Domain Renew request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Registry Fee Extension

IRS supports the Registry Fee Extension for the Extensible Provisioning Protocol (for more information, refer to **https://tools.ietf.org/html/draft-ietf-regext-epp-fees-00**) .

Note: The default value for the fee extension's period has now been revised so that it follows the Registry's configuration and is no longer permanently fixed at one (1) year.

Block - Renew Tags

If a **Block - Renew** tag that is not configured with **Allow Override** is applied to a domain name, it cannot be renewed. The domain name can, however, be manually renewed by Registry and system-level users if the associated **Block - Renew** tag has been configured with the **Allow Override** setting. For more information, see "Renew Domains" on page 43.

Domain Restore

The Domain Restore function is performed in two separate functions, a request and a report:

- A successful Domain Restore request will initiate the process to restore and renew domain names again for their Registrants (as an option for resolving renewal problems before the domain name is finally deleted from the registry database). This can only be performed for domain names that have transitioned to a `redemptionPeriod` state.
- A successful Domain Restore report will complete the process but can only be performed on domain names that are in a `pendingRestore` state.

Domain Restore requests and reports are submitted as part of a domain update request.

Following a successful restoration, the domain name will be transitioned to a `Registered` state.

Warning: If a Domain Restore request is made but no Domain Restore report is received before the `pendingRestore` period ends, the domain name will revert back to a `redemptionPeriod` state.

Request and Report

The following are the XML fields that may be used in a Domain Restore request after which the domain name will transition to a `pendingRestore` state.

Domain Name

EPP Element = `<domain:name>`

Usage = Mandatory

Description = The name of the domain.

Request

EPP Element = `<rgp:restore op="request"/>`

Usage = Mandatory

Description = The operational element that forms the request portion of the domain restore.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

The following are the XML fields that may be used in a Domain Restore report after which the domain name will transition to a `Registered` state.

Request

EPP Element = `<rgp:restore op="report"/>`

Usage = Mandatory

Description = The operational element that forms the report portion of the domain restore.

Pre-Deletion Registration Data

EPP Element = `<rgp:preData>`

Usage = Mandatory

Description = The registration data that existed for the domain name prior to the domain name being deleted.

Post-Deletion Registration Data

EPP Element = `<rgp:postData>`

Usage = Mandatory

Description = The registration data that exists for the domain name at the time that the restore request is submitted.

Deletion Time Stamp

EPP Element = `<rgp:delTime>`

Usage = Mandatory

Description = The date and time when the domain name delete request was sent.

Restoration Time Stamp

EPP Element = `<rgp:resTime>`

Usage = Mandatory

Description = The date and time when the original domain restore request was sent.

Reason

EPP Element = `<rgp:resReason>`

Usage = Mandatory

Description = A brief explanation of the reason for restoring the domain name.

Statement

EPP Element = `<rgp:statement>`

Usage = Mandatory

Description = A text statement that the client has not restored the domain name in order to assume the rights to use or sell the domain name for itself or for any third party. Supporting information related to this statement may be supplied in the <rgp:other> element. A second <rgp:statement> may be included that contains a text statement that the information in the restore report is factual to the best of the client's knowledge.

Other Statement

EPP Element = `<rgp:other>`

Usage = Optional

Description = An optional element that contains any information needed to support the statements provided by the client.

Sample

```
<extension>
  <rgp:update xmlns:rgp="urn:ietf:params:xml:ns:rgp-1.0">
    <rgp:restore op="report">
      <rgp:report>
        <rgp:preData>Not applicable.</rgp:preData>
        <rgp:postData>Not applicable.</rgp:postData>
        <rgp:delTime>2018-10-10T22:00:00.0Z</rgp:delTime>
        <rgp:resTime>2018-10-20T22:00:00.0Z</rgp:resTime>
        <rgp:resReason>Registrant error.</rgp:resReason>
        <rgp:statement>This registrar has not restored the Registered Name in order
to assume the rights
         to use or sell the Registered Name for itself or for any third
party.</rgp:statement>
        <rgp:statement>The information in this report is true to best of this regis-
trar's knowledge,
          and this registrar acknowledges that intentionally supplying false
information in this report
                          shall constitute an incurable material breach of the
Registry-Registrar Agreement.</rgp:statement>
       </rgp:report>
     </rgp:restore>
    </rgp:update>
</extension>
```

Response

The following are the XML fields that may occur in a response to a Domain Restore request.

Domain Status

EPP Element = `<rgp:rgpStatus s="pendingRestore"/>`

Description = Indicates the life cycle state to which the domain name has been transitioned.

Response and Error Codes

Response codes are returned with the response to a Domain Info request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Domain Transfer

A successful Domain Transfer request transfers the sponsorship of a domain name from another Registrar to the Registrar submitting the request.

Note: Registrant to Registrant transfers are more formally referred to as "domain name updates", not "transfers".

The request must include the authInfo for the domain name and the request must be made by the "gaining" Registrar.

Upon a successful transfer, IRS automatically transfers the sponsorship of all hosts that are subordinate to a transferred domain name. For example, if domain "example.fury" is transferred and host object "ns1.example.fury" exists, the host is also transferred. Hosts that are transferred when a domain name is transferred are listed in the Domain Transfer response.

The domain name cannot be transferred if either of the following status flags is set at the time that the request is made:

- `clientTransferProhibited`
- `serverTransferProhibited`
- `pendingTransfer`
- `pendingCreate`

- `pendingDelete`
- `pendingRenew`
- `pendingRestore`
- `pendingTransfer`
- `pendingUpdate`

A domain name transfer involves the following constraints and characteristics.

- After a successful transfer, the Registry will prohibit another transfer from occurring for a configured period from the current transfer date. The default configuration is 60 days but this value can be modified.
- The transfer of a domain name that is done during Auto Renew Period, places the domain name in the registered stage of life.
- Domain names cannot be transferred during the Add Period, Redemption Period, or Pending Delete. If the Transfer in Redemption toggle has been enabled in Registry Settings, domain names can be transferred when they are in the Redemption period.
- DNSSEC domain name transfers are supported between different Registrars.
- For a Domain Transfer request to be successful, the resulting domain name and its contact. associations must be valid according to the rules specified for "Domain Create".
- Transfers of premium domains are prohibited if the receiving Registrar is not permitted to register premium domains.
- If the Change Authorization Code on Transfer toggle is enabled by the Registry, IRS auto-generates a new authorization code for a domain as part of a successful domain transfer. As well, if the Authorization Code has been configured to expire, the authorization code expiry date for the updated code will be reset based on the date of the domain transfer.
- If the Authorization Code has been configured to expire, domains cannot be transferred if the authorization code has expired. The authorization code must be updated first in order to do the transfer.

When a domain name is first created, a Domain Transfer is not permitted until the domain name has been in existence for a minimum period.

Note: The gaining Registrar should change the domain name password (authorization code) after a successful domain transfer.

- A domain name cannot be transferred if the gaining Registrar does not have sufficient funds for the transaction.
- Registrars are not charged for transfers.
- For a synchronous transfer, a successful Registrar to Registrar transfer initiates a poll queue message from the Registry to the losing Registrar which informs the Registrar of the action.
- For an asynchronous transfer, a successful Registrar to Registrar transfer initiates a poll queue message from the Registry to the gaining Registrar which informs the Registrar of the action.

Domain name transfers are also subject to limitations based on the current status of the Registrar.

- If the Registry is configured with the **Instant Transfer** setting to automatically perform domain name transfers without any approvals required, a Registrar that is currently in either a `Restricted` or an `Inactive` state cannot request domain name transfers. Other Registrars can, however, request transfers of domains that are associated with a Registrar that is either `Restricted` or `Inactive`.
- If the Registry is not configured with the **Instant Transfer** setting so that domain name transfers require approval, a Registrar that is in a `Restricted` state can approve or reject transfer requests but cannot request domain name transfers. Other Registrars can, however, request transfers of domains that are associated with a `Restricted` Registrar.,

- If a Registrar is in an `Inactive` state and domain name transfers require approval, the Registrar cannot approve, reject, or request domain name transfers but other Registrars can request transfer of domains that are associated with an `Inactive` Registrar.
- If there is a pending transfer of a domain name to a Registrar that changes from an `Active` to an `Inactive` state, the transfer will automatically be cancelled.
- If there is a pending transfer of a domain name from a Registrar that changes from an `Active` to an `Inactive` state, the transfer will continue to proceed as per usual.

Domain Transfer Command Syntax

The following are the Domain Transfer fields.

Command

EPP Element = `<transfer op="request">`

Usage = Mandatory

Valid Values = "approve", "cancel", "query", "reject", or "request" depending on the transfer command being performed.

Name

EPP Element = `<domain:name>`

Usage = Mandatory

Description = The domain name.

Valid Values = The maximum number of labels, separated by period characters, is four (4). The maximum number of characters per label is 63. Characters must be alphanumeric or "-" but "-" cannot appear at the start or end of a label.

Authorization Information

EPP Element = `<domain:pw>`

Usage = Mandatory (for a Request), optional (for a Query), or not required (for Approve, Reject, or Cancel).

Description = The authorization password for the domain object

Valid Values = Authorization codes must be between the minimum and maximum number of characters defined by the Registry and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z, or numerals 0 to 9) or the hyphen (-) character.

Domain Period

EPP Element = `<domain:period>`

Usage = Optional for Transfer Request only. Ignored for all other commands.

Description = The number of units to be added to the registration period of the domain object upon completion of the transfer process.

Valid Values = Limited by the maximum allowed term length.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = If the request contains an optional Registrar Transaction ID, this value will be included in the response.

Note: The gaining Registrar must supply the correct authInfo of the domain name being transferred.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Registry Actions

A successful Domain Transfer request initiates the following Registry actions.

***Current Life Cycle State* = auto-renew**

Registry Actions = Sets life cycle state to Registered. Sets status flag serverTransferProhibited for a configured period (the default is 60 days).

***Current Life Cycle State* = other**

Registry Actions = Sets the status flags serverTransferProhibited for a period that can be configured.

- By default, a successful transfer adds one year to the registration provided the registration does not exceed 10 years. This default value can be modified.
- The gaining Registrar will not be charged the renewal fee if the registration period is not extended.
- When the domain is successfully transferred, a poll message is sent to the gaining Registrar.
- For a synchronous transfer, a successful Registrar to Registrar transfer initiates a poll queue message from the Registry to the losing Registrar which informs the Registrar of the action.
- For an asynchronous transfer, a successful Registrar to Registrar transfer initiates a poll queue message from the Registry to the gaining Registrar which informs the Registrar of the action.
- When a pending transfer operation is rejected, a poll message is sent to the gaining Registrar.
- When a pending transfer operation is cancelled, a poll message is sent to the losing Registrar stating that the pending operation has been cancelled.

Response

The following are the fields that may occur in the response to a Domain Transfer command.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific `<extValue>` error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Name

EPP Element = `<domain:name>`

Description = The domain name.

Status

EPP Element = `<domain:trStatus>`

Description = The status of the most recent transfer action. Possible values include:

- `clientApproved`
- `clientCancelled`
- `clientRejected`
- `pending` (Transfer Query while the domain name is in the transferPeriod stage)
- `serverApproved` (instant transfer or end of transferPeriod with approval option)
- `serverCancelled` (end of the transferPeriod stage with a rejection option or domain deleted during pendingTransfer)

Requesting Registrar's ID

EPP Element = `<domain:reID>`

Description = The requesting (or gaining) Registrar's ID.

Request Date

EPP Element = `<domain:reDate>`

Description = The request date.

Losing Registrar's ID

EPP Element = `<domain:acID>`

Description = The identifier of the client that should act upon a pending transfer request. For all other status types, the value identifies the client that took the indicated action.

Transfer Approval Date

EPP Element = `<domain:acDate>`

Description = The date and time of a required or completed response. For a pending request, this value identifies the date and time by which a response is required before an automated response action will be taken by the server. For all other status types, the value identifies the date and time when the request was completed.

Expiry Date

EPP Element = `<domain:exDate>`

Description = The date and time that the domain name is set to expire in the Registry.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request, if the request specified a Registrar Transaction ID.

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response / Error Codes

When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Registry Fee Extension

IRS supports the Registry Fee Extension for the Extensible Provisioning Protocol (for more information, refer to **https://tools.ietf.org/html/draft-ietf-regext-epp-fees-00**) .

Note: The default value for the fee extension's period has now been revised so that it follows the Registry's configuration and is no longer permanently fixed at one (1) year.

Domain Update

A successful Domain Update request modifies a domain object in the Registry, and may also add or delete relationships between the domain name and previously created hosts and contacts.

A Domain Update request may contain a combination of remove, add, and change field operations; at least one of these operations must be specified. If more than one of these operations is specified, the operations are processed in the following order: remove, add and then change.

Only the sponsoring Registrar (or the Registry) can update a domain. Even the sponsoring Registrar cannot update the domain if any of the following status values are set at the time that the request is made:

- clientUpdateProhibited
- serverUpdateProhibited
- pendingUpdate
- pendingTransfer

Updates can be made to the Authorization Code for domains in `redemptionPeriod` only if the Allow Domain Authorization Code Update in Redemption toggle is enabled by the Registry. When this toggle is enabled, only the Authorization Code can be updated; no other updates can be made. If the toggle is disabled (which is the default) or the domain is locked, no updates can be made to domains in `redemptionPeriod`.

Domains that are associated to a zone can only be modified by users with the correct permissions.

A Domain Update request allows a contact ID to be changed for a Registrant. However, other contact types cannot be changed, but must instead be removed and then a new one added.

For a Domain Update request to be successful, the resulting domain name and its contact associations must be valid according to the rules specified for Domain Create.

Workflow when updating DS or DNSKEYs during a Domain Update

When adding DS or DNSKEY data via domain:update, as per section 4 of RFC 5910, the Registry will not allow mixing of interface (DS vs DNSKEY) – meaning that within the same domain:update transaction if the first DNSSEC element being added is a DS element then any following DNSSEC elements being added MUST be DS element. Similarly, if the first element being added is a DNSKEY element, then any following elements being added MUST be DNSKEY elements.

In contrast to section 4 of RFC 5910 the Registry will allow DNSSEC data of a certain interface to be added to a domain via domain:update, while within the same transaction removing DNSSEC data of a different interface. For example, the Registry will allow DS data to be added to a domain while within the same domain:update transaction DNSKEY data is removed.

When removing DNSSEC data via domain:update, the following business logic will apply:

- If a DNSKEY element is removed then ALL DS records related to that DNSKEY will also be removed / deleted from the Registry for that domain.
- If a DS element which is related to a DNSKEY (in other words, the DNSKEY was provided when the DS record was created) is deleted, its related DNSKEY will only be deleted if it is has no relation to other DS records for the same domain.

Request

The following are the XML fields used in a Domain Update request.

Note: When a field is empty, the previous field value is removed.

Name

EPP Element = `<domain:name>`

Usage = Mandatory

Description = The domain name . Characters must be alphanumeric or hyphens with the exception that you cannot use a hyphen as the first character, the third and fourth characters (combined together), or the last character of a label. For example, `ns1.te--st.fury` is invalid with two hyphens as the third and fourth characters..

Valid Values = The maximum number of labels, separated by period characters, is four (4). The maximum number of characters per label is 63.

Added Field Values

EPP Element = `<domain:add>`

Usage = Optional

Description = The set of field values that can be added.

Removed Field Values

EPP Element = `<domain:rem>`

Usage = Optional

Description = The set of field values that can be removed.

Host Name

EPP Element = `<domain:hostObj>`

Usage = Optional

Description = The host names to be added to or removed from the domain name.

Valid Values = The host names currently assigned to the domain name. The number of delegated host objects is either 0 or 2-13. Each host object must be created in the Registry before the host can be associated with a domain name.

Contact Identifiers

EPP Element = `<domain:contact type = "*">`

Usage = Optional

Description = Where "*" is either an administrative, billing, or technical contact.

Valid Values = Any contact must be created in the Registry before the domain name is created.

- **Admin** - Number of administrative contacts per domain name is one.
- **Tech** - Number of technical contacts per domain is one.
- **Billing** - Number of billing contacts per domain name is zero (0) to many.

Status Values

EPP Element = `<domain:status>`

Description = The status flags associated with the domain name.

Changed Field Values

EPP Element = `<domain:chg>`

Usage = Optional

Description = The field values that can be modified.

Registrant Contact

EPP Element = `<domain:registrant>`

Description = The identifier of a contact having the Registrant relationship to the domain name.

Valid Values = The Registrant must be created in the Registry before the domain name is created. Number of Registrants per domain name is one (1). May be required to indicate agreement with the Registrant Agreement.

DS Record

EPP Element = `<secDNS:dsData>`

Usage = Optional

Description = DS Records for the domain name.

Valid Values = The DS record must include the Keytag, Algorithm, Digest Type and Digest. DS Records with DNSKEY must include the Keytag, Algorithm, Digest Type, Digest, Flag and DNSKEY.

DNSKEY

Usage = Optional

Description = The public key used to generate the DS records.

Valid Values = DNSKEY records must include the Flags, Protocol, Algorithm, and publicKey.

Authorization Information

EPP Element = `<domain:pw>`

Usage = Optional

Description = The authorization password that is associated with the domain object.

Valid Values = Authorization codes must be between the minimum and maximum number of characters defined by the Registry and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z, or numerals 0 to 9) or the hyphen (-) character.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

Privacy

EPP Element = `<fury:key>PRIVACY</fury:key>`

Usage = Optional

Description = The domain privacy setting for WHOIS information configured as either `Private` or `Public`.

Reseller Name

EPP Element = `<fury:key>RESELLER_NAME</fury:key>`

Usage = Optional

Description = The name of the reseller associated with this domain.

Valid Values = The maximum number of characters is 256.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the XML fields that may occur in the response to a Domain Update request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific `<extValue>` error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response Codes

When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Registry Fee Extension

IRS supports the Registry Fee Extension for the Extensible Provisioning Protocol (for more information, refer to **https://tools.ietf.org/html/draft-ietf-regext-epp-fees-00**) .

Note: The default value for the fee extension's period has now been revised so that it follows the Registry's configuration and is no longer permanently fixed at one (1) year.

Contacts

This chapter describes the creation and management of contacts within the Registry. A domain name must have a relationship to one or more contacts. There are several types of relationships between a domain name and related contacts

including:

- Registrant
- Administrative Contact
- Technical Contact
- Billing Contact

Note: Registrants, administrative contacts, technical contacts, and billing contacts are all represented as contact objects in the Registry.

A contact can only be used as a Registrant if the validation rules are satisfied as described in "Domain Create" on page 108 and "Domain Update" on page 125.

The Registry supports these query requests to retrieve contact information:

- "Contact Check" on page 135 - queries whether a subsequent Contact Create request would succeed.
- "Contact Info" on page 131 - used to retrieve information associated with an existing contact object.

The Registry supports these transform requests to modify contact information:

- "Contact Create" on page 136 - creates a contact object
- "Contact Delete" on page 140 - deletes a contact object
- "Contact Update" on page 141 - modifies the attributes of a contact object

Transform requests are typically processed and completed in real time. The Registry may defer completing a requested action if offline review is required. In such situations, the response contains a 1001 response code to indicate that the request has been received and processed, but the requested action is pending. The Registry manages the status of the object that is the subject of the request to reflect the initiation and completion of the requested action.

Contact Object Properties and Status Values

IRS requires complete Registrant contact information with each contact object in the Registry having the following properties. For a complete list of contact validation error messages, see Contact Validation Messages (7000 Block).

Contact ID

The Registrar-supplied contact identifier. This is a mandatory property.

Contact IDs must be from three (3) to sixteen (16) characters in length and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z, or numerals 0 to 9) or the hyphen (-) character.

Address Type

The contact postal address type. This is a mandatory property.

Note: The only Registry-supported type is `loc` indicating that the address is in a localized form.

Name

The name of the individual. This is a mandatory property.

The name must be from two (2) to two-hundred and fifty-five (255) characters in length. All characters are valid.

Organization

The name of the organization with which the contact is affiliated. This field is optional.

If entered, the organization name must be from two (2) to two-hundred and fifty-five (255) characters in length. All characters are valid.

Street

The street address comprising from one to three fields. This is an optional property.

If entered, the contact name must be from two (2) to two-hundred and fifty-five (255) characters in length per line. All characters are valid.

City

The address city name. This is a mandatory property.

The city name must be from two (2) to two-hundred and fifty-five (255) characters in length.

State or Province

The address province or state. The field must be from two (2) to two-hundred and fifty-five (255) characters in length if entered.

Postal Code or Zip Code

The address postal code.

The postal code must be from zero (0) to sixteen (16) characters if entered.

Country Code

The address country code. This is a mandatory property using two-character identifiers as specified in ISO3166-1.

Phone

The contact's telephone number. This is an optional property.

The telephone number format must be as follows: a plus sign (+), followed by the country code, followed by a period (.), followed by the telephone number (for example, +1.613555555). The phone number (including the plus (+) and period (.) characters) must be from ten (10) to seventeen (17) characters long. The length of the phone number is based on the specified country code. For example, for country code +1 the phone number must be 10 digits long.

If required, you can add an extension number in the extension field. The extension number (including the "x" character) must be from zero (0) to ten (10) characters long. For example, `<contact:voice x="1234">+1.6135555555</contact:voice>`.

Fax

The contact's fax number. This is an optional field.

The fax number format must be as follows: a plus sign (+), followed by the country code, followed by a period (.), followed by the fax number (for example, `+1.613555555`). The fax number (including the plus (+) and period (.) characters) must be from ten (10) to seventeen (17) characters long. The length of the fax number is based on the specified country code. For example, for country code +1 the fax number must be 10 digits long.

If required, you can add an extension number. The extension number (including the "x" character) must be from zero (0) to ten (10) characters long.

Email

The contact's email address. This is a mandatory property.

The contact email must be in standard email format (for example, `email@domain.tld`).

Sponsor ID

The identifier of the sponsoring Registrar.

Authorization Code

The contact's authorization code. If the Hashed Authorization Code toggle has been enabled by the Registry at the database level, this information is stored as a hashed value and will not be returned in a response.

Authorization codes must be between the minimum and maximum number of characters defined by the Registry and consist only of alphanumeric characters (lowercase a to z, uppercase A to Z, or numerals 0 to 9) or the hyphen (-) character.

Language

The contact's preferred language for communication.

The default value will be the default language that is configured for the Registry (for example, `en` for English).

Agreement Fields

Note: Not all Registries will require agreements. The following fields will not be applicable to all Registries.

Status Values

A contact object always has at least one associated status value. Each status value is accompanied by text that describes the rationale for the status applied to the object.

The sponsoring Registrar can explicitly add or remove status values prefixed with "client" using a Contact Update request, but must not alter other status values. The Registry may change any status value.

clientDeleteProhibited *or* serverDeleteProhibited

The Registry will reject requests to delete the object

clientUpdateProhibited *or* serverUpdateProhibited

The Registry will reject requests to update the object (other than to remove this status).

pendingUpdate

A request to update a contact has been received and is being processed will be in a pendingUpdate status.

pendingDelete

PendingDelete contacts occur when they are not associated to a domain name within 60 days. They'll remain in pendingDelete for 30 more days before being deleted from the system.

ok

The status value for a Contact that has no pending operations or prohibitions, this value is automatically configured and removed by IRS as other status values are added or removed.

linked

Automatically assigned by IRS, this status shows that the Contact is linked to at least one domain.

Note: The linked status for contacts is applied by monitoring domain changes asynchronously. As a result, there will be a slight delay before the correct status is displayed.

Contact Info

A successful Contact Info request retrieves information associated with an existing contact.

All available information is returned if the querying Registrar is the contact's sponsor. For a non-sponsoring Registrar, all contact information is returned if the correct authorization code is entered. As well, if the Authorization Code Expiry has been configured, the authorization code must not be expired. Otherwise, the `<contact:info>` will fail.

Request

The following are the XML fields that may be used in a Contact Info request.

Contact ID

EPP Element = `<contact:id>`

Usage = Mandatory

Description = The identifier of the contact to be queried

Valid Values = Length is 3–16 alphanumeric characters

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = The transaction identifier generated by the Registrar when submitting the request

Contact Authorization

EPP Element = `<contact:authInfo>`

Usage = Optional (provided if you are not the contact's sponsoring Registrar)

Description = The security password of the contact.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the XML fields that may occur in the response to a Contact Info request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific `<extValue>` error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Contact ID

EPP Element = `<contact:id>`

Description = The client-supplied identifier for the information.

Registry ID

EPP Element = `<contact:roid>`

Description = The identifier assigned by the Registry when the object was created.

Status

EPP Element = `<contact:status>`

Description = One or more status indicators describing the status of the contact object.

Address Type

EPP Element = `<contact:postalInfo>`

Description = The postal address information. The `<contact:postalInfo>` is saved as localized: `<contact:postalInfo type="loc">`.

Name

EPP Element = `<contact:name>`

Description = The name of the individual contact.

Organization

EPP Element = `<contact:org>`

Description = The name of the organization with which an individual is affiliated, when applicable.

Address

EPP Element = `<contact:addr>`

Description = The address information associated with the contact, such as:

- Street `<contact:street>` - One to three elements are permitted. These elements contain the contact's street address
- City `<contact:city>` - the name of the city where the contact resides
- State or Province `<contact:sp>` - the province, state or region in which the contact resides, when applicable.
- Postal code `<contact:pc>` - the contact's postal code, when applicable
- Country code `<contact:cc>` - the contact's two-character country code, as recognized by ISO

Phone

EPP Element = `<contact:voice>`

Description = The contact's telephone number.

Fax

EPP Element = `<contact:fax>`

Description = The contact's fax number.

Email

EPP Element = `<contact:email>`

Description = The contact's email address.

Contact Sponsor ID

EPP Element = `<contact:clID>`

Description = The identifier of the sponsoring Registrar.

Creator ID

EPP Element = `<contact:crID>`

Description = The identifier of the Registrar that created the contact object in the Registry.

Creation Date

EPP Element = `<contact:crDate>`

Description = The creation date and time that the contact object was created in the Registry.

Update ID

EPP Element = `<contact:upID>`

Description = The identifier of the Registrar that last updated the contact information. This field is not present if the contact object has never been updated.

Update Date

EPP Element = `<contact:upDate>`

Description = The date and time of the most recent contact object modification. This field is not present if the contact object has never been updated.

Contact Authorization

EPP Element = `<contact:pw>`

Description = The security password of the contact. This information is only displayed when:

- The querying Registrar is the current sponsoring Registrar.
- The Registrar has supplied valid authorization information with the request.
- The Hashed Authorization Toggle has not been enabled by the Registry.

Preferred Language

EPP Element = `<fury:key>language`

Description = The contact's preferred language for communication.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = The transaction identifier generated by the Registry when processing the request.

Response/Error codes

Response codes are returned with the response to a Contact Info request. When the request is successful, the response will usually contain a single 1000-series response code and message.

Contact Check

A successful Contact Check request determines whether a Contact ID is available for use and whether a contact can be created in the Registry.

When creating a new contact, the Registrar must generate a Registry-unique contact ID. A Registry Contact Check request can determine whether an ID is already in use.

A single request can check from 1 to 15 contacts.

Request

The following are the XML fields that may be used in a Contact Check request.

Contact ID

EPP Element = `<contact:id>`

Usage = Mandatory. There may be 1-15 in the table.

Description = The identifier of the contact object.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional.

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the fields that may occur in the response to a Contact Check request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRSincludes a more specific `<extValue>` error code. Each IRS error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Contact ID

EPP Element = `<contact:id>`

Description = Identifies the queried object. Contains one of the following values:

- A value of "true" means yes it can be provisioned
- A value of "false" means no, the name registration cannot be provisioned at this time

Reason

EPP Element = `<contact:reason>`

Description = For each contact, a reason is provided when a contact cannot be created. The reason does not return a value, only descriptive text. The following reasons are returned for Contact Check:

- Invalid contact ID format- range is 3-16, characters must be alphanumeric
- Selected contact ID is not available

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = If the request contains an optional Registrar Transaction ID, this value will be included in the response.

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response/Error Codes

Response codes are returned with the response to a Contact Check request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Contact Create

A successful Contact Create request creates a contact object in the Registry.

To create a domain name successfully, a Registrar does not need to be the sponsor of the related hosts but must be the sponsor of all assigned contacts.

When you subsequently create a domain name, you create relationships between the domain name and previously created contacts. If a contact is not associated with a registered domain name within 60 days after it is created, the contact status is set to `pendingDelete`. If the contact `pendingDelete` status remains for a further 30 days, the contact is deleted and the Registry sends a service message to the contact's sponsor.

There are several types of domain-contact relationships:

- A single "Registrant" domain-contact object relationship denotes the person or organization that holds the domain name registration. If a contact object is to be used as a domain name Registrant then it must satisfy specific Registry requirements.
- A single Administrative contact-domain relationship indicates the individual or non-individual that is authorized by the Registrant to administer administrative information for a registered domain.
- A single Technical contact-domain relationship indicates the individual or non-individual that is authorized by the Registrant to administer technical information for a registered domain.
- From zero to many "Billing Contact" domain-contact object relationships denote people who typically are responsible for the financial aspects of the domain.

Request

The following are the XML fields that may be used in a Contact Create request. For a list of contact validation criteria, see "Contact Object Properties and Status Values" on page 129.

Contact Create Request Fields

Contact ID

EPP Element = `<contact:id>`

Usage = Mandatory

Description = The Registrar-supplied contact identifier.

Address Type

EPP Element = `<contact:postalInfo type="loc">`

Usage = `loc` address types are mandatory while `int` address types are optional.

Description = The contact postal address type.

Name

EPP Element = `<contact:name>`

Usage = Mandatory

Description = The name of the contact. This can be the name of an individual or an organization.

Organization

EPP Element = `<contact:org>`

Usage = Optional

Description = The name of the organization with which the contact is affiliated.

Street

EPP Element = `<contact:street>`

Usage = Optional

Description = The street address.

Note: There can be as many as three street addresses.

City

EPP Element = `<contact:city>`

Usage = Mandatory

Description = The address city name.

State or Province

EPP Element = `<contact:sp>`

Usage = Optional

Description = The contact's state, provincial or region code.

Postal Code

EPP Element = `<contact:pc>`

Usage = Optional

Description = The address postal code.

Country Code

EPP Element = `<contact:cc>`

Usage = Mandatory

Description = The address country code.

Phone

EPP Element = `<contact:voice>`

Usage = Optional

Description = The contact's telephone number.

Fax

EPP Element = `<contact:fax>`

Usage = Optional

Description = The contact's fax number.

Email

EPP Element = `<contact:email>`

Usage = Mandatory

Description = The contact's email address.

Authorization Password

EPP Element = `<contact:authInfo>`

`<contact:pw>password</contact:pw>`

Usage = Mandatory

Description = The authorization password of the contact.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

Note: The following properties are only supported if you have specified that you are using the Fury 2.0 extension during your EPP login.

The following is an example of the extension you would use to create an English contact .

```
 <extension>
        <fury:create xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
        <fury:properties>
                <fury:property>
                        <fury:key>LANGUAGE</fury:key>
                        <fury:value>EN</fury:value>
                </fury:property>
        </fury:properties>
        </fury:create>
    </extension>
</command>
</epp>
```

Preferred Language

EPP Element = `<fury:key>language`

Usage = Optional (unless you specified that you are using the IRS extension during your EPP login in which case this field is mandatory)

Description = The contact's preferred language for communication. The default value is the Registry's default language.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Registry Actions

Response

The following are the XML fields that may occur in the response to a Contact Create request.

Contact Create Response Fields

Response Code

EPP Element = `<result code "xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example, the English human-readable description of response code `1000` is `Command completed successfully`.

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific `<extValue>` error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example, the English human-readable description of response code `8046` is `This status request cannot proceed at this time`.

Contact ID

EPP Element = `<contact:id>`

Description = The contact identifier supplied by the Registrar.

Creation Date

EPP Element = `<contact:crDate>`

Description = The date and time the contact was created in the Registry.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response Codes

Response codes are returned with the response to a Contact Create request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

For example, when the `<contact:city></contact:city>` tags are present and the element is empty, the following errors are returned:

```
2001 Command syntax error
5600 The 'city' element cannot be empty
```

Contact Delete

A successful Contact Delete request deletes a contact object from the Registry.

Request

The Registry will notify the Registrar of object relationships when a Contact Delete request is attempted and fails due to existing relationships.

Note: The Registry will reject a request to delete a contact ID if the contact ID is associated with a domain. Update the domain to remove the relationship before deleting the contact.

The following are the XML fields used in a Contact Delete request.

Contact Delete Request Fields

Contact ID

EPP Element = `<contact:id>`

Usage = Mandatory

Description = The contact identifier of the contact object to be deleted.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the XML fields that may occur in the response to a Contact Delete request.

Contact Delete Response Fields

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific `<extValue>` error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response Codes

Response codes are returned with the response to a Contact Delete request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Contact Update

A successful Contact Update request modifies a contact object in the Registry. Updates to Registrant contacts must be valid and must be complete.

An update request may contain a combination of add, delete, and change field operations but at least one of these operations must be included. If more than one of these operations is specified, the operations are processed in the following order:

1. remove,
2. add, and then,
3. change.

It is important to note that if you choose to update the contact's postal address on a Contact Update request you must submit the contact's city and country. This is consistent with the contact XML schema as defined in the RFC.

Note: Changes made with a Contact Update request may affect address updates. For example, when you update the city property of a contact, you must also provide the values for all address fields.

Values for Language properties can be removed using `<fury:remAll>` statements instead of `<fury:value>` statements that configure values.

Request

The following are the fields used in a Contact Update request. For a list of contact validation criteria, see "Contact Object Properties and Status Values" on page 129.

Contact ID

EPP Element = `<contact:id>`

Usage = Mandatory

Description = The Registrar-supplied contact identifier.

Removed Field Values

EPP Element = `<contact:rem>`

Usage = Optional

Description = The field values that can be removed.

Added Field Values

EPP Element = `<contact:add>`

Usage = Optional

Description = The field values that can be added.

Status Values

EPP Element = `<contact:status>`

Description = Status of the contact object. When specifying a value to be added or removed, only the attribute value is significant. The element text is not required to match a value for removal of a status.

Changed Field Values

EPP Element = `<contact:chg>`

Usage = Optional

Description = The set of field values that can be modified.

Name

EPP Element = `<contact:name>`

Usage = Mandatory

Description = The name of the contact.

Organization

EPP Element = `<contact:org>`

Usage = Optional

Description = The name of the organization to which the contact is affiliated.

Street

EPP Element = `<contact:street>`

Usage = Optional

Description = The contact's street address.

City

EPP Element = `<contact:city>`

Usage = Mandatory (also mandatory when updating contact's postal information)

Description = The city where the contact resides.

State or Province

EPP Element = `<contact:sp>`

Usage = Optional

Description = The contact's state, provincial or region code.

Postal Code

EPP Element = `<contact:pc>`

Usage = Optional

Description = The contact's postal code.

Country Code

EPP Element = `<contact:cc>`

Usage = Mandatory

Description = The contact's country code.

Phone Number

EPP Element = `<contact:voice>`

Usage = Mandatory

Description = The contact's phone number.

Fax Number

EPP Element = `<contact:fax>`

Usage = Optional

Description = The contact's fax number.

Email

EPP Element = `<contact:email>`

Usage = Mandatory

Description = The contact's email address.

Authorization Password

EPP Element = `<contact:authInfo>`

`<contact:pw>password</contact:pw>`

Usage = Mandatory

Description = The authorization password of the contact.

Language

EPP Element = `<fury:key>language`

Usage = Optional

Description = The preferred language in which the contact would like to correspond. The default value is the Registry's default language.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the fields that may occur in the response to a Contact Update request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example, the English human-readable description of response code `1000` is `Command completed successfully`.

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific `<extValue>` error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example, the English human-readable description of response code `8046` is `This status request cannot proceed at this time`.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response Codes

When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Hosts

The following describes EPP mapping for the provisioning and management of Internet host objects that are stored within the EPP repository. The mapping defines EPP request syntax as applied to host names. An EPP host object has attributes and associated values that can be viewed and modified by the sponsoring Registrar. When you create or update a host, you must follow the rules that ensure that the domain name can still be resolved even if there is an outage of any individual host or network. This means that two or more unique name servers must be defined for each protocol in use. Although you can use the IPv4 and IPv6 protocols concurrently, they are not interchangeable or compatible. As a result, to use both protocols requires that you must provide data for two unique name servers that are accessible by IPv4 and two unique name servers that are accessible by IPv6.

Note: The Registry enforces the reserved range of IP addresses for Hosts. Refer to RFC 1918 and RFC 4193 for more information about reserved IP addresses. Registrars can access the RFCs from the IETF.org website at **http://datatracker.ietf.org/doc/**.

The host EPP requests are:

- "Host Info" on page 146 - retrieves detailed host information.
- "Host Check" on page 148 - determines whether a host name is available for use and whether it can be created in the Registry.
- "Host Create" on page 150 - creates a host object, identified by its name, in the Registry.

- "Host Update" on page 153 - updates host information.
- "Host Delete" on page 152 - deletes a host object from the Registry.

Host Object Properties and Status Values

A host object represents a Domain Name System (DNS) server that resolves domain names into IP addresses.

Host objects have attributes and associated values that can be viewed and modified by the sponsoring Registrar. At least two name servers are required to activate a domain name.

Note: You cannot provision a host in IRS with an IP address for a top-level domain that is not managed in the Registry.For example, attempting to provision a host with an IP address in the .abc domain will fail if the Registry does not manage .abc domains.

IRS does not restrict the top-most label in `<host:name>` for domain names to ASCII-only labels.

A-labels are accepted in the Registry. Registrars must convert a `host:name` that contains Unicode characters to its A-label value in order to register the host name. For example, `nsl.trèsbonsdomaines.fury` is transformed to `nsl.xn--trsbonsdomaines-vmb.fury`.

IRS also accepts the following, `très.trèsbonsdomaines.fury` is transformed to `xn--trs-7la.xn--trs-bonsdomaines-vmb.fury`

Note: IRS will accept Unicode characters in host names at the third level and higher when the top-level domain is managed in the Registry.

Host Object Properties

Name

The host name comprising of labels of alphanumeric characters delimited by period characters.

Host Address

The IPv4 addresses of the host.

Host Address

The IPv6 addresses of the host.

Sponsor ID

The identifier of the sponsoring Registrar.

Creator ID

The Registrar that created the host object.

Creation Date

The creation date and time of the host object.

Updater ID

The Registrar that last updated the host information.

This element is empty if the host has never been updated.

Update Date

The date and time of the most recent object modification.

This value is empty if the host has never been updated.

Superordinate domain

The relationship that the parent domain object has with the child host object.

Note: This is only returned when the top-level domain of the host is managed in the Registry.

The host object has a lesser relationship to a superior or superordinate domain object.

For example: `ns1.super.fury` has a lesser or subordinate relationship to the domain name `super-.fury`.

Status Values

A host object always has at least one associated status value. Each status value is accompanied by text that describes the rationale for the status applied to the object.

The sponsoring Registrar can explicitly add or remove status values prefixed with "client" using a Host Update request, but must not alter other status values. The Registry may change any status value.

Host Status Values

clientDeleteProhibited *or* serverDeleteProhibited

The Registry will reject requests to delete the object.

clientUpdateProhibited *or* serverUpdateProhibited

The Registry will reject requests to update the object (other than to remove this status).

pendingDelete

Pending Delete hosts occur when they are not associated to a domain name within 90 days. They'll remain in pendingDelete for one more day before being deleted from the system.

ok

The status value for a Host that has no pending operations or prohibitions, this value is automatically configured and removed by IRS as other status values are added or removed.

linked

Automatically assigned by IRS, this status shows that the Host is linked to at least one domain.

Note: The linked status for hosts is applied by monitoring domain changes asynchronously. As a result, there will be a slight delay before the correct status is displayed.

The Registry uses a service message to notify all Registrars involved in a pending transaction that the action has been completed or has been rejected and that the status of the object has changed.

Host Info

A successful Host Info request retrieves detailed host information.

Request

The following are the XML fields that may be used in a Host Info request.

Name

EPP Element = `<host:name>`

Usage = Mandatory

Description = The identifier of the host to be queried.

Valid Values = The beginning and middle sections must contain alphanumeric characters and must be separated by a period (.) containing from one to 63 characters. The beginning and middle sections may contain hyphens (-) with the exception that you cannot use a hyphen as the first character, the third and fourth characters (combined together), or the last character of a label. For example, `ns1.te--st.-fury` is invalid with two hyphens as the third and fourth characters. NO other special characters are permitted. The last (TLD) section must contain only alphabetic characters and must contain at least two characters.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the XML fields that may occur in the response to a Host Info request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes.

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRSincludes a more specific <extValue> error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example, the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Name

EPP Element = `<host:name>`

Description = The name of the host.

Registry ID

EPP Element = `<host:roid>`

Description = The system-generated repository object identifier that was assigned to the host object when the object was created.

Status

EPP Element = `<host:status>`

Description = One or more flags describing the status of the host object.

Host Address

EPP Element = `<host:addr>`

Description = The IP addresses associated with the host object. The `ip` attribute indicates the type of IP address. For example, `<host:addr ip="v4">123.456.789.000</host:addr>` indicates that

the host address is an IPv4 address. The values for the attribute are either `v4` or `v6` and the attribute is mandatory.

Sponsor ID

EPP Element = `<host:clID>`

Description = The identifier of the sponsoring Registrar.

Creator ID

EPP Element = `<host:crID>`

Description = The identifier of the Registrar object representing the Registrar that created the domain object.

Creation Date

EPP Element = `<host:crDate>`

Description = The creation date and time of the host object in the Registry.

Updater ID

EPP Element = `<host:upID>`

Description = The optional identifier of the Registrar that last updated the object. This element is empty if the object has never been updated.

Update Date

EPP Element = `<host:upDate>`

Description = The optional date and time of the most recent object modification. This value is empty if the host has never been updated.

Transfer Date

EPP Element = `<host:trDate>`

Description = The optional date and time of the most recent successful domain transfer. This value is empty if the domain has never been transferred.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response and Error Codes

Response codes are returned with the response to a Host Info request. When the request is successful, the response will usually contain a single 1000-series response code and message. Optionally, a secondary error response code or message may be provided from the Registry system.

Host Check

A successful Host Check request determines whether a host is available for use and whether a host can be created in the Registry.

A single request can check from 1 to 15 host names.

Request

The following are the XML fields that may be used in a Host Check Request.

Name

EPP Element = `<host:name>`

Usage = Mandatory. There may be 1-15 in the table.

Description = The host name.

Valid Values = Comprised of labels of alphanumeric characters delimited by period characters, for example: `ab1.cdefg.fury`.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional.

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the XML fields that may occur in a response to a Host Check Request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific <extValue> error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Host Name

EPP Element = `<host:name avail="*">`

Description = The name of the checked host object where `"*"` represents the value "true" or "false". A value of "true" means it can be provisioned while a value of "false" means that the host name cannot be provisioned at the current time.

Reason

EPP Element = `<host:reason>`

Description = For each host name, a reason is provided when a host name cannot be created. The reason does not return a value, only descriptive text. The following reasons are returned for Host Check:

- Invalid host name format - see documentation
- Selected Host is not available
- Available, but domain does not exist

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response and Error Codes

Response codes are returned with the response to a Host Check request. When the request is successful, the response will usually contain a single 1000-series response code and message. Optionally, a secondary error response code or message may be provided from the Registry system.

Host Create

A successful Host Create request creates a host object identified by its name in the Registry.

Hosts are used as name servers in the Domain Name System (DNS). IP addresses are required to produce DNS glue records when a host is provisioned as a name server. IRS requires the Registrar to create host records if they want the domain name to resolve on the Internet.

When the host is created within the domain:

- The host name can be a text string such as `ns01.000host.fury` which consists of the machine name (for example, `ns01`) and the domain name, `000host.fury`.
- To host an IDN, you need to convert the original domain name (containing non-ASCII characters) into Punycode (or an ACE string).
- It must be created with at least one IP address (one IPv4 format and/or one IPv6 format address, but not more than five of each).
- The superordinate domain must already exist.
- The requesting Registrar must be the sponsor of the superordinate domain.

Note: When the host is not in the same top-level domain as the domain name with which it is associated, it must not have any associated IP addresses. In addition, IRS does not verify whether the superordinate domain exists.

Request

The following are the Host Create request fields.

Host Name

EPP Element = `<host:name>`

Usage = Mandatory

Description = The host name.

Valid Values = The beginning and middle sections must contain alphanumeric characters and must be separated by a period (.) containing from 1-63 characters. The beginning and middle sections may contain hyphens (-) with the exception that you cannot use a hyphen as the first character, the third and

fourth characters (combined together), or the last character of a label. For example, `ns1.te--st.-fury` is invalid with two hyphens as the third and fourth characters. There are NO other special characters permitted. The last (TLD) section must contain only alphabetic characters and at least two characters.

Added and Removed Field Values Host Address

EPP Element = `<host:addr>`

Usage = Mandatory if the host is in the same top-level domain as the associated domain name.

Description = The IP addresses to be associated with the host.

Valid Values = The attribute parameters are:

- "v4" Is used to indicate the IPv4 address format (default)
- "v6" Is used to indicate the IPv6 address format

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the XML fields that may occur in the response to a host Create request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific `<extValue>` error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Host Name

EPP Element = `<host:name>`

Description = The host name supplied by the Registrar.

Creation Date

EPP Element = `<host:crDate>`

Description = The date and time the host object was created in the Registry.

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response and Error Codes

Response codes are returned with the response to a Host Create request. When the request is successful, the response will usually contain a single 1000-series response code and message. Optionally, a secondary error response code or message may be provided from the Registry system.

Host Delete

A successful Host Delete request deletes a host object.

Warning: A host object cannot be deleted while it is associated with a domain object.

Request

The following are the fields used in a Host Delete request.

Host Name

EPP Element = `<host:name>`

Usage = Mandatory

Description = The name of the host object to be deleted.

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the XML fields that may occur in the response to a Host Delete request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes.

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific <extValue> error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example, the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction identifier contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response/Error Codes

Response codes are returned with the response to a Host Delete request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

Host Update

A successful Host Update request modifies host information in the following ways:

- Update a host name.
- Add or remove IPv4 and IPv6 IP addresses.
- Add or remove status flags.

An update request may contain a combination of add, delete, and change field operations; at least one of these operations must be specified. If more than one of these operations is specified, the operations are processed in the order: remove, add, and then change.

A Registrar can update a host object of which it is the sponsor. IP address and status can be updated as desired. There are special considerations for updating a host name.

An update of a host name can succeed if all the domain names associated with it are also sponsored by the Registrar which sponsors the host. This is because of the implied effect of the host name change on those domain names; their resolution in the zone file will be different after the change.

In the case of a legitimate need to change a host name and its prevention by the above condition, Registrars are advised to take the following actions:

- Create a new host object with the desired name and IP address.
- Associate each of your sponsored domains with the new host individually.

Updating the name of a host can impact associated domains that refer to the host. Host name changes do not require additional updates of associated domains to preserve existing associations.

Request

The following are the fields used in a Host Update request.

Host Name

EPP Element = `<host:name>`

Usage = Mandatory

Description = The name of the host to be updated.

Valid Values = The beginning and middle sections must contain alphanumeric characters and must be separated by a period (.) contain from one to 63 characters. The beginning and middle sections may contain hyphens (-) with the exception that you cannot use a hyphen as the first character, the third and fourth characters (combined together), or the last character of a label. For example, `ns1.te--st.-fury` is invalid with two hyphens as the third and fourth characters. NO special characters are permitted. The last (TLD) section must contain only alphabetic characters and at least two characters.

IP addresses

EPP Element = `<host:addr>`

Usage = Optional. This element may be used with the following tags - `add` and `rem`.

Description = IP addresses to be associated with the host .

Status values

EPP Element = `<host:status>`

Usage = Optional. This element may be used with the following tags - `add` and `rem`.

Description = Status values to be associated with the object .

Added and Removed Field Values Host Name

EPP Element = `<host:name>`

Usage = Optional. This element may be used with the `chg` tag.

Description = The field value that can be modified. The host name

Registrar Transaction ID

EPP Element = `<clTRID>`

Usage = Optional

Description = A transaction identifier generated by the Registrar when submitting the request.

For an example of the EPP code used to submit this request, refer to "EPP Code Examples" on page 158.

Response

The following are the XML fields that may occur in the response to a Host Update request.

Response Code

EPP Element = `<result code="xxxx"> <msg>`

Description = One or more four-digit response code numbers that indicate the success or failure of the request execution. When the request is processed successfully, only one response code is returned. An unsuccessful request can return multiple error response codes. Each response code has an associated human-readable message in the Registrar's preferred language. For example the English human-readable description of response code 1000 is "Command completed successfully".

Error Messages

EPP Element = `<extValue> <value> <fury:ciraCode>"xxxx"</fury:ciraCode> <reason>`

Description = Usually IRS includes a more specific <extValue> error code. Each error message has an associated human-readable message in the Registrar's preferred language. IRS-specific error messages help identify the source of validation issues. For example the English human-readable description of response code 8046 is "This status request cannot proceed at this time".

Registrar Transaction ID

EPP Element = `<clTRID>`

Description = The transaction ID contained in the request (if the request specified a Registrar Transaction ID).

Registry Transaction ID

EPP Element = `<svTRID>`

Description = A transaction identifier generated by the Registry when processing the request.

Response/Error Codes

Response codes are returned with the response to a Host Update request. When the request is successful, the response will usually contain a single 1000-series response code and message. An unsuccessful request can have a response that contains several response codes and messages.

EPP Extensions

IRS supports a number of protocol extensions including custom extensions that were developed specifically for the IRS platform.

The IRS EPP server component announces the extensions that are supported in the `<greeting>` element that is sent to clients before interactive sessions are established. EPP clients establish an interactive session with the IRS EPP server using the `<login>` command before attempting to use other commands or extensions. If you do not specify an extension that you wish to use in your `<login>`, it will not be supported for the duration of your session. The exception to this rule is the Registry Grace Period (RGP) extension that is always supported even if not identified in the `<login>`.

EPP Requirements

The Registry EPP extensions are an important element of operational functionality. It is the responsibility of all Registrars to ensure that their EPP requests validate against the EPP schemas.

You can obtain access credentials for IRS from your registry support contact.

EPP object mapping is specified in XML Schema notation.

The following are the XSD extensions supported by IRS:

- **contact-1.0 - RFC 5733**
- **domain-1.0 - RFC 5731**
- **epp-1.0, eppall-1.0, and eppcom-1.0 - RFC 5730**
- **fee-0.9 - RFC Draft: brown-epp-fees**
- **fee-0.11 - RFC Draft: regext-epp-fees**
- **host-1.0 - RFC 5732**
- **idn-1.0 - RFC Draft: eppext-idnmap**
- **launch-1.0 - RFC Draft: regext-launchphase**
- **mark-1.0 and signedMark-1.0 - RFC 7848**
- **rgp-1.0 - RFC 3915**
- **secDNS-1.1 - RFC 5910**

The following are the Fury-specific custom extensions:

- **fury 2.0 - Generic properties**
- **fury-rgp-1.0 - RGP**

Request Requirements

Some EPP requests have specific extension requirements including the following examples:

Domain Create

The request must contain **IDN** extensions when registering an Internationalized Domain Name (IDN).

Premium domain names cannot be created unless the request includes one of the **fee** extensions.

DNSSEC data related to a domain name is accepted through the **secDNS** extension.

Login

IRS messages will only be available if a IRS custom extension is specified in the `<login>` request.

Fury RGP 1.0 EPP Extension

The `fury-rgp-1.0.xsd` custom extension is designed to provide the stage of life end date in the Domain Info response when a domain is in a grace period as defined in **RFC 3915**. Although the rgp-1.0 extension provides the grace period stage of life, it does not identify the stage of life end date. The extension fury-rgp-1.0 provides this additional capability.

As a custom extension, `fury-rgp-1.0.xsd` is written in compliance with **RFC 5730**.

Note: To access the functionality provided by the Fury RGP 1.0 extension, the fury-rgp-1.0 `<extURI>` element must be included within the `<svcExtension>` of the login request.

Domain Info Response Example

```
S:<?xml version="1.0" encoding="UTF-8" standalone="no"?>
S:...
S:    <response>
S:        <result code="1000">
S:            <msg>Command completed successfully</msg>
S:        </result>
S:        <resData>
S:            <domain:infData>
S:              <domain:name>testing.fury</domain:name>
S:              <domain:roid>10-Fury</domain:roid>
S:              <domain:status s="inactive"/>
S:              <domain:status s="pendingDelete"/>
S:              <domain:status s="serverHold"/>
S:              <domain:status s="serverRenewProhibited"/>
S:              <domain:status s="serverTransferProhibited"/>
S:              <domain:status s="serverUpdateProhibited"/>
S:              <domain:clID>AB002</domain:clID>
S:              <domain:crDate>2018-11-05T20:59:37.964Z</domain:crDate>
S:              <domain:upDate>2018-11-06T15:00:35.668Z</domain:upDate>
S:              <domain:exDate>2020-11-05T20:59:37.964Z</domain:exDate>
S:            </domain:infData>
S:        </resData>
S:        <extension>
S:          <rgp:infData>
S:            <rgp:rgpStatus s="redemptionPeriod"/>
S:          </rgp:infData>
S:          <fury-rgp:rgpInfo>
S:            <fury-rgp:rgpStatusEnd>2018-11-03T19:22:29.273Z</fury-rgp:rgpStatusEnd>
S:          </fury-rgp:rgpInfo>
S:        </extension>
S:        <trID>
S:          <svTRID>FURY-000000089052</svTRID>
S:        </trID>
S:    </response>
S:</epp>
```

Fury 2.0 EPP Extension

The `fury-2.0.xsd` custom extension is designed to use generic properties to enable specific Registry functionality including:

- additional error messaging
- contact's preferred language
- privacy

When placing EPP requests using `fury-2.0.xsd` properties, values can be submitted in either uppercase or lowercase characters but the response will always be in uppercase letters.

As a custom extension, `fury-2.0.xsd` is written in compliance with **RFC 5730**.

For Fury 2.0 EPP examples, see "EPP Examples using Fury 2.0" on page 171.

Note: To access the functionality provided by the Fury 2.0 extension, the fury-2.0 `<extURI>` element must be included within the `<svcExtension>` of the login request.

Secondary Error Codes

`fury-2.0.xsd` provides additional error information using a numeric `<ciraCode>` and descriptive `<reason>` value when any EPP command returns an error response. This assists the Registry support team in diagnosing Registrar error conditions.

Secondary Error Code Example

```
S:<?xml version="1.0" encoding="UTF-8" standalone="no"?>
S:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:fury="urn:ietf:params:xml:ns:fury-
2.0">
S:    <response>
S:        <result code="2005">
S:            <msg>Parameter value syntax error</msg>
S:            <extValue>
S:                <value>
S:                    <fury:ciraCode>8001</fury:ciraCode>
S:                </value>
S:                <reason>Invalid domain name format.</reason>
S:            </extValue>
S:        </result>
S:        <trID>
S:            <svTRID></svTRID>
S:        </trID>
S:    </response>
S:</epp>
```

Language Properties

In EPP requests using `fury-2.0.xsd`, language properties are defined using the fury:key `LANGUAGE`.

Valid language properties include:

- `EN` - English
- `FR` - French

Language properties must be specified in a Contact Create request.

Contact Update Request

To modify properties, use `<fury:add>` and `<fury:rem>` elements.

Privacy Properties

Domain Create Request

In EPP requests using `fury-2.0.xsd`, privacy properties are defined using the fury:key `PRIVACY`.

Domain Update Request

Modifying privacy properties is subject to the following restrictions:

- Privacy values cannot be removed.

Reseller Name Property

In EPP requests using `fury-2.0.xsd`, the reseller name property is defined using the fury:key `RESELLER_NAME`.

The reseller name property can be specified in a Domain Create or Domain Update request. This name will be cleared on transfer of a domain between Sponsoring Registrars.

Property Details

The `fury-2.0.xsd` custom extension also provides a new set of commands that allow you to query the details of configured properties.

Request All Properties

This request allows you to query which properties are currently configured in the Registry.

Request Property Details

This request allows you to determine the values of specific properties that are currently configured in the Registry.

Request Localized Versions of Values for Properties

This request allows you to query the localized versions of values of specific properties that are currently configured in the Registry. In the following example, retrieve the French versions of the values.

Removing Property Values

You can submit an EPP Contact Update request that calls for the removal of all values of a particular property. If successful, this request will remove the property and all its values from the Contact.

Note: The `fury:rem` command is always performed before the `fury:add` command.

EPP Code Examples

Login

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0
     epp-1.0.xsd">
  <command>
    <login>
      <clID>user_epp</clID>
      <pw>password</pw>
      <options><version>1.0</version>
        <lang>en</lang></options>
      <svcs>
        <objURI>urn:ietf:params:xml:ns:epp-1.0</objURI>
        <objURI>urn:ietf:params:xml:ns:domain-1.0</objURI>
        <objURI>urn:ietf:params:xml:ns:host-1.0</objURI>
        <objURI>urn:ietf:params:xml:ns:contact-1.0</objURI>
        <svcExtension>
          <extURI>urn:ietf:params:xml:ns:fury-rgp-1.0</extURI>
         <extURI>urn:ietf:params:xml:ns:fury-2.0</extURI>
          <extURI>urn:ietf:params:xml:ns:idn-1.0</extURI>
          <extURI>urn:ietf:params:xml:ns:secDNS-1.1</extURI>
          <extURI>urn:ietf:params:xml:ns:launch-1.0</extURI>
          <extURI>urn:ietf:params:xml:ns:mark-1.0</extURI>
          <extURI>urn:ietf:params:xml:ns:signedMark-1.0</extURI>
          <extURI>http://www.w3.org/2000/09/xmldsig#</extURI>
          <extURI>urn:ietf:params:xml:ns:rgp-1.0</extURI>
          <extURI>urn:ietf:params:xml:ns:fee-0.11</extURI>
```

```
        </svcExtension>
      </svcs>
    </login>
    <clTRID>ABC-54321</clTRID>
  </command>
</epp>
```

Logout

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
    <command>
        <logout />
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Check

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <check>
            <domain:check xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                <domain:name>domain.example</domain:name>
                <domain:name>otherdomain.example</domain:name>
            </domain:check>
        </check>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Create (simple)

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
        <create>
            <domain:create xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                <domain:name>testdomain5.example</domain:name>
                <domain:registrant>testcontact1</domain:registrant>
                <domain:contact type="admin">testadmin1</domain:contact>
                <domain:contact type="tech">testtech1</domain:contact>
                <domain:authInfo>
                    <domain:pw>password</domain:pw>
                </domain:authInfo>
            </domain:create>
       </create>
       <clTRID>ABC-12345</clTRID>
   </command>
</epp>
```

Domain Create (full)

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
        <create>
               <domain:create xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
               <domain:name>testdomain4.example</domain:name>
               <domain:period unit="y">2</domain:period>
```

```
                <domain:ns>
                    <domain:hostObj>ns2.testdomain3.example</domain:hostObj>
                    <domain:hostObj>ns3.testdomain3.example</domain:hostObj>
                </domain:ns>
                <domain:registrant>testcontact1</domain:registrant>
                <domain:contact type="admin">testcontact1</domain:contact>
                <domain:contact type="tech">testcontact1</domain:contact>
                <domain:contact type="billing">testcontact1</domain:contact>
                <domain:authInfo>
                    <domain:pw>password</domain:pw>
                </domain:authInfo>
                </domain:create>
                </create>
        <extension>
                <fury:create xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
                <fury:properties>
                        <fury:property>
                                <fury:key>PRIVACY</fury:key>
                                <fury:value>PRIVATE</fury:value>
                        </fury:property>
                </fury:properties>
                </fury:create>
        </extension>
        <clTRID>ABC-12345</clTRID>
        </command>
</epp>
```

Domain Info

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <info>
            <domain:info xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                <domain:name>testdomain3.example</domain:name>
                <domain:authInfo>
                    <domain:pw>password</domain:pw>
                </domain:authInfo>
            </domain:info>
        </info>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Update

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
        <command>
                <update>
                        <domain:update xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                            <domain:name>testdomain3.example</domain:name>
                            <domain:add>
                            <domain:ns>
                                <domain:hostObj>ns1.testdomain3.example</domain:hostObj>
                                <domain:hostObj>ns3.testdomain3.example</domain:hostObj>
                            </domain:ns>
                            <domain:contact type="tech">testcontact1</domain:contact>
                            <domain:status s="clientDeleteProhibited"/>
                            </domain:add>
                            <domain:chg>
                            <domain:authInfo>
```

```
                                <domain:pw>password2</domain:pw>
                            </domain:authInfo>
                            </domain:chg>
                        </domain:update>
                    </update>
                    <extension>
                            <fury:update xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
                            <fury:add>
                                    <fury:properties>
                                            <fury:property>
                                                    <fury:key>PRIVACY</fury:key>
                                                    <fury:value>PUBLIC</fury:value>
                                            </fury:property>
                                    </fury:properties>
                            </fury:add>
                            <fury:rem>
                                    <fury:properties>
                                            <fury:property>
                                                    <fury:key>PRIVACY</fury:key>
                                                    <fury:value>PRIVATE</fury:value>
                                            </fury:property>
                                    </fury:properties>
                            </fury:rem>
                    </fury:update>
                    </extension>
                    <clTRID>ABC-12345</clTRID>
            </command>
</epp>
```

Domain Restore Request

```
<?xml version='1.0' encoding='UTF-8'?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
      <update>
         <domain:update xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
            <domain:name>testdomain3.example</domain:name>
            <domain:chg/>
         </domain:update>
      </update>
      <extension>
         <rgp:update xmlns:rgp="urn:ietf:params:xml:ns:rgp-1.0">
            <rgp:restore op="request"/>
         </rgp:update>
      </extension>
      <clTRID>ABC-12345</clTRID>
   </command>
</epp>
```

Domain Restore Report

```
<?xml version='1.0' encoding='UTF-8'?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
      <update>
         <domain:update xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
            <domain:name>testdomain3.example</domain:name>
            <domain:chg/>
         </domain:update>
      </update>
      <extension>
```

```
         <rgp:update xmlns:rgp="urn:ietf:params:xml:ns:rgp-1.0">
            <rgp:restore op="report">
                <rgp:report>
                   <rgp:preData>Pre-delete registration data goes here.   Both XML and
free text are allowed.</rgp:preData>
                    <rgp:postData>Post-restore registration data goes here.   Both XML
and free text are allowed.</rgp:postData>
                    <rgp:delTime>2003-07-10T22:00:00.0Z</rgp:delTime>
                    <rgp:resTime>2003-07-20T22:00:00.0Z</rgp:resTime>
                    <rgp:resReason>Registrant error.</rgp:resReason>
                    <rgp:statement>This registrar has not restored the   Registered
Name in order to assume the rights to use or sell the Registered Name for itself or
for any third party.</rgp:statement>
                    <rgp:statement>The information in this report is true to best of
this registrar's knowledge, and this registrar acknowledges that intentionally sup-
plying  false information in this report shall constitute an incurable material breach
of the  Registry-Registrar Agreement.</rgp:statement>
                    <rgp:other>Supporting information goes  here.</rgp:other>
                </rgp:report>
            </rgp:restore>
         </rgp:update>
      </extension>
      <clTRID>ABC-12345</clTRID>
   </command>
</epp>
```

Domain Delete

```
<?xml version='1.0' encoding='UTF-8'?>
<epp xmlns='urn:ietf:params:xml:ns:epp-1.0'>
    <command>
        <delete>
            <domain:delete xmlns:domain='urn:ietf:params:xml:ns:domain-1.0'>
                <domain:name>testdomain2.example</domain:name>
            </domain:delete>
        </delete>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Renew

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <renew>
            <domain:renew xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                <domain:name> testdomain1.example</domain:name>
                <domain:curExpDate>2017-08-05</domain:curExpDate>
                <domain:period unit="y">1</domain:period>
            </domain:renew>
        </renew>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Transfer Request

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <transfer op="request">
            <domain:transfer xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
```

```
                <domain:name>testdomain3.example</domain:name>
                <domain:authInfo>
                    <domain:pw>password</domain:pw>
                </domain:authInfo>
            </domain:transfer>
        </transfer>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Transfer Approve

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns='urn:ietf:params:xml:ns:epp-1.0'>
   <command>
      <transfer op='approve'>
         <domain:transfer xmlns:domain='urn:ietf:params:xml:ns:domain-1.0'>
         <domain:name>domain.example</domain:name>
         </domain:transfer>
      </transfer>
      <clTRID>ABC-12345</clTRID>
   </command>
</epp>
```

Domain Transfer Reject

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns='urn:ietf:params:xml:ns:epp-1.0'>
   <command>
      <transfer op='reject'>
         <domain:transfer xmlns:domain='urn:ietf:params:xml:ns:domain-1.0'>
        <domain:name>domain.example</domain:name>
        </domain:transfer>
      </transfer>
      <clTRID>ABC-12345</clTRID>
   </command>
</epp>
```

Domain Transfer Cancel

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns='urn:ietf:params:xml:ns:epp-1.0'>
   <command>
      <transfer op='cancel'>
         <domain:transfer xmlns:domain='urn:ietf:params:xml:ns:domain-1.0'>
         <domain:name>domain.example</domain:name>
         </domain:transfer>
      </transfer>
      <clTRID>ABC-12345</clTRID>
   </command>
</epp>
```

Domain Transfer Query

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0" xmlns:x-
si="http://www.w3.org/2001/XMLSchema-instance" xsi:s-
chemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <transfer op="query">
      <domain:transfer xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
           xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0 domain-1.0.xsd">
        <domain:name>domain.example</domain:name>
```

```
        <domain:authInfo>
          <domain:pw>password</domain:pw>
        </domain:authInfo>
      </domain:transfer>
    </transfer>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Contact Check

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <check>
            <contact:check xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
                <contact:id>testcontact1</contact:id>
                <contact:id>testcontact2</contact:id>
            </contact:check>
        </check>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Contact Create

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <create>
            <contact:create xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
                <contact:id>testcontact1</contact:id>
                <contact:postalInfo type="loc">
                    <contact:name>John Doe</contact:name>
                    <contact:org>Test Organization</contact:org>
                    <contact:addr>
                        <contact:street>123 Main Street</contact:street>
                        <contact:city>Ottawa</contact:city>
                        <contact:sp>ON</contact:sp>
                        <contact:pc>K1R 7S8</contact:pc>
                        <contact:cc>CA</contact:cc>
                    </contact:addr>
                </contact:postalInfo>
                <contact:voice>+1.6134375335</contact:voice>
                <contact:fax>+1.6134375366</contact:fax>
                <contact:email>jdoe@example.com</contact:email>
                <contact:authInfo>
                    <contact:pw>password</contact:pw>
                </contact:authInfo>
            </contact:create>
        </create>
       <extension>
               <fury:create xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
               <fury:properties>
                       <fury:property>
                              <fury:key>LANGUAGE</fury:key>
                              <fury:value>EN</fury:value>
                       </fury:property>
               </fury:properties>
               </fury:create>
      </extension>
      <clTRID>ABC-12345</clTRID>
</command>
```

```
</epp>
```

Contact Info

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <info>
            <contact:info xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
                <contact:id>testcontact1</contact:id>
            </contact:info>
        </info>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Contact Update

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <update>
            <contact:update xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
                <contact:id>testcontact1</contact:id>
                <contact:rem>
                     <contact:status s="clientDeleteProhibited"/>
                </contact:rem>
                <contact:chg>
                    <contact:email>new@email.com</contact:email>
                </contact:chg>
            </contact:update>
        </update>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Contact Delete

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <delete>
            <contact:delete xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
                <contact:id>testcontact1</contact:id>
            </contact:delete>
        </delete>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Host Check

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <check>
            <host:check xmlns:host="urn:ietf:params:xml:ns:host-1.0">
                <host:name>ns1.testdomain1.example</host:name>
                <host:name>ns2.testdomain1.example</host:name>
            </host:check>
        </check>
        <clTRID>ABC-12345</clTRID>
```

```
    </command>
</epp>
```

Host Create

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <create>
            <host:create xmlns:host="urn:ietf:params:xml:ns:host-1.0">
                <host:name>ns4.testdomain1.example</host:name>
                <host:addr ip="v4">192.0.2.2</host:addr>
                <host:addr ip="v4">192.0.2.29</host:addr>
                <host:addr ip="v6">1080:0:0:0:8:800:200C:417A</host:addr>
            </host:create>
        </create>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Host Info

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <info>
            <host:info xmlns:host="urn:ietf:params:xml:ns:host-1.0">
                <host:name>ns1.testdomain3.example</host:name>
            </host:info>
        </info>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Host Update

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <update>
            <host:update xmlns:host="urn:ietf:params:xml:ns:host-1.0">
                <host:name>ns1.testdomain3.example</host:name>
                <host:add>
                <host:addr ip="v4">192.0.2.2</host:addr>
                <host:status s="clientUpdateProhibited"/>
                </host:add>
                <host:rem>
                    <host:addr ip="v4">162.210.102.50</host:addr>
                </host:rem>
            </host:update>
        </update>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Host Delete

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <delete>
            <host:delete xmlns:host="urn:ietf:params:xml:ns:host-1.0">
                <host:name>ns3.testdomain3.example</host:name>
            </host:delete>
```

```
        </delete>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Retrieve Poll Messages

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <poll op="req"/>
        <clTRID>ABC-12353</clTRID>
    </command>
</epp>
```

Acknowledge Poll Messages

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
      <poll op="ack" msgID="16533" />
      <clTRID>ABC-12345</clTRID>
   </command>
</epp>
```

EPP Examples using Fee Extension

Domain Check (fee 0.9)

```
<?xml version="1.0" encoding="utf-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <check>
            <domain:check xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                <domain:name>example.com</domain:name>
                <domain:name>example.net</domain:name>
                <domain:name>example.org</domain:name>
            </domain:check>
        </check>
        <extension>
            <fee:check xmlns:fee="urn:ietf:params:xml:ns:fee-0.9">
                <fee:object objURI="urn:ietf:params:xml:ns:domain-1.0">
                    <fee:objID element="name">example.com</fee:objID>
                    <fee:currency>NZD</fee:currency>
                    <fee:command>create</fee:command>
                    <fee:period unit="y">1</fee:period>
                </fee:object>
                <fee:object>
                    <fee:objID>example.net</fee:objID>
                    <fee:currency>EUR</fee:currency>
                    <fee:command>create</fee:command>
                    <fee:period unit="y">2</fee:period>
                </fee:object>
                <fee:object>
                    <fee:objID>example.org</fee:objID>
                    <fee:currency>NZD</fee:currency>
                    <fee:command>transfer</fee:command>
                </fee:object>
                <fee:object>
                    <fee:objID>example.fury</fee:objID>
                    <fee:command>restore</fee:command>
                </fee:object>
            </fee:check>
```

```
        </extension>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Check (fee 0.11)

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <check>
            <domain:check xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                <domain:name>testdomain1.example</domain:name>
                <domain:name>testdomain2.example</domain:name>
            </domain:check>
        </check>
        <extension>
            <fee:check xmlns:fee="urn:ietf:params:xml:ns:fee-0.11">
                <fee:command>create</fee:command>
                <fee:currency>NZD</fee:currency>
                <fee:period unit="y">2</fee:period>
                <fee:class>standard</fee:class>
            </fee:check>
        </extension>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Create (fee 0.9)

```
<?xml version="1.0" encoding="utf-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
    <command>
        <create>
            <domain:create
            xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
             <domain:name>example.com</domain:name>
             <domain:period unit="y">2</domain:period>
             <domain:ns>
                 <domain:hostObj>ns1.example.net</domain:hostObj>
                 <domain:hostObj>ns2.example.net</domain:hostObj>
             </domain:ns>
             <domain:registrant>jd1234</domain:registrant>
             <domain:contact type="admin">sh8013</domain:contact>
             <domain:contact type="tech">sh8013</domain:contact>
             <domain:authInfo>
                 <domain:pw>2fooBAR</domain:pw>
             </domain:authInfo>
            </domain:create>
        </create>
        <extension>
            <fee:create xmlns:fee="urn:ietf:params:xml:ns:fee-0.9">
                <fee:currency>NZD</fee:currency>
                <fee:fee>5.00</fee:fee>
            </fee:create>
        </extension>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Create (fee 0.11)

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0
     epp-1.0.xsd">
  <command>
    <create>
      <domain:create
       xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
        <domain:name>testdomain3.example</domain:name>
        <domain:period unit="y">2</domain:period>
        <domain:registrant>fulladdr3</domain:registrant>
        <domain:contact type="admin">fulladdr3</domain:contact>
        <domain:authInfo>
          <domain:pw>password</domain:pw>
        </domain:authInfo>
      </domain:create>
    </create>
    <extension>
       <fee:create xmlns:fee="urn:ietf:params:xml:ns:fee-0.11">
          <fee:currency>NZD</fee:currency>
          <fee:fee>16.00</fee:fee>
       </fee:create>
    </extension>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

EPP Examples using IDN

Domain Create

```
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
        <create>
            <domain:create xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                <domain:name>xn--domain-with-mcron-z5b.co.nz</domain:name>
                <domain:period unit='y'>1</domain:period>
                <domain:registrant>testcontact1</domain:registrant>
                <domain:contact type="admin">testcontact1</domain:contact>
                <domain:contact type="tech">testcontact1</domain:contact>
                <domain:authInfo>
                    <domain:pw>password</domain:pw>
                </domain:authInfo>
            </domain:create>
       </create>
      <extension>
          <idn:data xmlns:idn='urn:ietf:params:xml:ns:idn-1.0'>
             <idn:table>Latn</idn:table>
             <idn:uname>domain-with-mācron.co.nz</idn:uname>
           </idn:data>
      </extension>
  </command>
</epp>
```

EPP Examples using DNSSEC

Domain Create

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
        <create>
            <domain:create xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
                <domain:name>dnsdomain.example</domain:name>
                <domain:period unit='y'>1</domain:period>
                <domain:registrant>testcontact1</domain:registrant>
                <domain:contact type="admin">testcontact1</domain:contact>
                <domain:authInfo>
                    <domain:pw>password</domain:pw>
                </domain:authInfo>
            </domain:create>
       </create>
     <extension>
          <secDNS:create
                  xmlns:secDNS="urn:ietf:params:xml:ns:secDNS-1.1">
             <secDNS:dsData>
                <secDNS:keyTag>12345</secDNS:keyTag>
                <secDNS:alg>3</secDNS:alg>
                <secDNS:digestType>1</secDNS:digestType>
                <secDNS:di-
gest>8cdb09364147aed879d12c68d615f98af5900b72</secDNS:digest>
            </secDNS:dsData>
        </secDNS:create>
   </extension>
   <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Domain Update

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
     <update>
        <domain:update xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
            <domain:name>dnsdomain.example</domain:name>
        </domain:update>
     </update>
   <extension>
      <secDNS:update
            xmlns:secDNS="urn:ietf:params:xml:ns:secDNS-1.1">
            <secDNS:rem>
             <secDNS:dsData>
                <secDNS:keyTag>12345</secDNS:keyTag>
                <secDNS:alg>3</secDNS:alg>
                <secDNS:digestType>1</secDNS:digestType>
                <secDNS:digest>8cdb09364147aed879d12c68d615f98af5900b72
                </secDNS:digest>
             </secDNS:dsData>
          <secDNS:rem>
          <secDNS:add>
            <secDNS:dsData>
                <secDNS:keyTag>123456</secDNS:keyTag>
                <secDNS:alg>3</secDNS:alg>
                <secDNS:digestType>1</secDNS:digestType>
                <secDNS:digest>8cdb09364147aed879d12c68d615f98af5900b72
```

```
                </secDNS:digest>
             </secDNS:dsData>
          </secDNS:add>
       </secDNS:update>
   </extension>
   <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

EPP Examples using Fury 2.0

Contact Create

Contact Create Example

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
      <create>
         <contact:create xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
            <contact:id>testcontact</contact:id>
            <contact:postalInfo type="loc">
               <contact:name>Foo Name</contact:name>
               <contact:org>Bar Org</contact:org>
               <contact:addr>
                  <contact:street>Line 1</contact:street>
                  <contact:street>Line 2</contact:street>
                  <contact:street>Line 3</contact:street>
                  <contact:city>Ottawa</contact:city>
                  <contact:sp>on</contact:sp>
                  <contact:pc>K1N4B3</contact:pc>
                  <contact:cc>ca</contact:cc>
               </contact:addr>
            </contact:postalInfo>
            <contact:voice x="1234">+1.7035555555</contact:voice>
            <contact:fax>+1.7035555556</contact:fax>
            <contact:email>jdoe@example.fury</contact:email>
            <contact:authInfo>
               <contact:pw>2fooBAR</contact:pw>
            </contact:authInfo>
         </contact:create>
      </create>
      <extension>
         <fury:create xmlns:fury="urn:ietf:params:xml:ns:fury-2.0" >
            <fury:properties>
                <fury:property>
                    <fury:key>LANGUAGE</fury:key>
                    <fury:value>EN</fury:value>
                </fury:property>
            </fury:properties>
         </fury:create>
      </extension>
      <clTRID>XYZ-98765</clTRID>
   </command>
</epp>
```

Contact Update

Contact Update Example - Changing a contact's language from French to English

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
```

```
      <update>
         <contact:update xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
            <contact:id>agreed</contact:id>
         </contact:update>
      </update>
      <extension>
         <fury:update xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
            <fury:add>
               <fury:properties>
                  <fury:property>
                     <fury:key>LANGUAGE</fury:key>
                     <fury:value>EN</fury:value>
                  </fury:property>
               </fury:properties>
            </fury:add>
            <fury:rem>
               <fury:properties>
                  <fury:property>
                     <fury:key>LANGUAGE</fury:key>
                     <fury:value>FR</fury:value>
                  </fury:property>
               </fury:properties>
           </fury:rem>
         </fury:update>
      </extension>
      <clTRID>ABC-12345</clTRID>
   </command>
</epp>
```

Domain Create

Domain Create Example - Creating a Public domain

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0
     epp-1.0.xsd">
    <command>
        <create>
            <domain:create
                    xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
                    xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
                <domain:name>example2.fury</domain:name>
                <domain:period unit="y">2</domain:period>
                <domain:registrant>newrant</domain:registrant>
                <domain:authInfo>
                    <domain:pw>2fooBAR</domain:pw>
                </domain:authInfo>
            </domain:create>
        </create>
        <extension>
            <fury:create xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
                <fury:properties>
                    <fury:property>
                        <fury:key>PRIVACY</fury:key>
                        <fury:value>PUBLIC</fury:value>
                    </fury:property>
                </fury:properties>
            </fury:create>
        </extension>
```

```
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Create Example - Creating a Public domain with a reseller

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0
     epp-1.0.xsd">
    <command>
        <create>
            <domain:create
                    xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
                    xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
                <domain:name>example2.fury</domain:name>
                <domain:period unit="y">2</domain:period>
                <domain:registrant>newrant</domain:registrant>
                <domain:authInfo>
                    <domain:pw>2fooBAR</domain:pw>
                </domain:authInfo>
            </domain:create>
        </create>
        <extension>
            <fury:create xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
                <fury:properties>
                    <fury:property>
                        <fury:key>PRIVACY</fury:key>
                        <fury:value>PUBLIC</fury:value>
                    </fury:property>
                    <fury:property>
                        <fury:key>RESELLER_NAME</fury:key>
                        <fury:value>ABC Reseller</fury:value>
                    </fury:property>
                </fury:properties>
            </fury:create>
        </extension>
        <clTRID>ABC-12345</clTRID>
    </command>
</epp>
```

Domain Update

Domain Update Example - Changing a domain's privacy from Private to Public

```
<?xml version="1.0" encoding="UTF-8"?><epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
<command>
    <update>
        <domain:update xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
            <domain:name>example3.fury</domain:name>
            <domain:chg>
                <domain:registrant>oldrant</domain:registrant>
            </domain:chg>
        </domain:update>
    </update>
    <extension>
        <fury:update xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
            <fury:add>
                <fury:properties>
                    <fury:property>
                        <fury:key>PRIVACY</fury:key>
```

```
                        <fury:value>PUBLIC</fury:value>
                    </fury:property>
                </fury:properties>
            </fury:add>
            <fury:rem>
                <fury:properties>
                    <fury:property>
                        <fury:key>PRIVACY</fury:key>
                        <fury:value>PRIVATE</fury:value>
                    </fury:property>
                </fury:properties>
            </fury:rem>
        </fury:update>
    </extension>
    <clTRID>ABC-12345</clTRID>
</command>
</epp>
```

Domain Update Example - Changing a domain's associated reseller

```
<?xml version="1.0" encoding="UTF-8"?><epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
<command>
    <update>
        <domain:update xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
            <domain:name>example3.fury</domain:name>
            <domain:chg>
                <domain:registrant>oldrant</domain:registrant>
            </domain:chg>
        </domain:update>
    </update>
    <extension>
        <fury:update xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
            <fury:add>
                <fury:properties>
                    <fury:property>
                        <fury:key>RESELLER_NAME</fury:key>
                        <fury:value>DEF RESELLER</fury:value>
                    </fury:property>
                </fury:properties>
            </fury:add>
            <fury:rem>
                <fury:properties>
                    <fury:property>
                        <fury:key>RESELLER_NAME</fury:key>
                        <fury:value>ABC RESELLER</fury:value>
                    </fury:property>
                </fury:properties>
            </fury:rem>
        </fury:update>
    </extension>
    <clTRID>ABC-12345</clTRID>
</command>
</epp>
```

Request All Properties

Request Example

```
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
  <extension>
    <fury:command xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
      <fury:info>
        <fury:properties>
```

```
        </fury:properties>
      </fury:info>
    </fury:command>
  </extension>
</epp>
```

Response Example

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <response>
      <result code="1000">
         <msg>Command completed successfully</msg>
      </result>
      <extension>
         <fury:response xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
            <fury:info>
               <fury:properties>
                  <fury:property>
                     <fury:key>PRIVACY</fury:key>
                  </fury:property>
                  <fury:property>
                     <fury:key>LANGUAGE</fury:key>
                  </fury:property>

               </fury:properties>
            </fury:info>
         </fury:response>
      </extension>
      <trID>
         <svTRID>54322-XYZ</svTRID>
      </trID>
   </response>
</epp>
```

Request Property Details

Request Example

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <extension>
      <fury:command xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
         <fury:info>
            <fury:properties>
               <fury:property>
                  <fury:key>PRIVACY</fury:key>
               </fury:property>
               <fury:property>
                  <fury:key>LANGUAGE</fury:key>
               </fury:property>
            </fury:properties>
         </fury:info>
      </fury:command>
   </extension>
</epp>
```

Response Example

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns:fury="urn:ietf:params:xml:ns:fury-2.0" >
    <response>
        <result code="1000">
            <msg>Command completed successfully</msg>
```

```
</result>
<extension>
    <fury:response>
        <fury:infData>
            <fury:properties>
                <fury:property>
                    <fury:key>PRIVACY</fury:key>
                    <fury:propertyValues>
                        <fury:propertyValue>
                            <fury:value>PUBLIC</fury:value>
                        </fury:propertyValue>
                        <fury:propertyValue>
                            <fury:value>PRIVATE</fury:value>
                        </fury:propertyValue>
                    </fury:propertyValues>
                    <fury:propertyAttributes>
                        <fury:propertyAttribute>
                            <fury:key>entitytype</fury:key>
                            <fury:value>domain</fury:value>
                        </fury:propertyAttribute>
                        <fury:propertyAttribute>
                            <fury:key>removable</fury:key>
                            <fury:value>false</fury:value>
                        </fury:propertyAttribute>
                        <fury:propertyAttribute>
                            <fury:key>propertytype</fury:key>
                            <fury:value>SINGLEENUM</fury:value>
                        </fury:propertyAttribute>
                        <fury:propertyAttribute>
                            <fury:key>updatable</fury:key>
                            <fury:value>true</fury:value>
                        </fury:propertyAttribute>
                    </fury:propertyAttributes>
                </fury:property>
                <fury:property>
                    <fury:key>LANGUAGE</fury:key>
                    <fury:propertyValues>
                        <fury:propertyValue>
                            <fury:value default="true">EN</fury:value>
                        </fury:propertyValue>
                        <fury:propertyValue>
                            <fury:value>FR</fury:value>
                        </fury:propertyValue>
                    </fury:propertyValues>
                    <fury:propertyAttributes>
                        <fury:propertyAttribute>
                            <fury:key>entitytype</fury:key>
                            <fury:value>contact</fury:value>
                        </fury:propertyAttribute>
                        <fury:propertyAttribute>
                            <fury:key>removable</fury:key>
                            <fury:value>false</fury:value>
                        </fury:propertyAttribute>
                        <fury:propertyAttribute>
                            <fury:key>propertytype</fury:key>
                            <fury:value>SINGLEENUM</fury:value>
                        </fury:propertyAttribute>
                        <fury:propertyAttribute>
                            <fury:key>updatable</fury:key>
                            <fury:value>true</fury:value>
                        </fury:propertyAttribute>
```

```
                            </fury:propertyAttributes>
                        </fury:property>
                    </fury:properties>
                </fury:infData>
            </fury:response>
        </extension>
        <trID>
            <svTRID></svTRID>
        </trID>
    </response>
</epp>
```

Request Localized Versions of Values for Properties

Request Example

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <extension>
      <fury:command xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
         <fury:info>
            <fury:language>fr</fury:language>
            <fury:properties>
               <fury:property>
                  <fury:key>LANGUAGE</fury:key>
               </fury:property>
            </fury:properties>
         </fury:info>
      </fury:command>
   </extension>
</epp>
```

Response Example

```
<?xml version="1.0" encoding="UTF-8"?>
<epp xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
    <response>
        <result code="1000">
            <msg>Command completed successfully</msg>
        </result>
        <extension>
            <fury:response>
                <fury:infData>
                    <fury:language>fr</fury:language>
                    <fury:properties>
                        <fury:property>
                            <fury:key>LANGUAGE</fury:key>
                            <fury:localizedKey>La langue</fury:localizedKey>
                            <fury:propertyValues>
                                <fury:propertyValue>
                                    <fury:value default="true">EN</fury:value>
                                    <fury:localizedValue>Anglais</fury:localizedValue>
                                </fury:propertyValue>
                                <fury:propertyValue>
                                    <fury:value>FR</fury:value>
                                    <fury:-
localizedValue>Français</fury:localizedValue>
                                </fury:propertyValue>
                            </fury:propertyValues>
                            <fury:propertyAttributes>
                                <fury:propertyAttribute>
                                    <fury:key>entitytype</fury:key>
                                    <fury:value>contact</fury:value>
```

```
                                    </fury:propertyAttribute>
                                    <fury:propertyAttribute>
                                        <fury:key>removable</fury:key>
                                        <fury:value>false</fury:value>
                                    </fury:propertyAttribute>
                                    <fury:propertyAttribute>
                                        <fury:key>propertytype</fury:key>
                                        <fury:value>SINGLEENUM</fury:value>
                                    </fury:propertyAttribute>
                                    <fury:propertyAttribute>
                                        <fury:key>updatable</fury:key>
                                        <fury:value>true</fury:value>
                                    </fury:propertyAttribute>
                                </fury:propertyAttributes>
                            </fury:property>
                        </fury:properties>
                    </fury:infData>
                </fury:response>
            </extension>
            <trID>
                <svTRID>CIRA-000000006501-0000000004</svTRID>
            </trID>
        </response>
</epp>
```

Removing Property Values

Request Example

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
   <command>
      <update>
         <contact:update xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
            <contact:id>contactid-1</contact:id>
            <contact:chg>
               <contact:postalInfo type="loc">
                  <contact:name>contact-name</contact:name>
                  <contact:org>test</contact:org>
                  <contact:addr>
                     <contact:street>124 Example Dr.</contact:street>
                     <contact:street>Suite 200</contact:street>
                     <contact:city>Dulles</contact:city>
                     <contact:sp>VA</contact:sp>
                     <contact:pc>20166-6503</contact:pc>
                     <contact:cc>US</contact:cc>
                  </contact:addr>
               </contact:postalInfo>
               <contact:email>hello@canada.ca</contact:email>
            </contact:chg>
         </contact:update>
      </update>
      <clTRID>ABC-12345</clTRID>
   </command>
   <extension>
      <fury:update xmlns:fury="urn:ietf:params:xml:ns:fury-2.0">
         <fury:add>
            <fury:properties>
               <fury:property>
                  <fury:key>LANGUAGE</fury:key>
                  <fury:value>EN</fury:value>
               </fury:property>
```

```
            </fury:properties>
         </fury:add>
         <fury:rem>
            <fury:properties>
               <fury:property>
                  <fury:key>LANGUAGE</fury:key>
                  <fury:remAll>true</fury:remAll>
               </fury:property>
            </fury:properties>
         </fury:rem>
      </fury:update>
   </extension>
</epp>
```

Searchable WHOIS

IRS supports Searchable WHOIS queries to access information about domain names in the hosted registry. IRS's Advanced Search functionality allows you to perform partial searches, exact matches, and Boolean searches on multiple criteria in order to filter your search results.

Special Notes on Performing Searches

1. If you want to have access to Searchable WHOIS in IRS, you will need to contact your registry system administrator to obtain the appropriate account identification and security credentials.

Limitations

1. Searchable WHOIS in IRS is case-sensitive. Please ensure that all queries use the correct case. For example, to find "123 Main Street", you must configure the query as "Main Street" with capitalization matching the result. Configuring the query as "main street" would not find the correct domain name.
2. To properly implement a domain name exclusion (using NOT EQUAL), you must include the entire domain name. For example, to exclude the domain "dnssec.nz', you must configure the query as "DOES NOT EQUAL dnssec.nz". Configuring the query as "DOES NOT EQUAL dnssec" would not exclude the domain name.

To search for a domain:

1. In the IRS portal, click the **Domains** tab.
2. Below the **Search** field, click **Advanced**.
3. In the first search criteria pull-down menu, select the type of criteria to be selected from one of the following:
    - Domain Name
    - Domain Status
    - Domain Life Cycle State
    - Domain Expiry Date
    - Domain Create Date
    - Domain Modified Date
    - Domain AutoRenew Retry
    - Domain Privacy
    - Domain Reseller Name
    - Domain Registry Lock
    - Domain Compliance Lock
    - Domain Last Modified By
    - Contact Name

- `Contact Type`
- `Contact ID`
- `Contact Address`
- `Contact Country`
- `Contact City`
- `Contact Postal Code`
- `Contact Province/State/Region`
- `Contact Email`
- `Contact Organization`
- `Contact Phone Number`
- `Contact Status`
- `Contact Language`
- `Host Name`
- `Host IPv4`
- `Host IPv6`
- `Host Status`
- `Registrar Name`
- `Registrar ID`
- `Registrar IANA ID`

Note: Some of the search criteria listed above may not be displayed if the feature has not been enabled.

Search criteria may also not be available if there is only one value configured for that setting in the Registry.

4. In the operator field, select how the criteria will be applied to the query from one of the following:
   - `equal`
   - `not equal`
   - `contains` (does not apply for Contact ID and Registrar ID searches; not used for date-based queries)
   - `less` (only used for date-based queries)
   - `greater` (only used for date-based queries)
   - `less or equal` (only used for date-based queries)
   - `greater or equal` (only used for date-based queries)
5. Depending on the criteria type to be used in your search, select the specific criteria in the pull-down menu or type the alphanumeric characters in the criteria string field for which you want your WHOIS query to search. Partial text searches are supported.

   For example, you could compose an Advanced Search to search for `Contact Name contains "Jo"` which could return results for domains that have a contact named Joe, Joseph, or Jocelyn.

Note: For date elements, IRS provides a graphical date selection tool to allow you to select a specific date for your search criteria. You can also type a date value into the criteria text field but it must be in the numerical format of `yyyy-mm-dd` (for example, 2016-10-31) in order to be valid. To choose a date, navigate to the year and month that you want to configure as your

search criteria and click the specific date to be selected.

6. To add additional search criteria to the WHOIS query, click **Add rule**.
7. In the top left corner of the query builder, select the Boolean operator by which the search criteria will be associated from either **AND** or **OR**.

   Note: IRS's query builder currently only supports one Boolean operator to associate all criteria in the query. Selecting **AND** will result in all criteria being used in the query while selecting **OR** will result in any of the criteria being used in the query.

8. When your query is completed, click **Search**.

A successful search on a domain will return the following information:

- `Domain Name`
- `Domain Status`
- `Registrant ID`
- `RGP Stage of Life`
- `When RGP Stage of Life Ends`
- `Tag Name` (of all tags that are associated with the domain)

Following a successful search, you can click on the domain name of any of the returned domains to display the **Edit Domain** page and access additional information about the domain including current statuses, all associated name servers, and all associated contacts.

The search capabilities of the IRS portal will also allow registered users of Searchable WHOIS to query for all record types including Domains, Contacts, Hosts, and others. Simply select the tab that you are interested in and perform a **Basic** or **Advanced Search** as required.

Example

You could compose a WHOIS query that would search for `Contact Name contains "Jo"` **AND** `Contact Type equal REGISTRANT` **AND** `Host IPv4 equal 111.111.111.111` that would only return those domains that met all three criteria. Another example could be `Contact Name contains "Jo"` **OR** `Contact Type equal REGISTRANT` **OR** `Host IPv4 equal 111.111.111.111` that would return domains that met any one or more of the criteria. You cannot use **AND** and **OR** in the same query.

Glossary

A

A-label

The ASCII-Compatible Encoded (ACE) representation of an internationalized domain name that always begins with the prefix "xn--". A-labels use Punycode transcription.

Administrative Contact

This is the main point of contact for the management of a domain name, who has control over the domain name. The Administrative Contact can either be the Registrant of the domain name or someone authorized by the Registrant.

AS Numbers

Autonomous System (AS) numbers are globally unique identifiers for network operators and are used to allow these operators to exchange dynamic routing information. Each autonomous system is a group of Internet connected devices having a single clearly defined routing policy. ICANN coordinates AS numbers as part of the IANA functions.

Authorization Code

An Authorization Code (or auth code) is a unique code provided to a Registrant of a domain name by their Registrar. The auth code is required to perform some management tasks for the domain name such as transferring the domain name to another Registrar.

B

Billing Contact

Also known as the Finance Contact, this is the individual or organization responsible for payment of fees related to the domain name and will monitor period activity, account balances, and account status.

Bundle

A collection of multiple domain names that are grouped together based on a criteria determined by the Registry.

C

ccTLD

Country Code Top Level Domain (ccTLD) are two letter domains, such as .uk (United Kingdom), .de (Germany) and .jp (Japan). They are called country code top level domains (ccTLDs) and

correspond to a country, territory, or other geographic location. The rules and policies for registering domain names in the ccTLDs vary significantly and ccTLD registries limit use of the ccTLD to citizens of the corresponding country.

D

DNS

Catalogs every domain and IP address on the Internet, including registration information, as well as their relation to other domains and web hosts. The system is spread over thousands of computers on the Internet that contain information on the connection between domain names and IP addresses. These computers are known as name servers. The DNS is the central database of the Internet.

DNSSEC

DNSSEC (Domain Name System Security Extensions) is a suite of published IETF RFCs that define the standards for securing information provided through DNS by adding digital signatures to DNS data.

E

EPP

EPP (Extensible Provisioning Protocol) is an industry standard computer communications protocol used by Internet domain name registry systems.

G

gTLDs

Generic top-level domains (gTLDs) are a category of top-level domains that are maintained by the Internet Assigned Numbers Authority (IANA) for use in the Domain Name System of the Internet. They are referred as generic domains to distinguish them from country-specific top-level domains (such as .ca).

I

IANA

Internet Assigned Numbers Authority (IANA) functions have been performed by ICANN on behalf of the global Internet community since 1998. The IANA functions have historically included: the maintenance of the registry of technical Internet protocol parameters; the administration of certain responsibilities associated with Internet DNS root zone and the allocation of Internet numbering resources.

ICANN

The Internet Corporation for Assigned Names and Numbers (ICANN) is an internationally organized, non-profit corporation that has responsibility for Internet Protocol (IP) address space allocation, protocol identifier assignment, generic (gTLD) and country code (ccTLD) Top-Level Domain name system management, and root server system management functions. Originally, the Internet Assigned Numbers Authority (IANA) and other entities performed these services under U.S. Government contract. ICANN now performs the IANA function. As a private-public partnership, ICANN is dedicated to preserving the operational stability of the Internet; to promoting competition; to achieving broad representation of global Internet communities; and to developing policy appropriate to its mission through bottom-up, consensus-based processes.

IDN

An IDN or Internationalized Domain Name is a domain name that contains letters beyond the conventional a-z, 0-9 and hyphens. The objective of using IDNs is to improve international accessibility and the functioning of the Internet by allowing users to register domain names with a wider range of characters. This supports domain names that are more natural in any language other than English.

IETF

The Internet Engineering Task Force (IETF) is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet's architecture and the smooth operation of the Internet itself.

IP

Internet Protocol (IP) is the communications protocol underlying the Internet that allows networks of devices to communicate over a variety of physical links. Each device or service on the Internet has at least one IP address that uniquely identifies it from other devices or services on the Internet. An IP address is the numerical address and DNS naming uses user-friendly names to locate the devices and services.

IPv4

A unique 32-bit identifier that consists of a set of four numbers in the range of 0 to 255, separated by periods. For example, 64.230.164.58.

IPv6

A unique 128-bit identifier that consists of eight groups of four hexadecimal digits, separated by colons. For example, 2001:db8:0000:0000:0000:0000:0000:5b0f.

R

Registrant

The entity that has the authority to use and manage a domain name.

Registrar

A domain name registrar is an organization or commercial entity that manages the reservation of internet domain names. A domain name registrar must be accredited by a generic top-level domain (gTLD) registry or a country code top-level domain (ccTLD) registry. Registrar. (n.d.). In Wikipedia. Retrieved November 3, 2017, from https://en.wikipedia.org/wiki/Domain_name_registrar

Registry

The Registry is the authoritative, master database of all domain names registered in each Top Level Domain. The registry operator keeps the master database and also generates the "zone file" which allows computers to route Internet traffic to and from top-level domains anywhere in the world. Internet users don't interact directly with the registry operator; users can register names in TLDs including .biz, .com, .info, .net, .name, .org by using an ICANN-Accredited Registrar.

Repertoire

Unicode character sets based on language that are used for IDNs (Internationalized Domain Names).

RFCs

Requests for Comments (RFCs) are a series of Internet engineering documents describing Internet standards. RFCs originate from, and are published by, the IETF.

RIRs

Regional Internet Registry. There are currently five RIRs: AfriNIC, APNIC, ARIN, LACNIC and RIPE NCC. These non-profit organizations are responsible for distributing and managing IP addresses on a regional level to Internet service providers and local registries.

Root Server

Root servers contain the IP addresses of all the TLD registries – both the global registries such as .com, .org, etc. and the 244 country-specific registries such as .fr (France), .cn (China), etc. This is critical information for it it is not 100% correct or if it is ambiguous, it might not be possible to locate a key registry on the Internet. In DNS terms, the information must be unique and authentic.

T

Tag

An identifier for one or more domain names that can be used to indicate prices that are different from the default values, to block specific domain names, or simply to associate multiple domain names with each other.

Technical Contact

A technical contact is an individual identified as a contact for technical information-related administration of a registered domain name.

TLD

Top-level Domains (TLDs) are the names at the top of the DNS naming hierarchy. They appear in domain names as the string of letters following the last (rightmost) ".", such as "net" in "www.example.net". The administrator for a TLD controls what second-level names are recognized in that TLD. The administrators of the "root domain" or "root zone" control what TLDs are recognized by the DNS. Commonly used TLDs include .com, .net, .edu, .jp, .de, etc.

U

U-label

The Unicode label version of a domain name which can be used for internationalized domain names (IDNs). U-labels allow for language-specific scripts or alphabets (such as Arabic, Chinese, or characters with diacritics or ligatures) in domain names encoded in multi-byte Unicode.

Unicode

A standard that provides a unique number for every character. Unicode provides a uniform methodology for storing, searching, and interchanging text in any language.A standard that provides a unique number for every character. Unicode provides a uniform methodology for storing, searching, and interchanging text in any language.

V

Variant

A version of a domain name that is related to the base canonical name of an IDN bundle. For example, sàmplé.fury would be a variant of sample.fury.

W

WHOIS

WHOIS is an Internet protocol that is used to query databases to obtain information about domain names, Registrars, and name servers (or IP addresses).

Z

Zone file

A text file that describes a DNS zone, a subset or single domain of the hierarchical domain name structure of the DNS. Zone files contain assigned correlations between individual domain names

and numerical IP addresses.

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