STIBO SYSTEMS
MASTER DATA MANAGEMENT

# Data Quality

Admin Guide

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# Introduction

Stibo Systems Data Quality (Stibo SDQ) is a Salesforce app that allows Salesforce Administrators to ensure and enhance the quality of their system data. The app is compatible with both Salesforce Classic and Lightning Experience.

This guide will enable system administrators to easily setup and configure Stibo SDQ for Salesforce. Stibo SDQ is designed to be used with one or more themes interchangeably with flexible configurations. Each implementation can provide very different results. This guide aims to describe the different Stibo SDQ configuration settings by theme, allowing system administrators to easily configure the capabilities as described within the **Stibo SDQ User Guide**.

API keys and/or credentials for the Stibo SDQ themes are provided by Stibo Systems by sending an email to StiboSDQ@stibosystems.com. Once you have received the necessary API keys and/or credentials, consult the Areas to Configure section below.

This guide includes an **Appendix** containing additional background information that a system administrator may find useful.

## Prerequisites

It is recommended that system administrators read the **Stibo SDQ User Guide** prior to this guide.

At least 48 hours prior to installing Stibo SDQ, it is recommended to email StiboSDQ@stibosystems.com to obtain the required API keys and/or credentials for the desired themes.

## Areas to Configure

The following guide is broken down into sections, where each will configure a part of Stibo SDQ.

1. Installing apps in Salesforce can be done with a single click from the Salesforce App Exchange. There are a few parameters to keep in mind while installing the app. For a walk through of these installation process, see the **Installing Stibo SDQ** topic in this guide
2. After installing the Stibo SDQ app, the various validation themes will allow certain validation processes to be enabled. Users may enable one theme, two themes, or all three. For more information on enabling the Stibo SDQ themes, see the **Enable StiboSDQ Themes** topic in this guide . These sections will also detail how to map data objects from Salesforce to Stibo SDQ.
    a. To validate data based on user phone numbers, email addresses, and/or physical addresses, see the **Enable the Real-time Contact Data Validation Theme** in this guide.
    b. To connect to the STEP or other MDM platform, see the **Enable the Master Data Management Theme** topic in this guide
    c. To take advantage of the Dun & Bradstreet platform for data validation, see the **Enable Dun & Bradstreet Theme** topic in this guide.
3. To access various pages and perform certain actions in Stibo SDQ, a user profile will need to be created or certain permissions need to be added to the standard user profile. For information on which permissions are

needed, see the **Set Up a User Profile** topic in this guide to set up the correct permissions for Stibo SDQ.

4. Stibo SDQ requires some custom fields to be configured to ensure that the data objects from Salesforce can pass the data to Stibo SDQ. For information on these custom fields, see the **Set Up Custom Fields** topic in this guide.
5. Salesforce requires customization of buttons to use new functionality with the D&B Enrichment Theme. For information on setting up the buttons needed for the D&B enrichment theme, see the **Button Customization Setup** topic in this guide.
6. Salesforce will need configurations for triggering asynchronous validation. For information on setting up these triggers, see the **Async Validation** topic in this guide.

## Contact Us

For more information about Stibo SDQ, or to obtain the required application keys, email StiboSDQ@stibosystems.com, otherwise contact support at StiboSDQSupport@stibosystems.com.

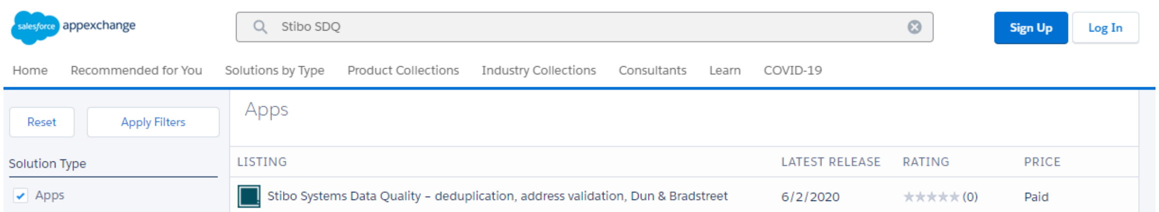
# Installing Stibo SDQ

As with any Salesforce app, install the Stibo SDQ app by searching for 'Stibo SDQ' in the Salesforce App Exchange.

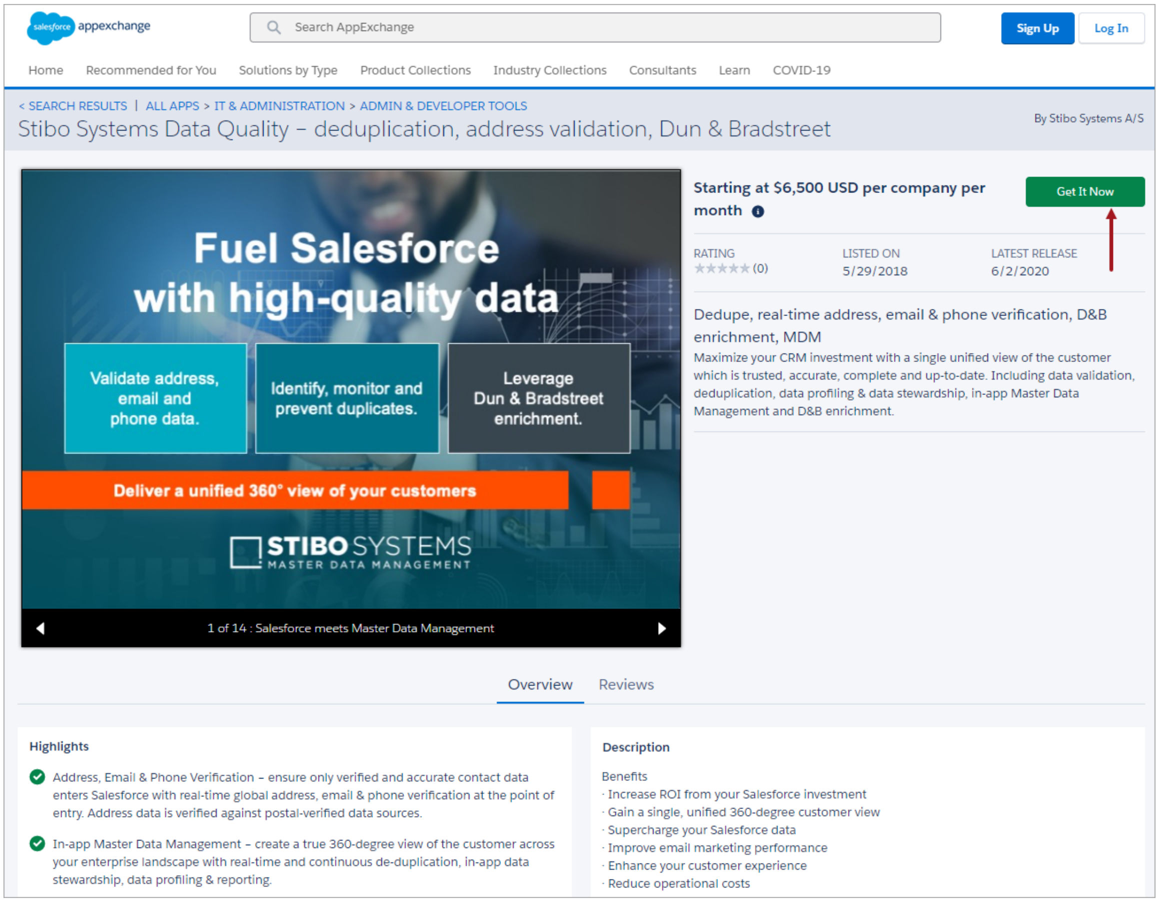
1. At least 48 hours prior to installing Stibo SDQ, request and purchase the necessary API Keys from StiboSDQ@stibosystems.com.

   **Note:** Each theme has its own API key(s) and/or required unique information. The Real-time contact data validation theme offers a separate API key for the phone, address, and email validations. In other words, five API keys are possible for full functionality across all three themes.

2. Log in to the Salesforce.org where the Stibo SDQ app will be installed.
3. Go to the Salesforce AppExchange > Search for the Stibo SDQ app.




4. From the 'Stibo Systems Data Quality' app card, select 'Get It Now.'




5. When installation starts, choose one of the three installation options:
   - Install for Admins Only
   - Install for All Users
   - Install for Specific Profiles

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**Note:** It is recommended to select the option of 'Install for Admins Only.' This selection limits the configuration of Stibo SDQ to just administrators.

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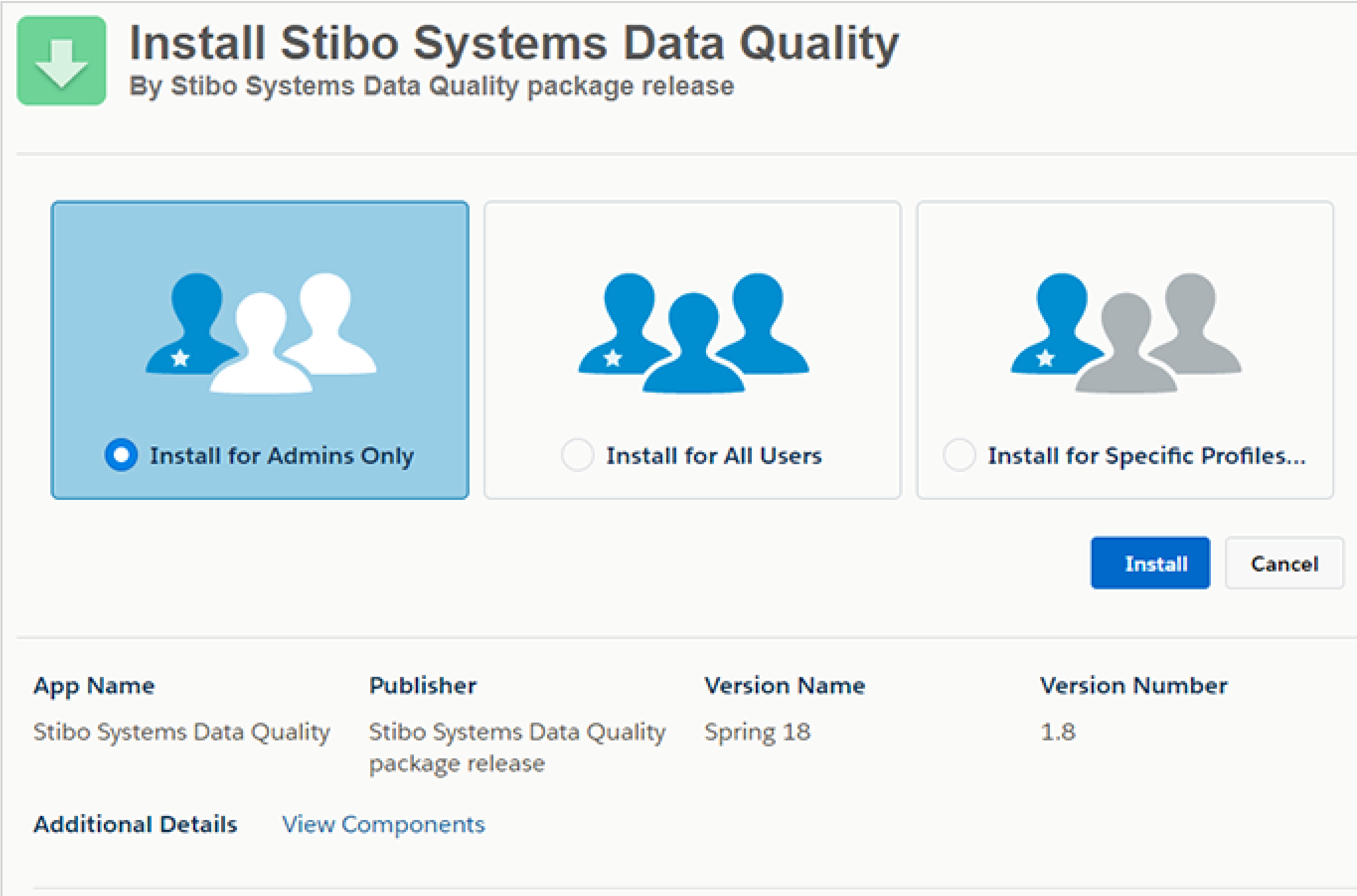
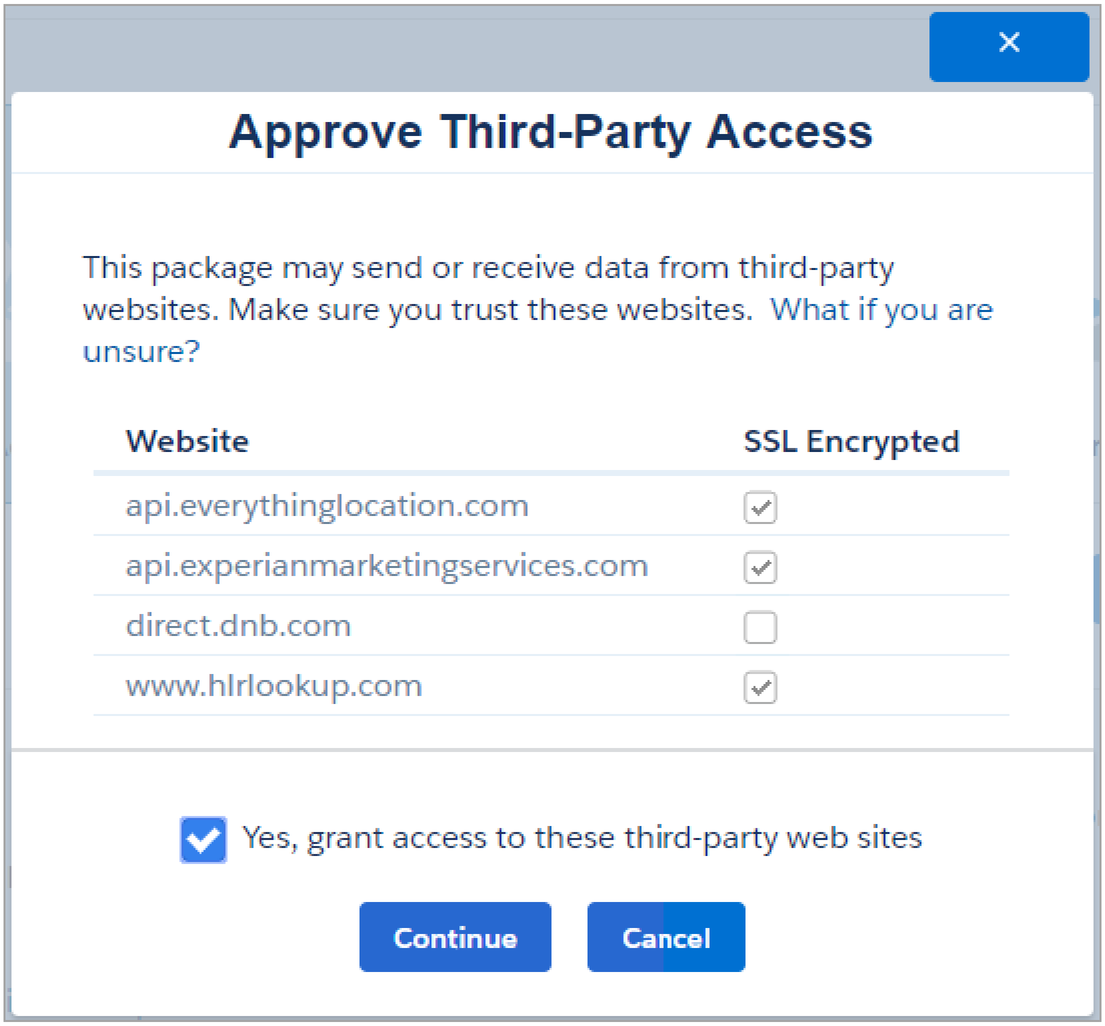



6. When installing a list of external permissions will be requested. Accept these permissions, and the app will install.

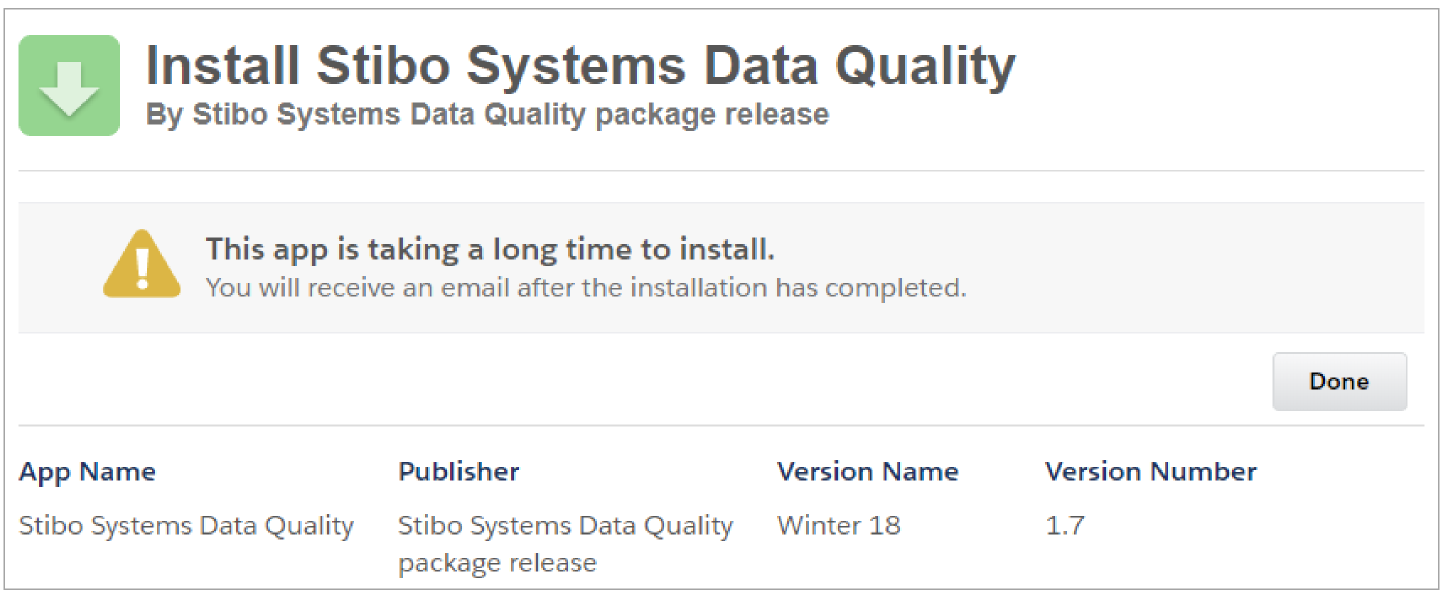



**Note:** This installation process may take a little while. Salesforce will email you when it is installed and ready.

7. Click the **Continue** button, and an installation progress message will display.

   In the example below the progress message confirms 'Installing and granting access to admins Only,' because the 'Install for Admins Only' options was selected (as shown in step 4 above).


If the installation attempt exceeds 1 minute, then the following warning will display:




8. Clicking the Done button will close the dialog and display the Salesforce Installed Packages page.

Once the installation package download is complete, an email will be sent from support@salesforce.com to the address associated with the account profile used to login (as shown in step 2 above).

From: support@salesforce.com [mailto:support@salesforce.com]
Subject: Package Stibo Systems Data Quality Install Successful
Importance: High

Your request to install package "Stibo Systems Data Quality Winter 17" was successful.

Organization:
User:
Package: Stibo Systems Data Quality

Some components, such as custom objects, custom report types, and workflow rules, must be activated using the package deploy process, before they are available to your organization.

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**Note:** At any time during the installation process, the Salesforce Installed Packages page can be used to confirm the progress of the installation. Also, this page can be used to uninstall Stibo SDQ.

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## Next Steps

After the Stibo SDQ installation has completed, one or more Stibo SDQ themes must be enabled. To enable Stibo SDQ themes, a system administrator will need to access the Stibo SDQ App Landing Page and then configure the settings for the desired themes.

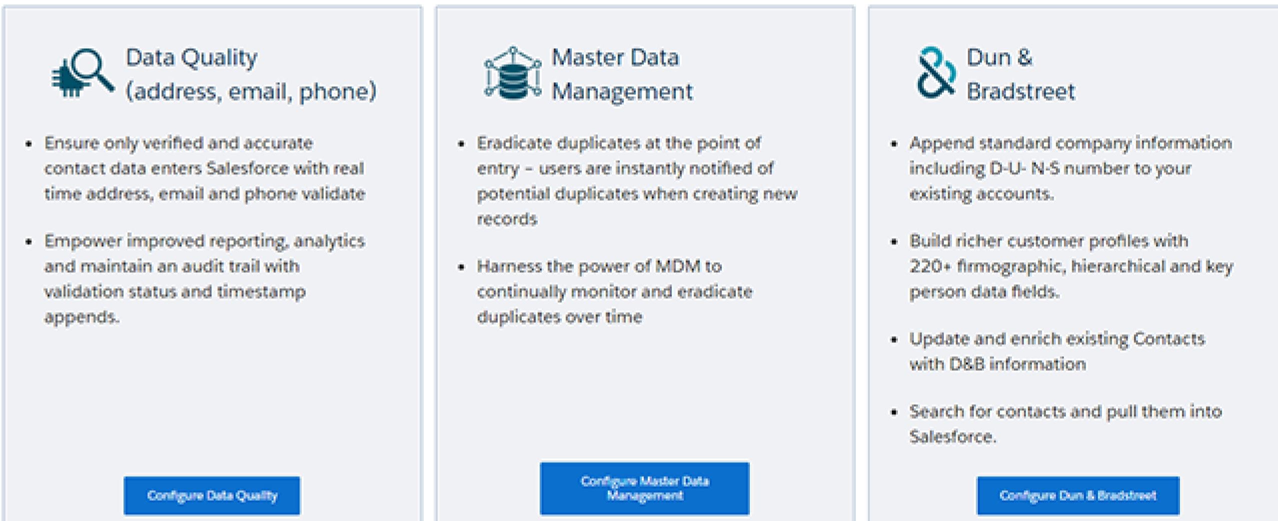
Information on configuring each of the themes can be found within the respective configuration sections of this guide:

- **Configuring the Real-time Contact Data Validation Theme**
- **Configuring the Dun & Bradstreet Enrichment Theme**
- **Configuring the Master Data Management Theme**

# Enable Stibo SDQ Theme(s)

In Stibo SDQ, each feature package is called a theme. Each theme is configured completely separate from the others.

In this guide, each theme's configurations will be explained. To configure any of the themes, select 'Settings' under the desired theme from the left menu pane.

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**Note:** Once the first theme is configured, admin users will no longer see the previous image. Instead, they will need to click into the settings of each additional theme to configure.

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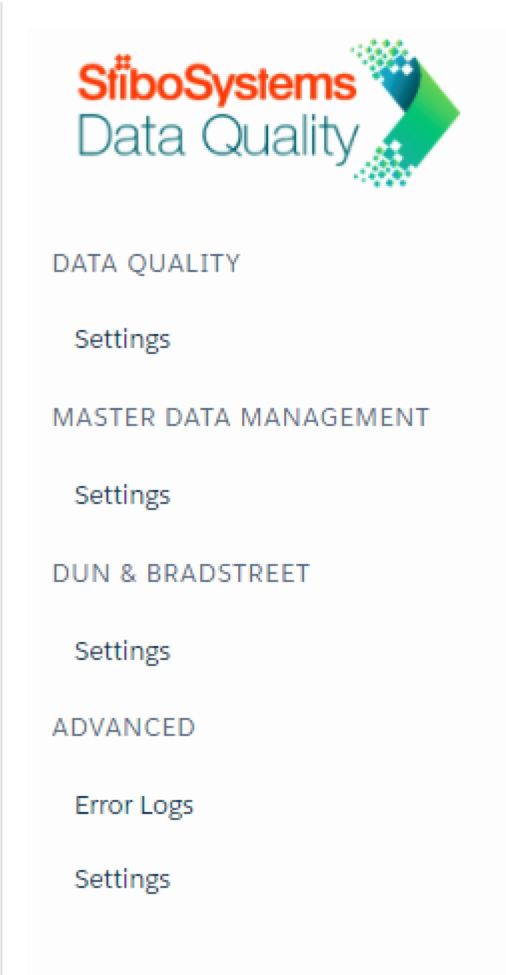



The following three themes are currently available:

- Real-time Contact Data Validation Theme
- Master Data Management Theme
- Dun & Bradstreet Enrichment Theme

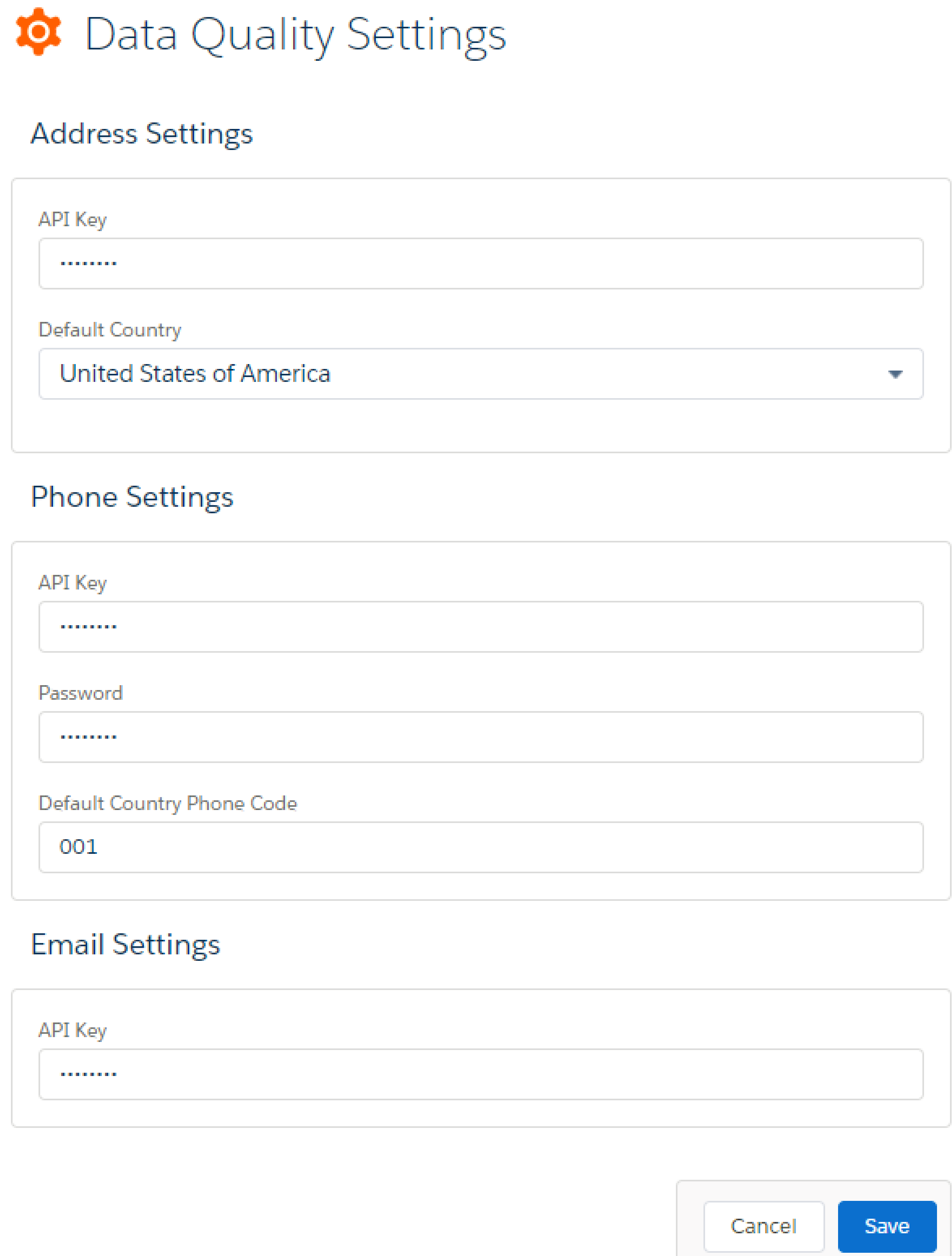
# Enable Real-Time Data Validation Theme

Ensuring quality data requires knowing that the provided data is actually valid. Through three different channels—address, email, and phone validations—this theme allows for real-time, instant data checking.

To validate user data, the following services are used:

- Phone: https://www.hlrlookup.com
- Email: https://api.experianmarketingservices.com
- Address: https://api.everythinglocation.com

When selecting the 'Configure Data Quality' option, the following screen displays. This screen can also be reached via the 'Settings' option on the left menu pane.


Data Quality Settings
Address Settings
API Key
........
Default Country
United States of America
Phone Settings
API Key
........
Password
........
Default Country Phone Code
001
Email Settings
API Key
........
Cancel
Save

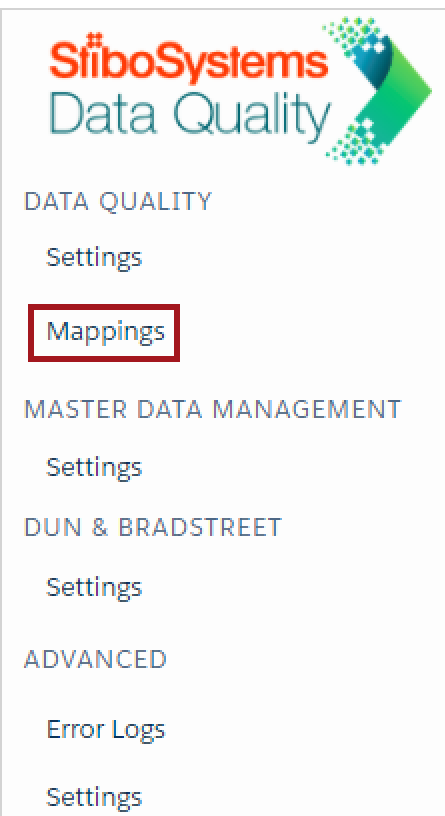
It should be noted that you may add combinations of these data quality items. The API keys and passwords should be in the email from StiboSDQ@stibosystems.com.

Under the Address settings, the **Default Country** field is a default country to auto-populate when an end user enters address data. When no selection is made, the default country will display as 'United States of America.' Users may also select a different country if the default does not apply to their entered address. Under the phone settings section, the **Default Country Phone Code** field is a default country phone code to auto-populate when an end user enters phone data. While it is not required to enter a default country phone code, it is highly recommended for users to specify one so that the system will have something to fall back on if the field is not populated.

Once the Real-time Contact Data Validation theme is configured, you will need to create / modify a user profile, some custom fields, and map the Salesforce objects to the Stibo Systems objects. Also, some buttons need to be overridden and some Visualforce pages need to be enabled. To do these, see the following sections titled **Configure User Profile** for permissions and to enable Visualforce pages, **Setting up Custom Fields**, **Overriding Buttons**, and **Configure Mappings between Salesforce and Stibo SDQ**.

## Configuring Real-time Contact Data Validation Mapping between Salesforce and Stibo SDQ

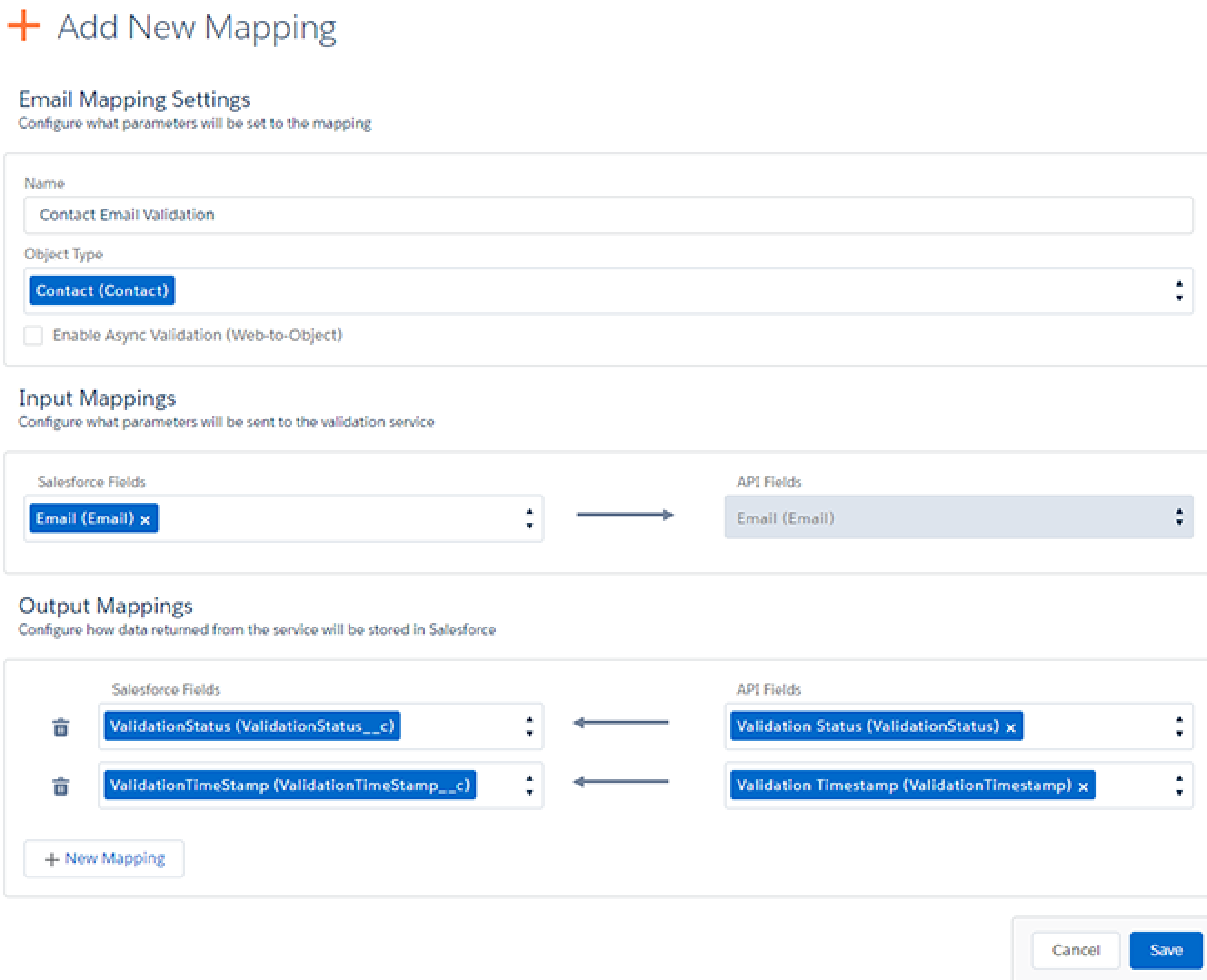
Data enters Salesforce by way of user entry. For this data to be validated, however, it needs to connect to Stibo SDQ. To create this connection, Salesforce data objects need to be mapped to Stibo SDQ data objects. Each theme will require its own mappings. Each mapping is configured by selecting 'Mapping' below the theme header.



**Note:** Each mapping will only display when the theme is configured in Settings.

When opening the mapping section, mappings are not preconfigured, so you must select the 'New Mapping' button to begin.


Select any of the desired options, and follow the email mapping example. All mappings are configured in the same manner of selecting 'New Mapping,' naming it, defining the object type, then mapping the input and output values.




With each mapping, provide a name, object type, and input / output mappings. The following sections will show the needed API fields to match. More mappings can be added to each section by selecting the 'New Mapping' option at the top right of the screen.

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**Note:** The 'New Mapping' option at the top of the mapping screen is different from the '+ New Mapping' button at the bottom of the mapping screen. The '+ New Mapping' button will add new fields for mapping where as the 'New Mapping' creates a new object that collects all the fields.

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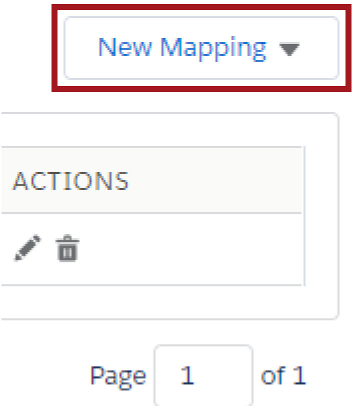
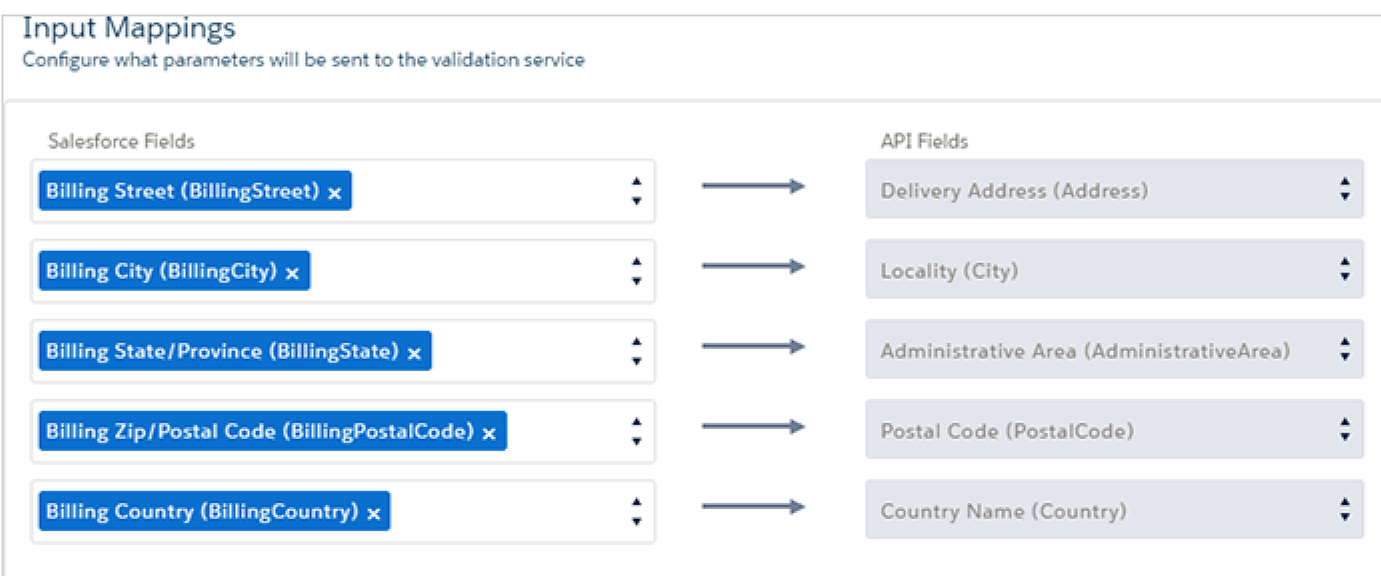


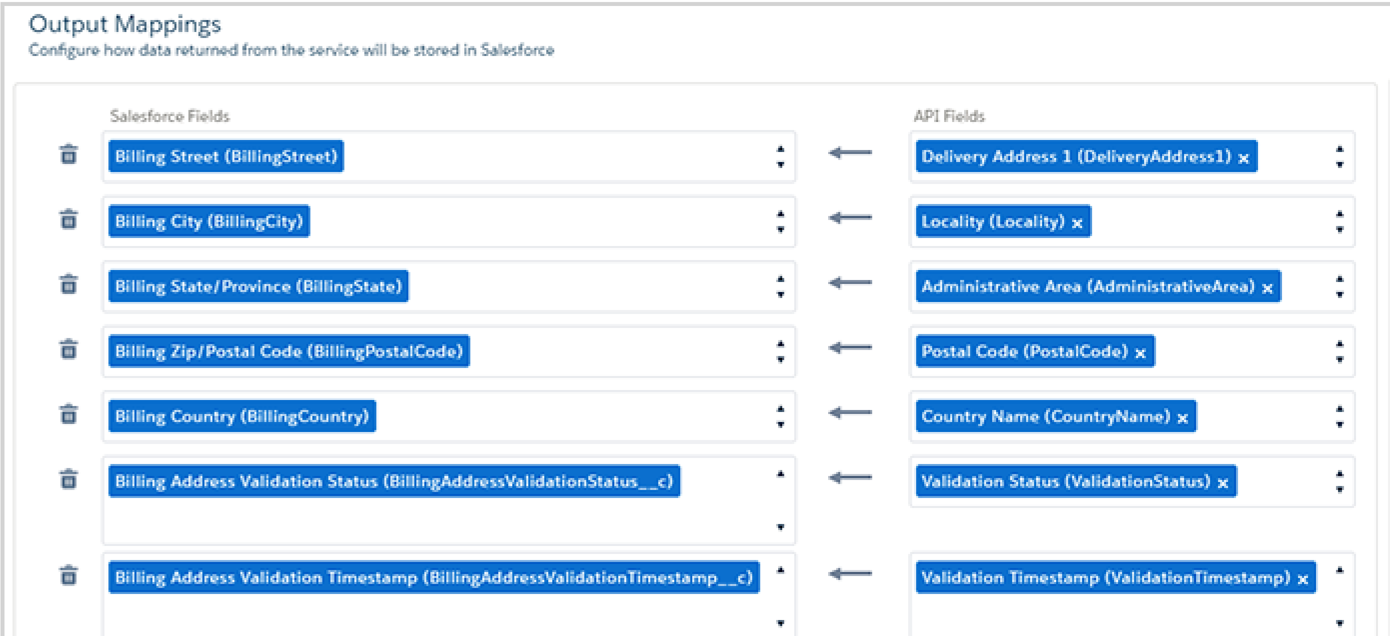

**Note:**
The appended '__c' indicates that the Salesforce field is a custom one. Two required custom fields are for validation status and timestamp. The timestamp field must be a date / time format. See the **Setting Up Custom Fields** section of this document for information on this process.

In the following examples, any blue option is a suggestion and may be deleted. The gray field cannot be replaced or removed.

## Real-time Contact Data Validation - Address Mapping

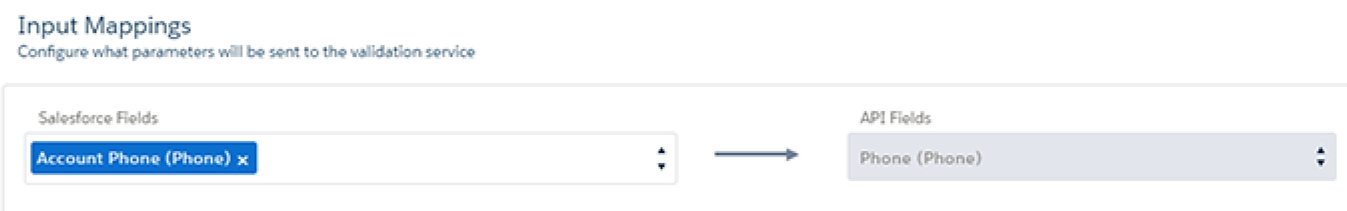
For addresses, the expected input and output API fields to match to are:

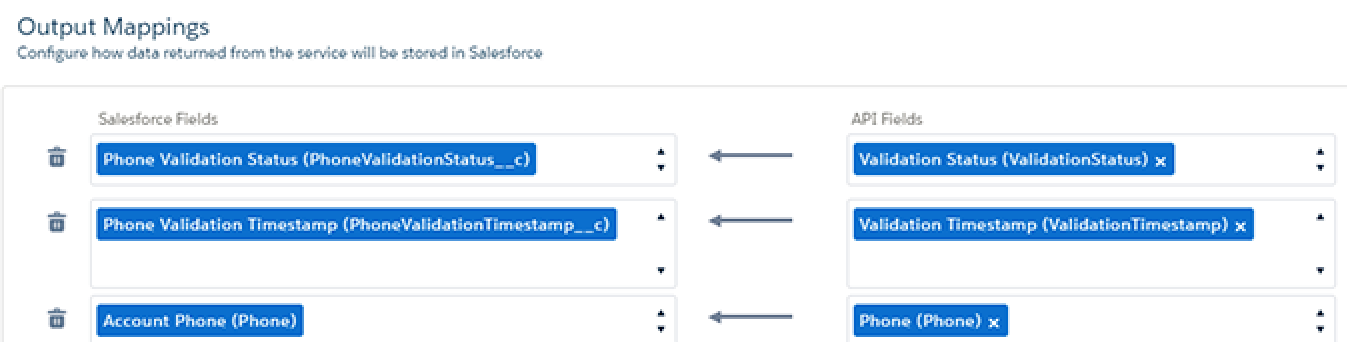





## Real-time Contact Data Validation - Phone Mapping

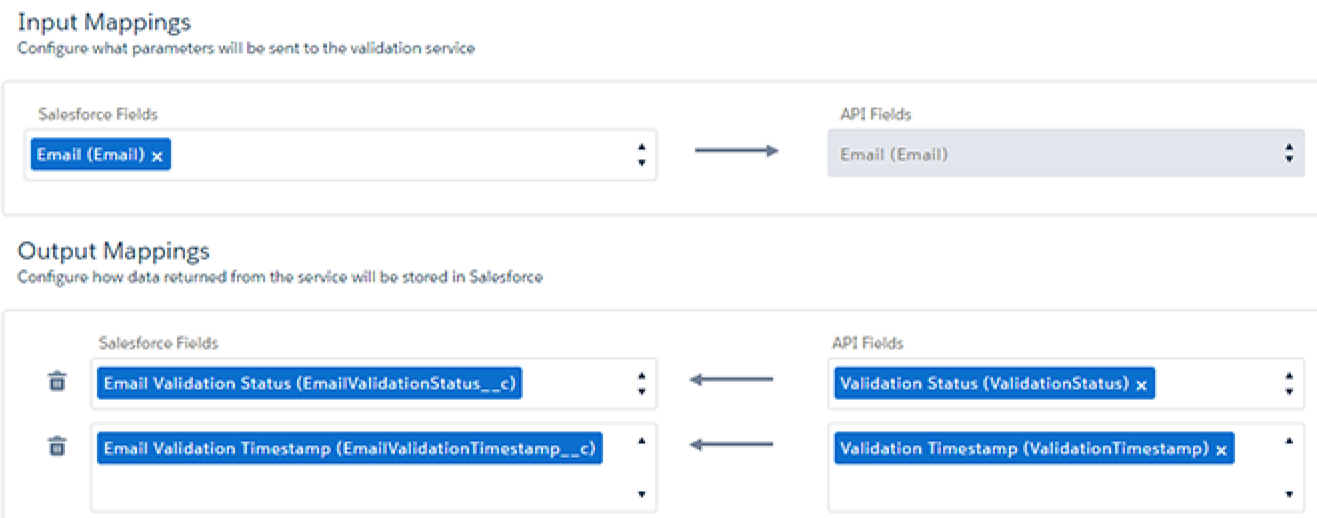
For phone numbers, the expected input and output API fields to match to are:




## Real-time Contact Data Validation - Email Mapping

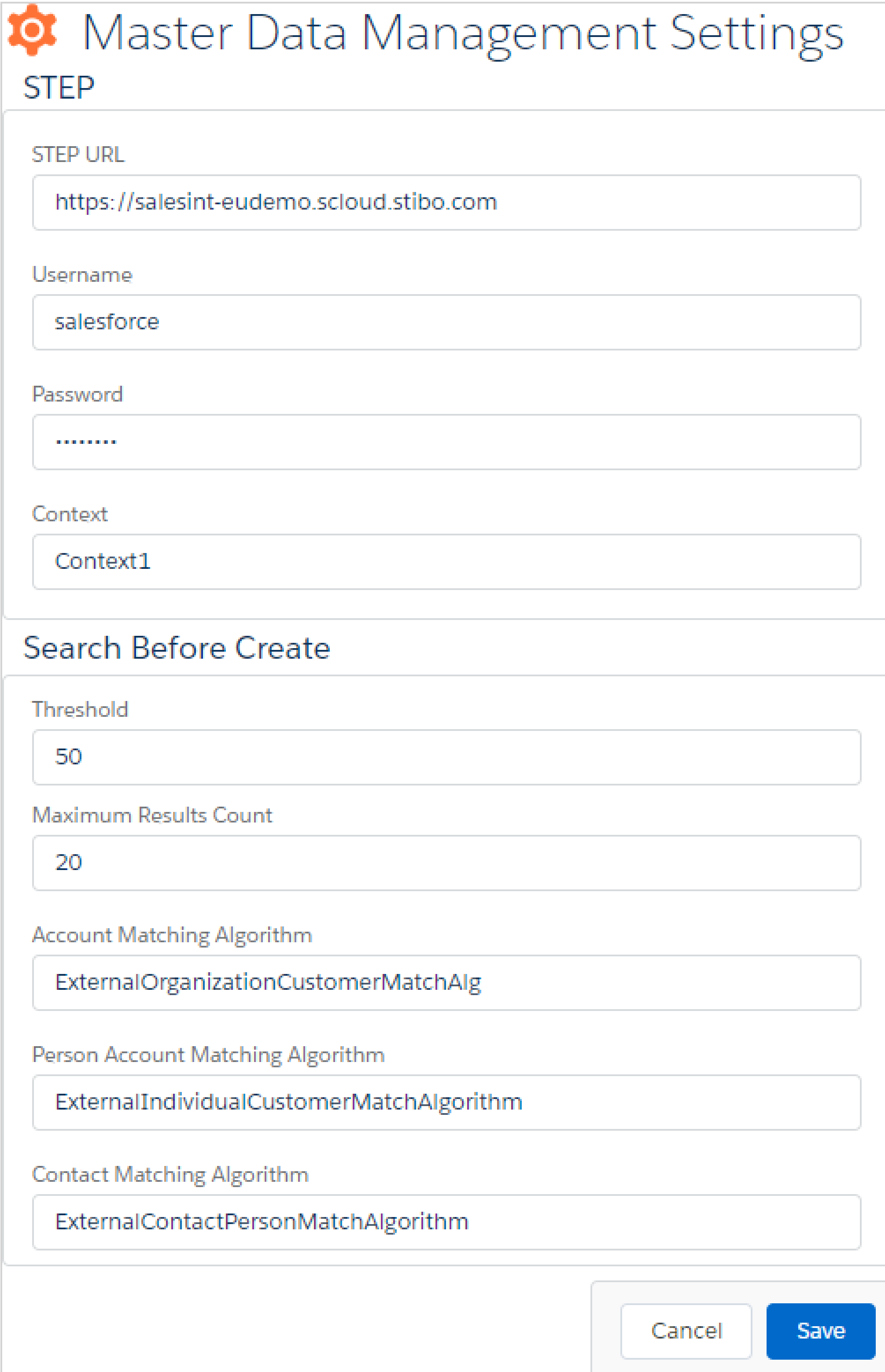
For emails, the expected input and output API fields to match to are:


Input Mappings
Configure what parameters will be sent to the validation service
Salesforce Fields
Email (Email)
API Fields
Email (Email)
Output Mappings
Configure how data returned from the service will be stored in Salesforce
Salesforce Fields
API Fields
Email Validation Status (EmailValidationStatus__c)
Validation Status (ValidationStatus)
Email Validation Timestamp (EmailValidationTimestamp__c)
Validation Timestamp (ValidationTimestamp)

# Enable Master Data Management Theme

Master Data Management users may connect to their STEP platform to manage automatic removal of duplicate accounts and contacts as well as perform associated data steward functions. To configure the MDM theme, enter your STEP URL, STEP username, STEP password, and the associated context that will be used as supplied by Stibo Systems. The **Search Before Create** section uses the following fields:

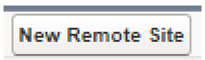
- **Threshold:** Matching threshold. This should be set to 50 or higher. The Threshold number should be determined as a part of tuning the STEP matching processes.
- **Maximum Results Count:** 20 is the recommended setting.
- **Account Matching Algorithm:** This information is supplied by Stibo Systems.
- **Person Account Matching Algorithm:** This field is only displayed when the Person Account option is enabled within Salesforce. This information is supplied by Stibo Systems.
- **Contact Matching Algorithm:** This information is supplied by Stibo Systems.




Select **Save**, and the MDM theme will be configured. However, unless remote sites were configured, this error will display:


## Remote Site Settings

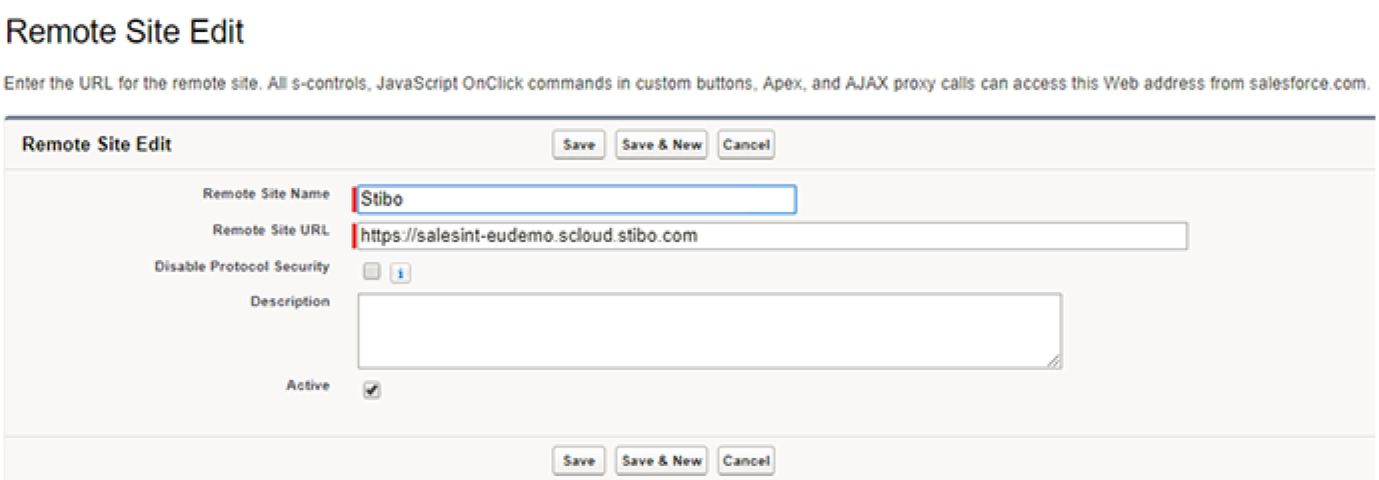
Navigate to the Remote Site Settings page by going to Setup > Security > Remote Site Settings. Click the 'New Remote Site' button.




In the Remote Site Edit section, name the site whatever you wish. In the Remote Site URL, enter the STEP host URL. Afterward, create a second Remote Site Settings with the Salesforce host URL. Finally, add a third remote site with the Salesforce host name prefixed with the package namespace.

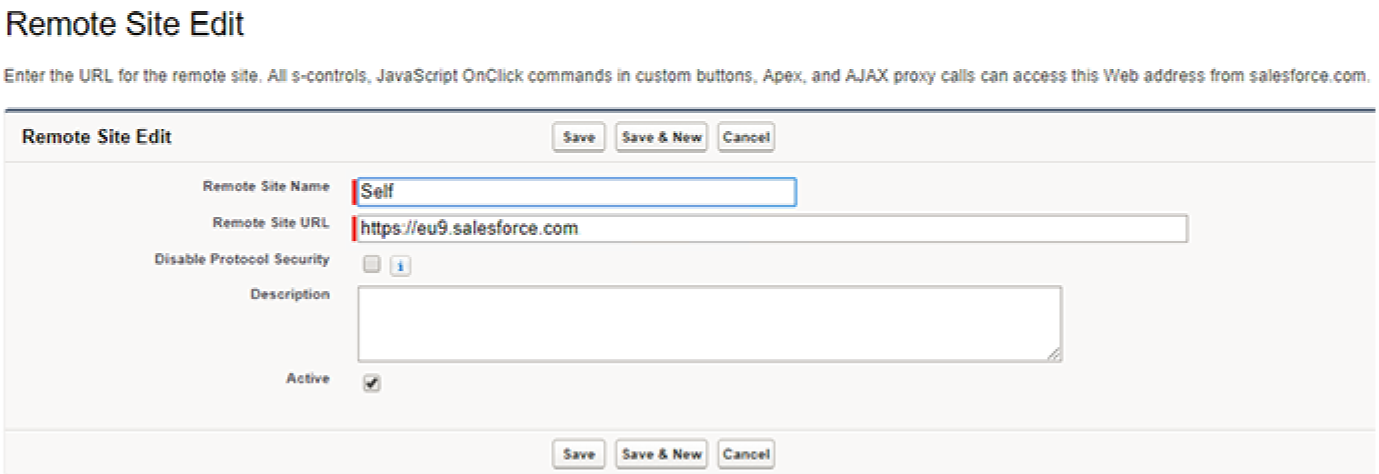
## STEP Host

In the following example, the Remote Site Name is **Stibo** with the Remote Site URL as **https://salesint-eudemo.scloud.stibo.com**.



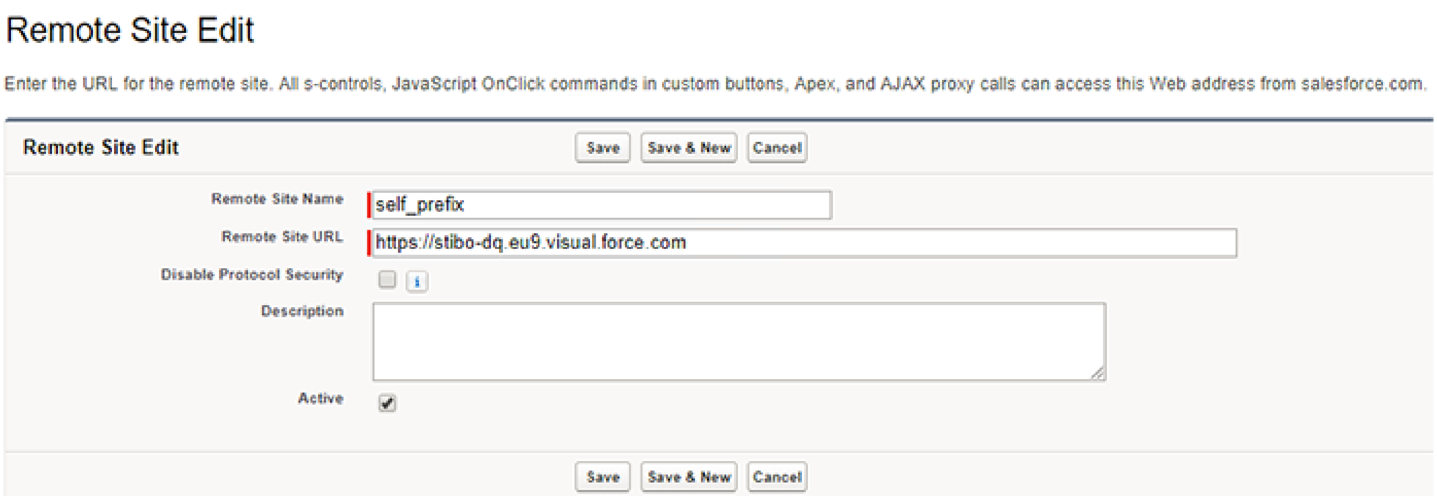

## Salesforce Host

In the following example, the Remote Site Name is **Self** with the Remote Site URL as **http://eu9.salesforce.com**.




## Salesforce Host Prefixed with Package Namespace

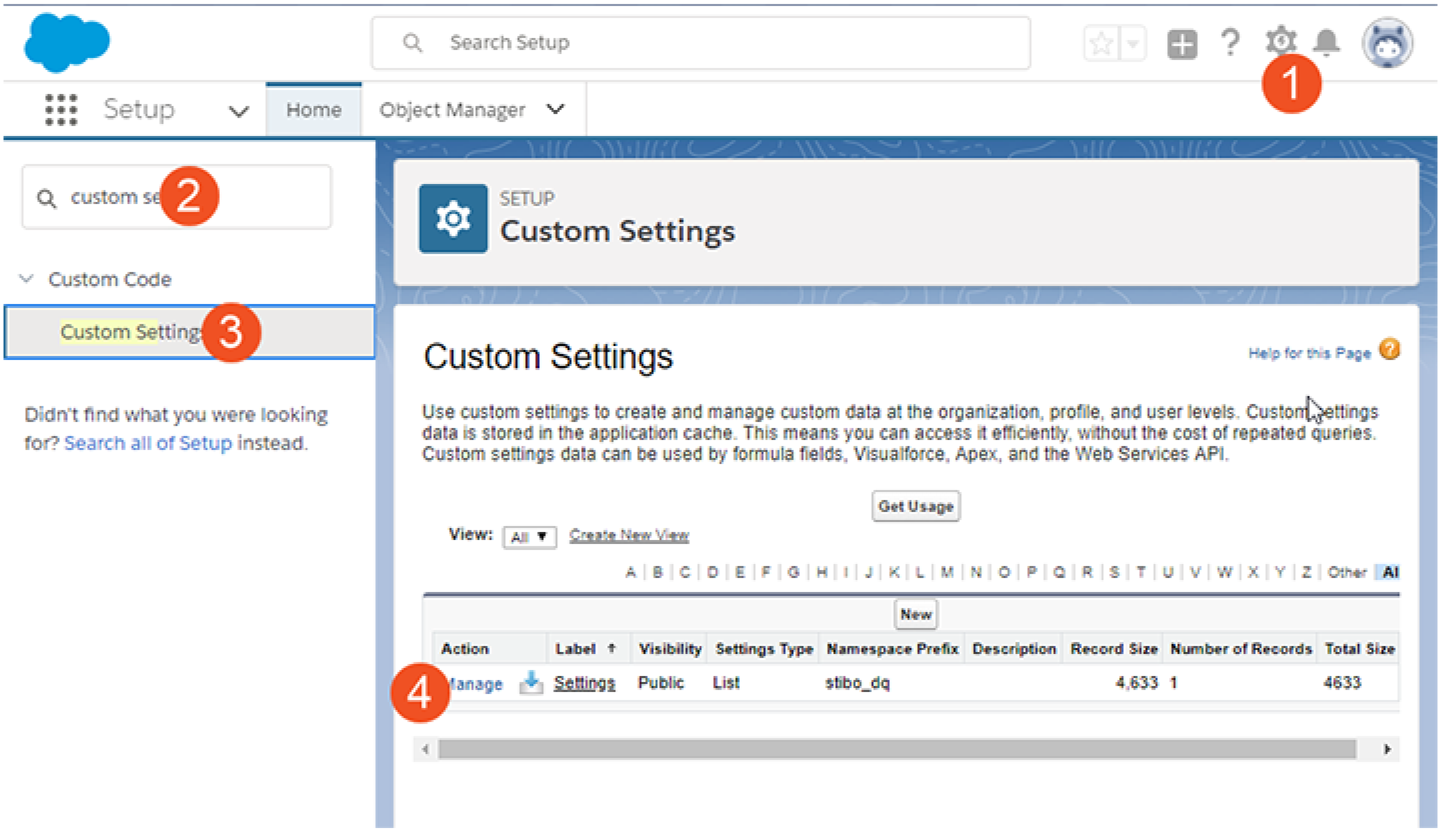
In the following example, the Remote Site Name is **self_prefix** with the Remote Site URL as **https://stibo-dq.eu9.visual.force.com/**.



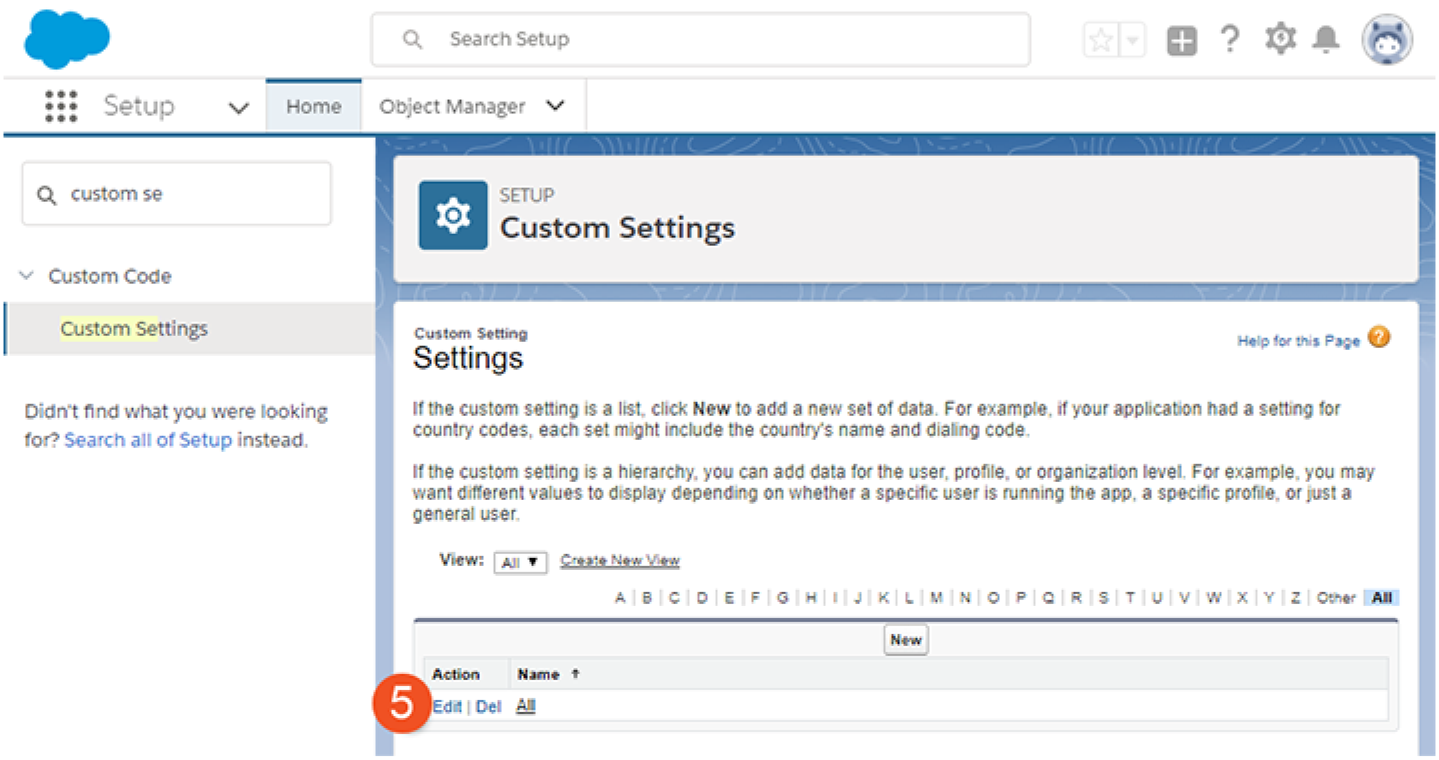

One additional element to the MDM theme is that the **Connection Status** section contains the Integration Endpoint Status. How this is configured differs if your Salesforce organization uses Person Accounts or not. The Stibo Systems contact will provide you the required information.

## Custom Settings

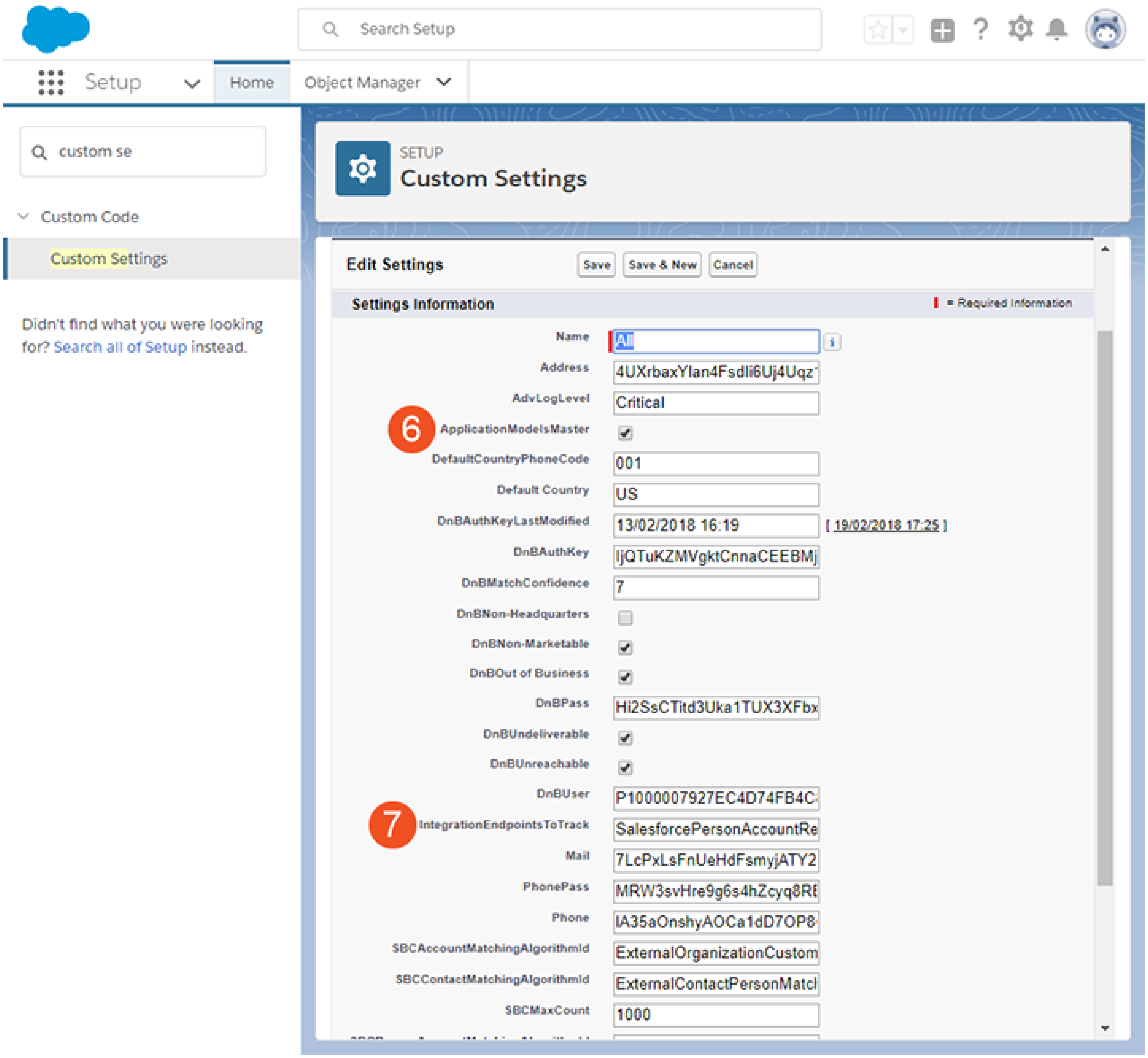
Navigate to the Custom Settings and 'Select Manage.'




Select Edit on the Custom Settings management screen.

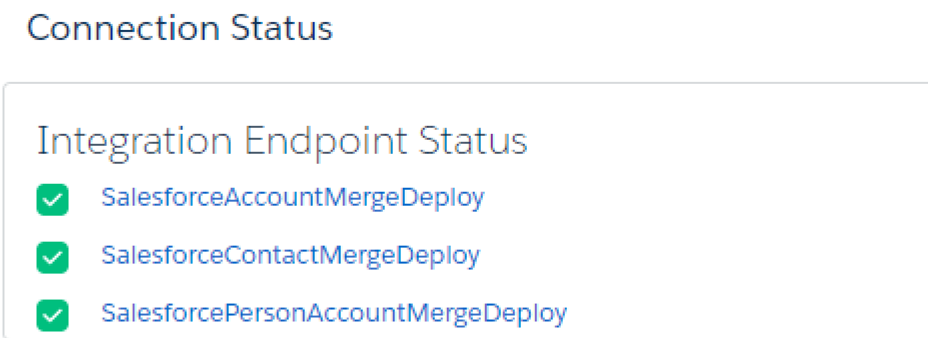


The settings edit screen will display. Select the 'ApplicationModelsMaster' checkbox, and fill in the IntegrationEndpointsToTrack field with the information supplied by Stibo Systems. Select 'Save.'




## Verify

On the MDM theme settings screen, the associated integration endpoints will be populated at the bottom.




Once the MDM theme is configured, you will need to create / modify a user profile, some custom fields, and map the Salesforce objects to the Stibo Systems objects. To do these, see the following sections titled **Configure User Profile** for permissions and to enable Visualforce pages, **Setting up Custom Fields**, **Overriding Buttons**, and **Configure Mappings between Salesforce and Stibo SDQ**.

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**Important:** To finish configuring the MDM theme, a number of setups must be completed on the STEP side. These extra setup steps include making a Salesforce System Administrator account and an associated Security token available. Note that disabling this account or the Security token will cause the MDM aspect of Stibo SDQ to fail. Contact Stibo Systems to begin this work.

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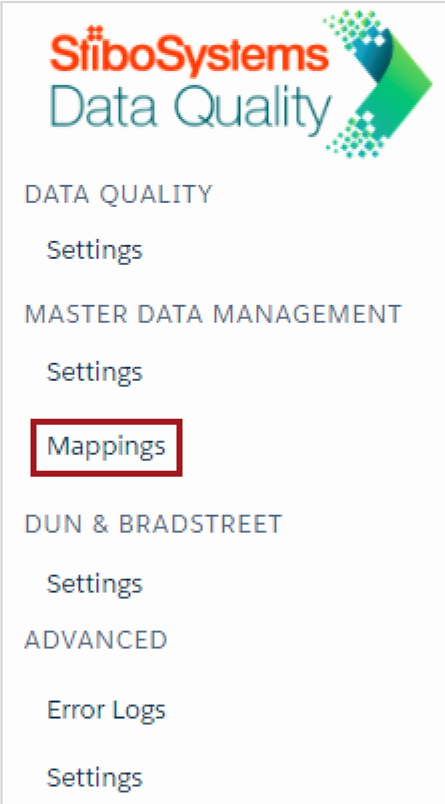
## Configuring MDM Theme Mapping between Salesforce and Stibo SDQ

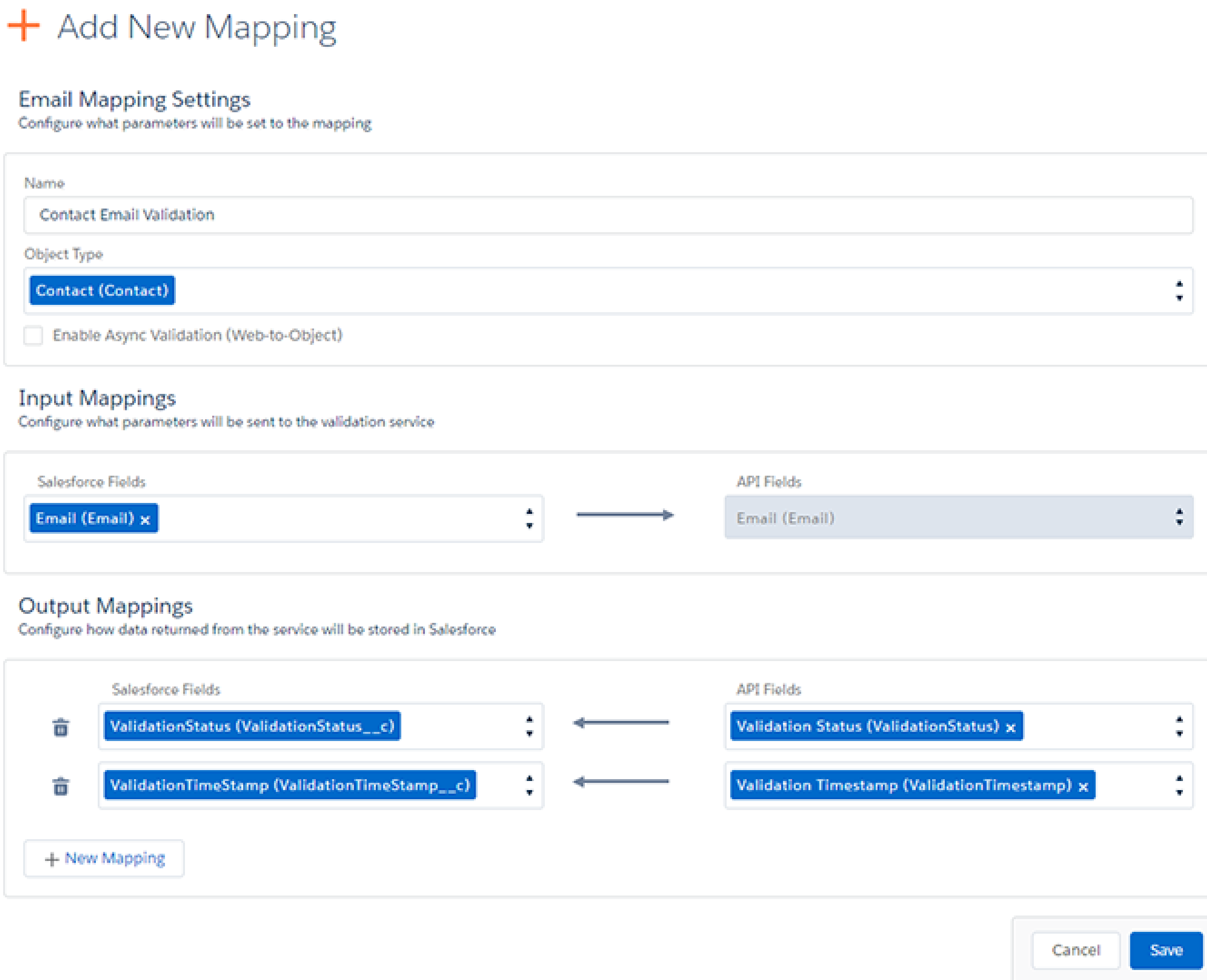
Data enters Salesforce by way of user entry. For this data to be validated, however, it needs to connect to Stibo SDQ. To create this connection, Salesforce data objects need to be mapped to Stibo SDQ data objects. Each theme will require its own mappings. Each mapping is configured by selecting 'Mapping' below the theme header.




**Note:** Each mapping will only display when the theme is configured in Settings.

When opening the mapping section, mappings are not preconfigured, so you must select the 'New Mapping' button to begin.


Select any of the desired options, and follow the email mapping example. All mappings are configured in the same manner of selecting 'New Mapping,' naming it, defining the object type, then mapping the input and output values.




With each mapping, provide a name, object type, and input / output mappings. The following sections will show the needed API fields to match. More mappings can be added to each section by selecting the 'New Mapping' option at the top right of the screen.

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**Note:** The 'New Mapping' option at the top of the mapping screen is different from the '+ New Mapping' button at the bottom of the mapping screen. The '+ New Mapping' button will add new fields for mapping where as the 'New Mapping' creates a new object that collects all the fields.

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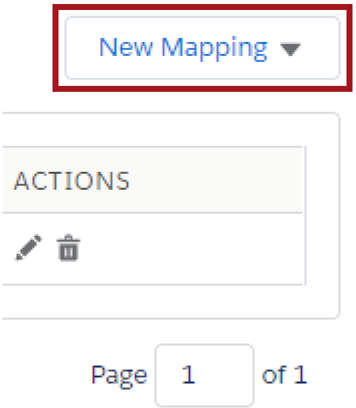


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**Note:**
The appended '__c' indicates that the Salesforce field is a custom one. Two required custom fields are for validation status and timestamp. The timestamp field must be a date / time format. See the **Setting Up Custom Fields** section of this document for information on this process.

In the following examples, any blue option is a suggestion and may be deleted. The gray field cannot be replaced or removed.

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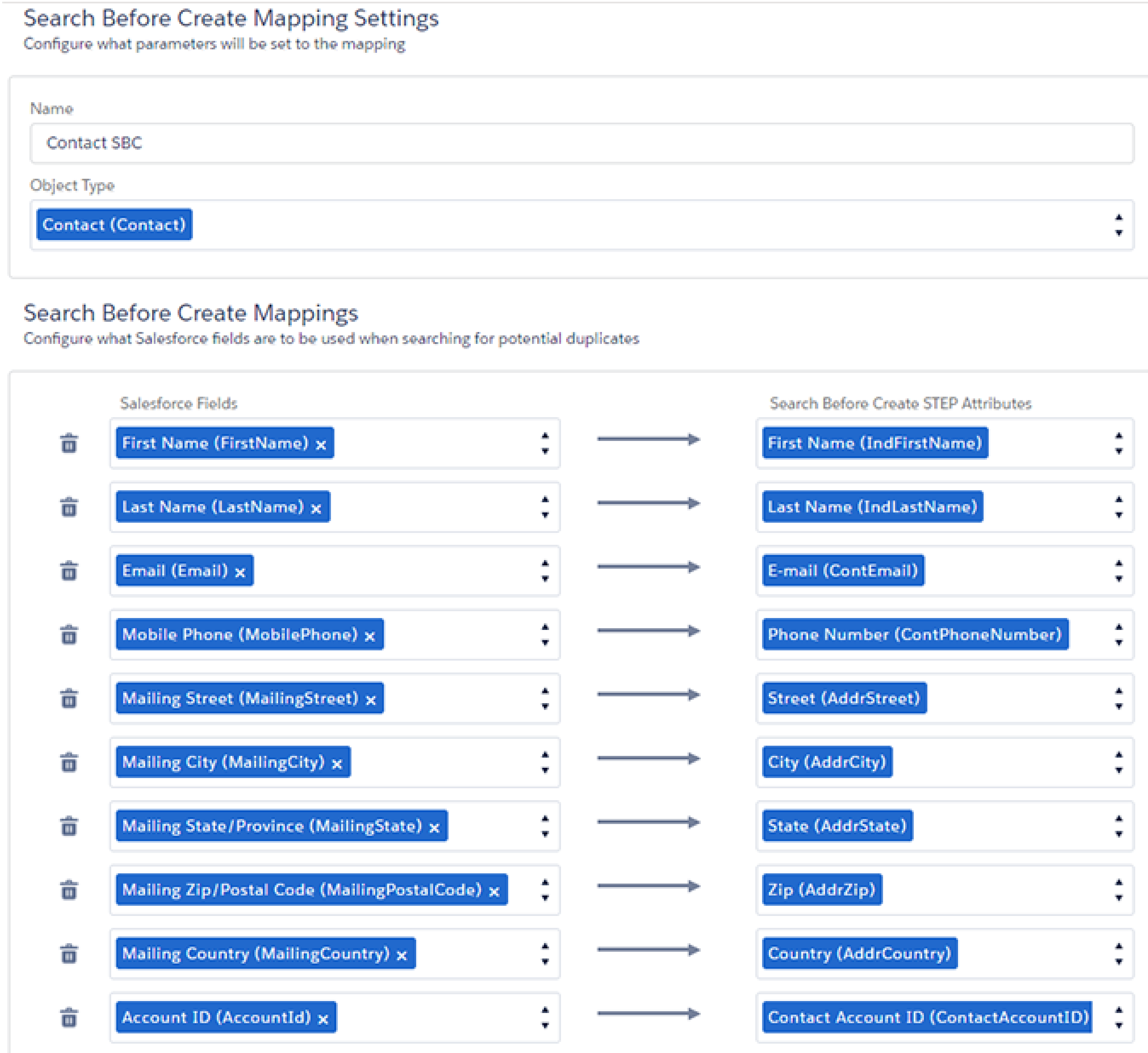
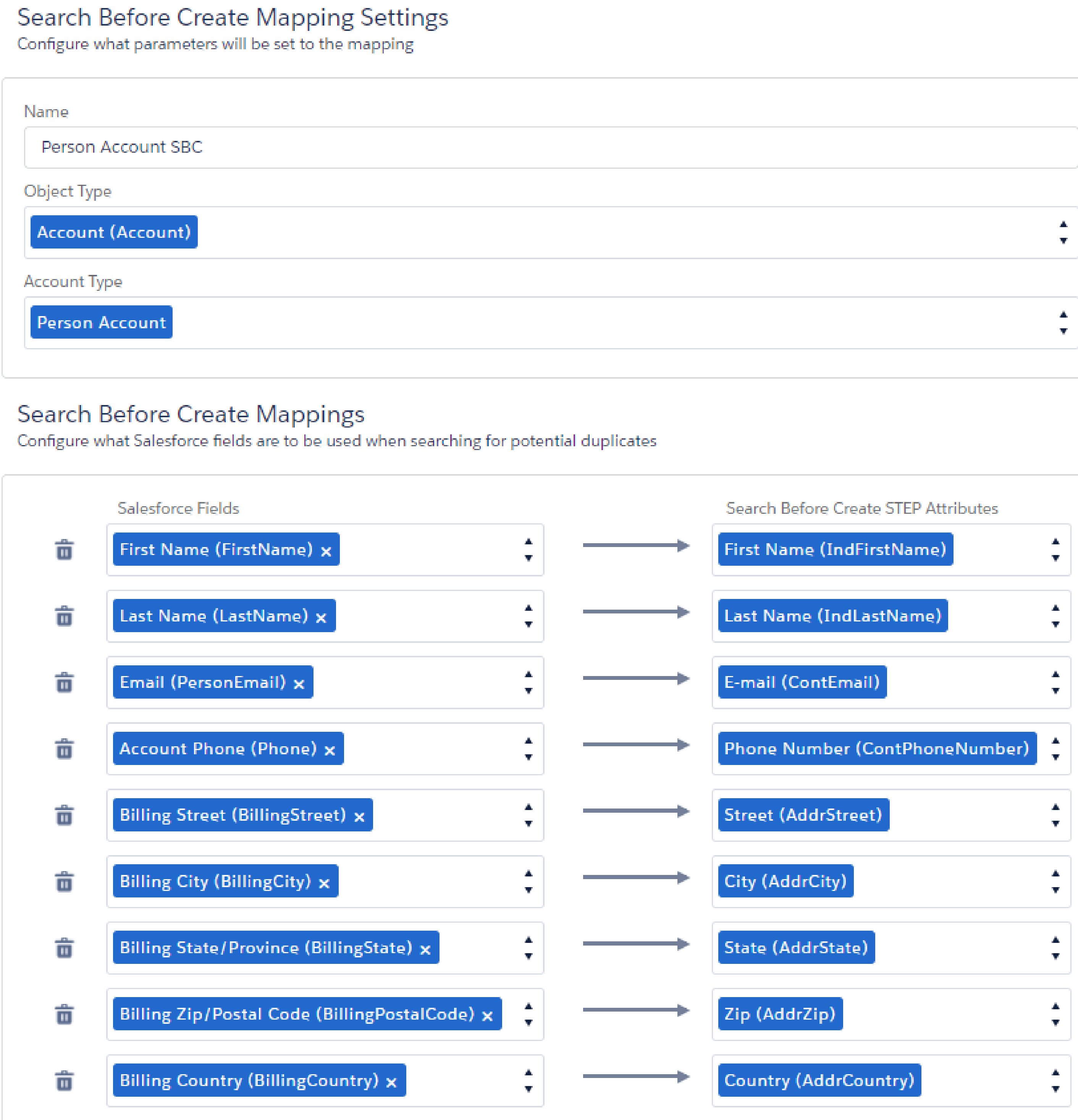
## Master Data Management Theme - Search Before Create Mapping

For 'Search Before Create', the expected input and output API fields to match are as follows. Included are the account, the contact, and person account mappings.


Search Before Create Mapping Settings
Configure what parameters will be set to the mapping
Name
Account SBC
Object Type
Account (Account)
Account Type
Business Account
Search Before Create Mappings
Configure what Salesforce fields are to be used when searching for potential duplicates
Salesforce Fields
Search Before Create STEP Attributes
Account Name (Name)
Legal Name (OrgLegalName)
Billing Street (BillingStreet)
Street (AddrStreet)
Billing City (BillingCity)
City (AddrCity)
Billing State/Province (BillingState)
State (AddrState)
Billing Country (BillingCountry)
Country (AddrCountry)
Account Phone (Phone)
Phone Number (ContPhoneNumber)
New Mapping



Search Before Create Mapping Settings
Configure what parameters will be set to the mapping
Name
Contact SBC
Object Type
Contact (Contact)
Search Before Create Mappings
Configure what Salesforce fields are to be used when searching for potential duplicates
Salesforce Fields
Search Before Create STEP Attributes
First Name (FirstName)
First Name (IndFirstName)
Last Name (LastName)
Last Name (IndLastName)
Email (Email)
E-mail (ContEmail)
Mobile Phone (MobilePhone)
Phone Number (ContPhoneNumber)
Mailing Street (MailingStreet)
Street (AddrStreet)
Mailing City (MailingCity)
City (AddrCity)
Mailing State/Province (MailingState)
State (AddrState)
Mailing Zip/Postal Code (MailingPostalCode)
Zip (AddrZip)
Mailing Country (MailingCountry)
Country (AddrCountry)
Account ID (AccountId)
Contact Account ID (ContactAccountID)


Search Before Create Mapping Settings
Configure what parameters will be set to the mapping
Name
Person Account SBC
Object Type
Account (Account)
Account Type
Person Account
Search Before Create Mappings
Configure what Salesforce fields are to be used when searching for potential duplicates
Salesforce Fields
Search Before Create STEP Attributes
First Name (FirstName)
First Name (IndFirstName)
Last Name (LastName)
Last Name (IndLastName)
Email (PersonEmail)
E-mail (ContEmail)
Account Phone (Phone)
Phone Number (ContPhoneNumber)
Billing Street (BillingStreet)
Street (AddrStreet)
Billing City (BillingCity)
City (AddrCity)
Billing State/Province (BillingState)
State (AddrState)
Billing Zip/Postal Code (BillingPostalCode)
Zip (AddrZip)
Billing Country (BillingCountry)
Country (AddrCountry)

# Enable Dun & Bradstreet Theme

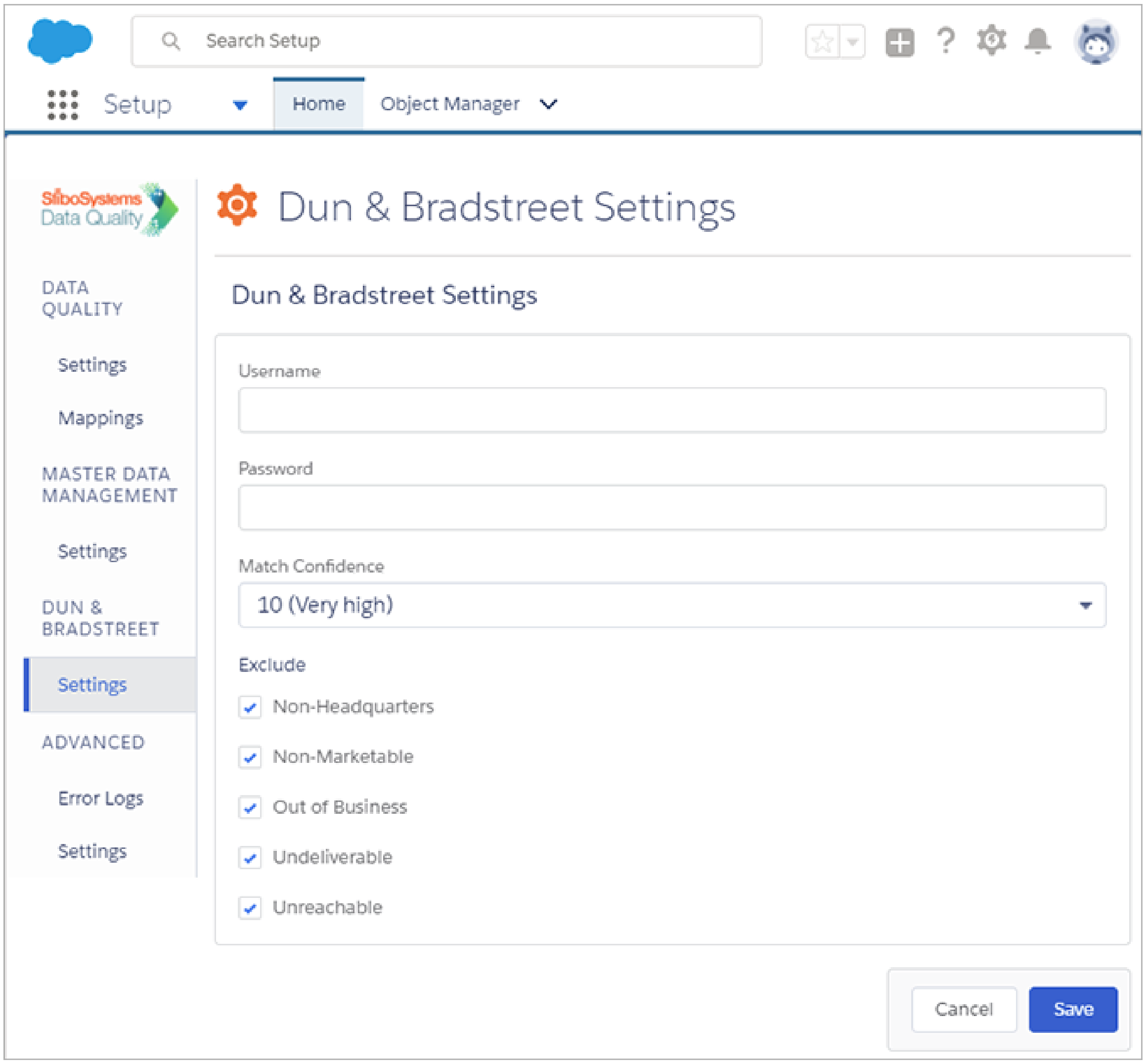
The Dun & Bradstreet Enrichment theme allows Dun & Bradstreet (D&B) to enrich Salesforce accounts with D&B information. Using your D&B account information, complete the settings on the Dun & Bradstreet Settings page. Two fields requiring configuring are the Match Confidence field and the Exclude field.

**Match Confidence:** Affects the DUNS Lookup action button. By default this is set to '10 (Very high)'. When a user is performing a DUNS lookup, they can change the Match Confidence setting.

The following Match Confidence options are available:

- 10 (Very high)
- 9 (High)
- 8 (Medium)
- 7 (Moderate)
- 6 (Low)
- 5 (Very Low)
- 4 (Absent)

**Exclude:** Affects the DUNS Lookup action button. By default all of the options are enabled. When a user is performing a DUNS lookup, they can change the Exclude settings. For more information, see the **Refine Lookup Search Page** in the **Stibo SDQ User Guide**.

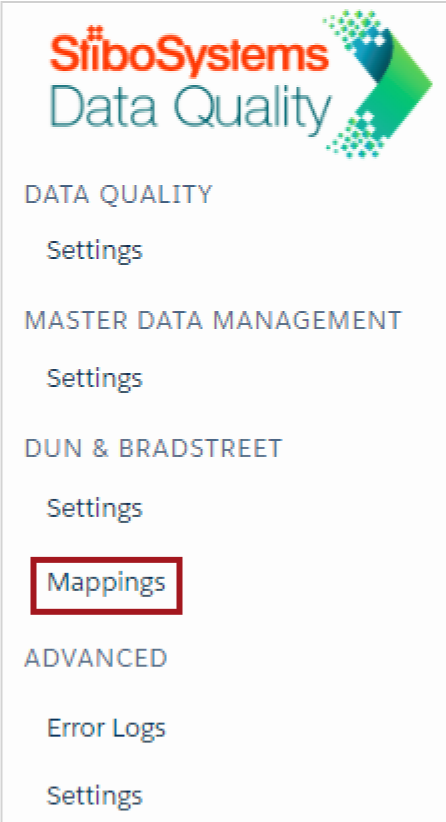



Select the **Save** button. The settings will be saved with the service ready to validate data.

Once the D&B Enrichment theme is configured, you will need to create / modify a user profile, some custom fields, and map the Salesforce objects to the Stibo Systems objects. To do these, see the following sections titled **Configure User Profile**, **Setting up Custom Fields**, **Button Overrides** to create D&B actions and add them to the Salesforce pages, and **Configure Mappings between Salesforce and Stibo SDQ**.

## Configuring Dun & Bradstreet Enrichment Theme Mapping between Salesforce and Stibo SDQ

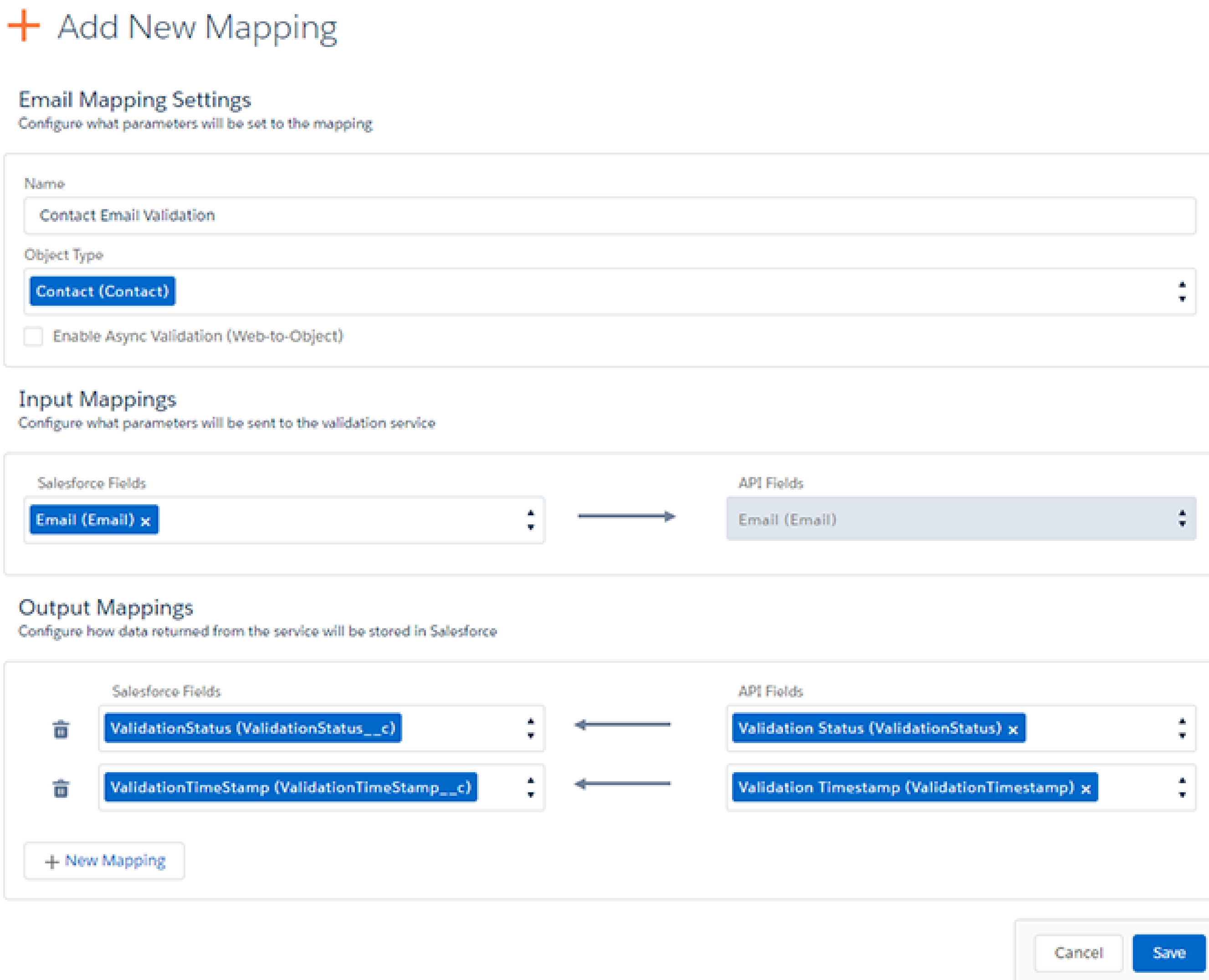
Data enters Salesforce by way of user entry. For this data to be validated, however, it needs to connect to Stibo SDQ. To create this connection, Salesforce data objects need to be mapped to Stibo SDQ data objects. Each theme will require its own mappings. Each mapping is configured by selecting 'Mapping' below the theme header.




**Note:** Each mapping will only display when the theme is configured in Settings.

When opening the mapping section, mappings are not pre-configured, so you must select the 'New Mapping' button to begin.


Select any of the desired options, and follow the email mapping example. All mappings are configured in the same manner of selecting 'New Mapping,' naming it, defining the object type, then mapping the input and output values.

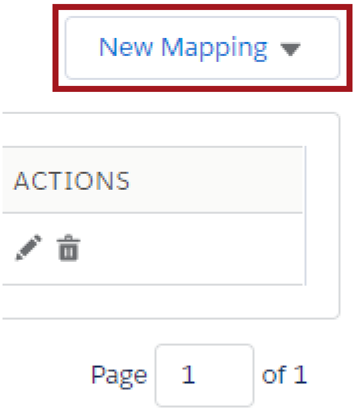



With each mapping, provide a name, object type, and input / output mappings. The following sections will show the needed API fields to match. More mappings can be added to each section by selecting the 'New Mapping' option at the top right of the screen.

---

**Note:** The 'New Mapping' option at the top of the mapping screen is different from the '+ New Mapping' button at the bottom of the mapping screen. The '+ New Mapping' button will add new fields for mapping where as the 'New Mapping' creates a new object that collects all the fields.

---



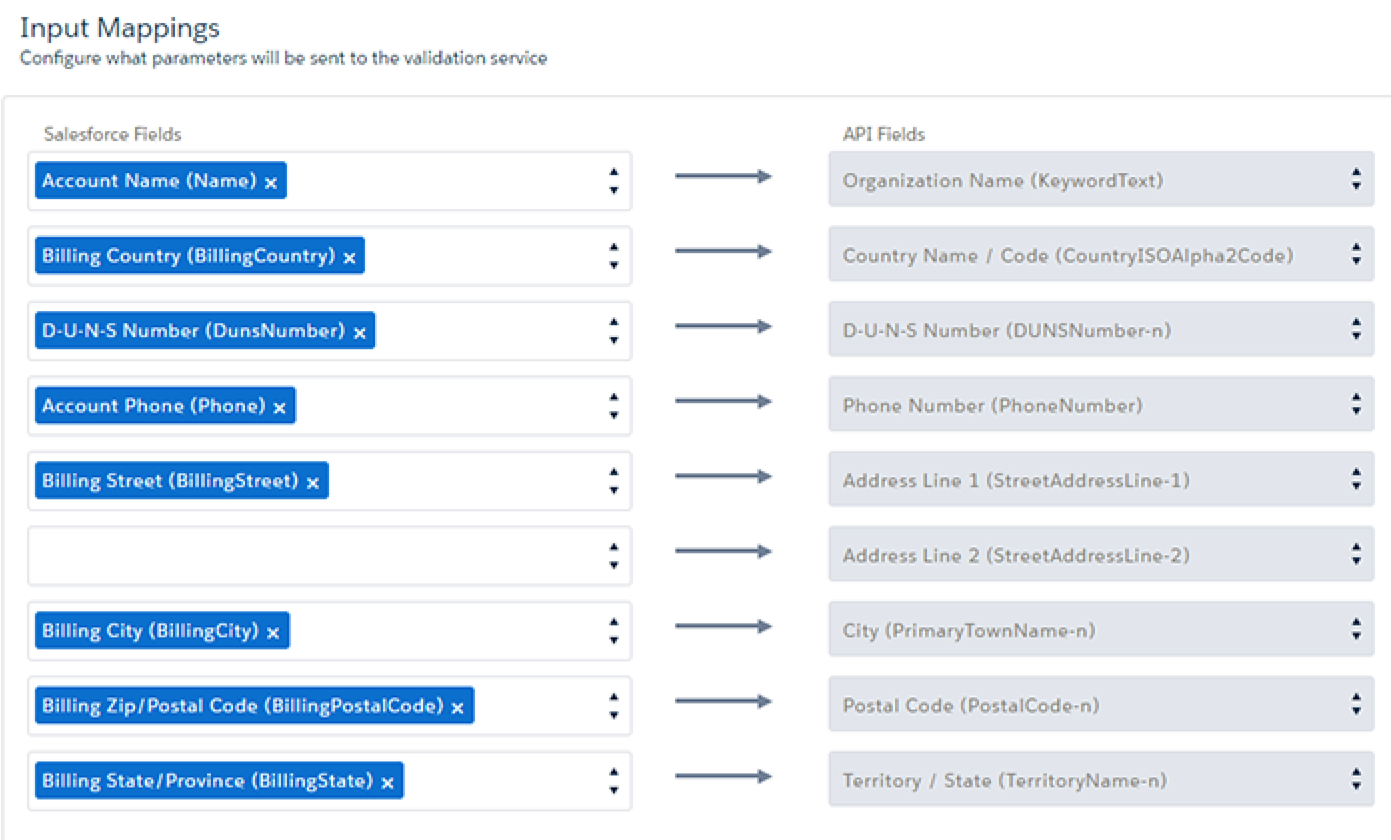

---

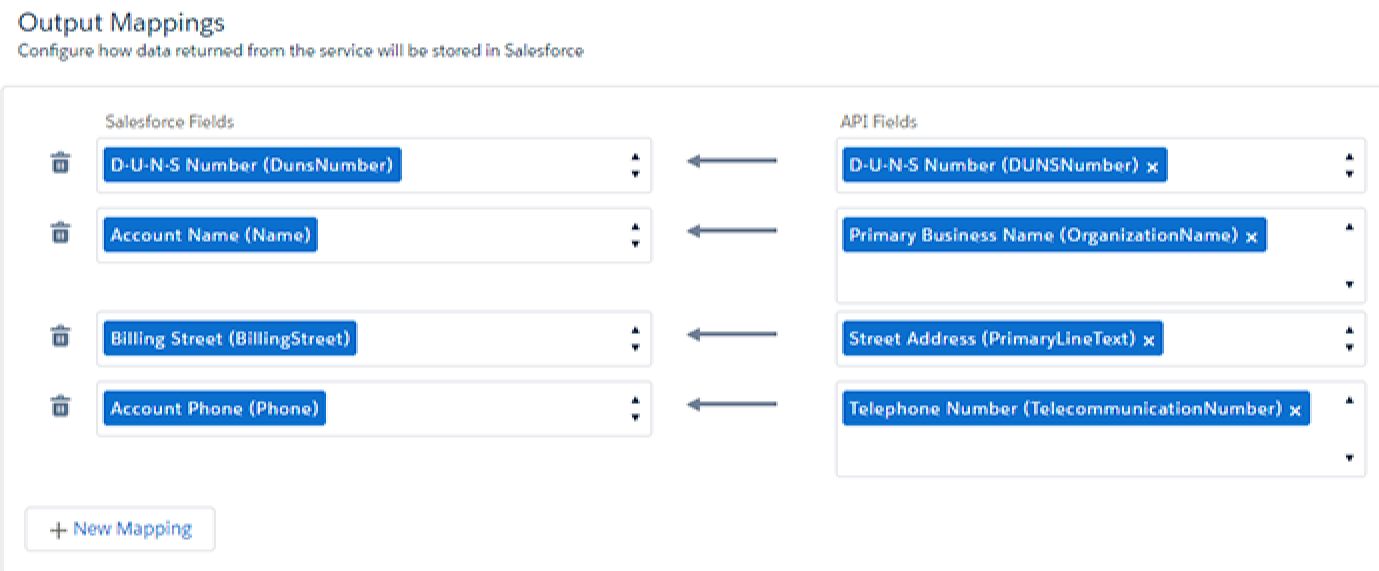
**Note:** The appended '__c' indicates that the Salesforce field is a custom one. Two required custom fields are for validation status and timestamp. The timestamp field must be a date / time format. See the **Setting Up Custom Fields** section of this document for information on this process. In the following examples, any blue option is a suggestion and may be deleted. The gray field cannot be replaced or removed.

---

## Dun & Bradstreet Enrichment Theme - Lookup Mapping

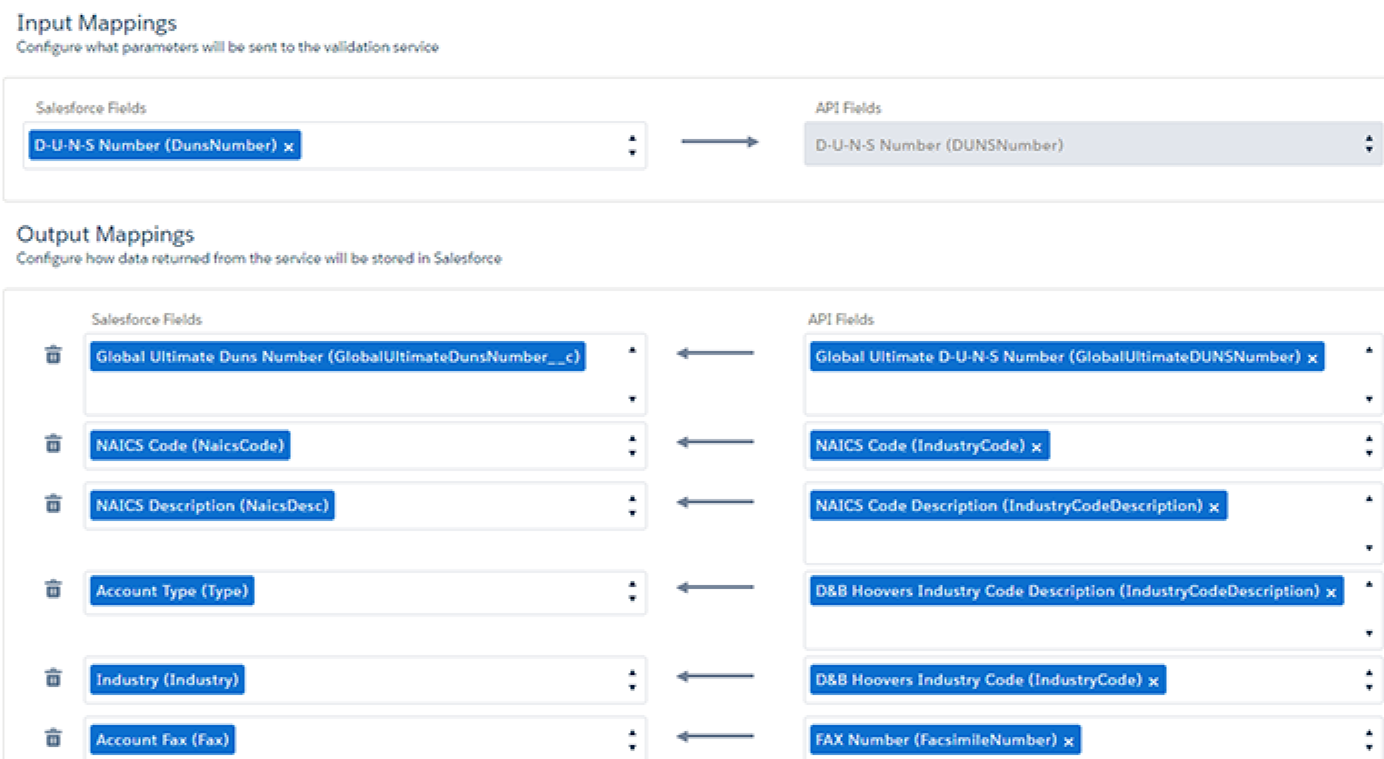
The output mappings will appear for the user on the DUNS Lookup Survival Page. For more information, see the **DUNS Lookup Survival Page** section of the Stibo SDQ User Guide.





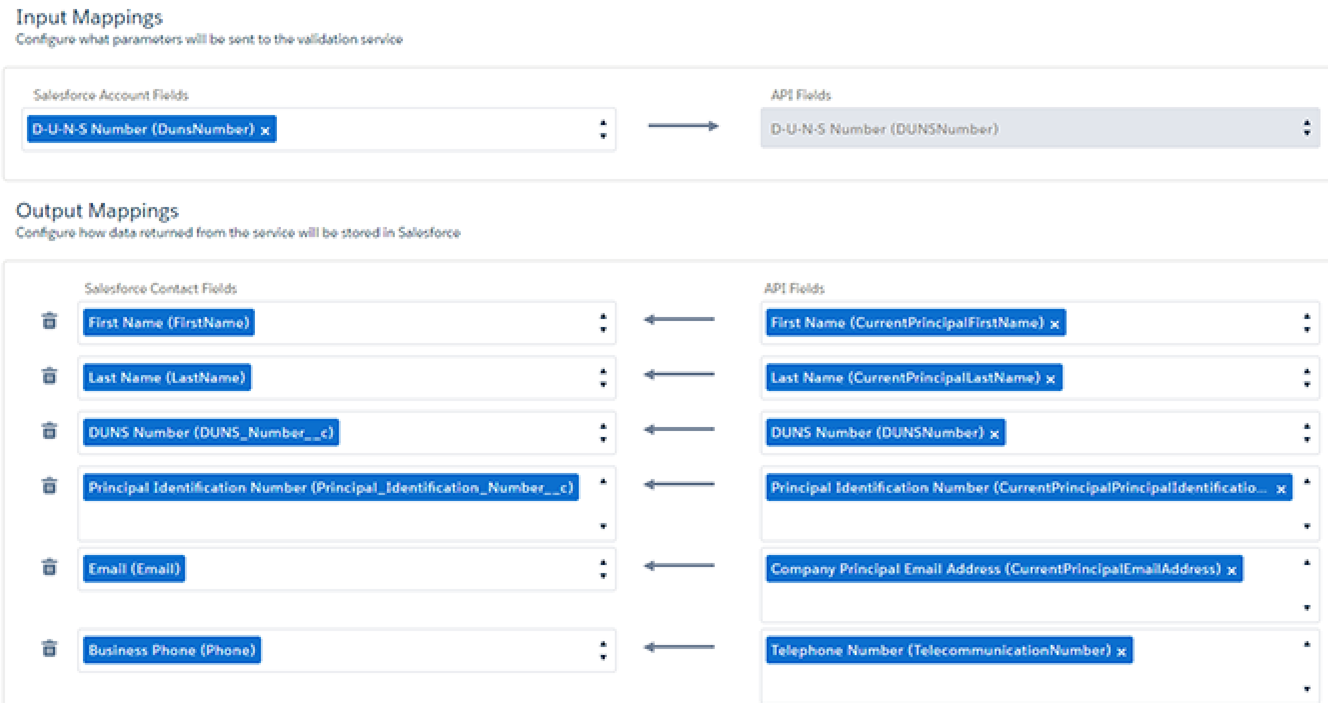

## Dun & Bradstreet Enrichment Theme - Enrichment Mapping

The following screenshot shows some 200+ possible options. The DUNS Number must be present for D&B Enrichment.



## Dun & Bradstreet Enrichment Theme - Contact Sync Mapping

For 'Contact Sync,' the expected input API fields, which are from the account, and output API fields, which are from the contact record, to match to are as follows. The DUNS Number must be present for D&B Contact Sync.



# Set Up a User Profile

Stibo SDQ introduces new features for standard users and Data Stewards. Standard users must be given access to certain Salesforce objects, so that they can get access to Real-Time Validation, D&B Enrichment, and Search Before Create features. Data Stewards must be setup as System administrators, so that they can access the Stibo SDQ Landing Page tab. The standard users who need to create records and may need access to some of the Visualforce pages will need a separate group with specified privileges to just see and access what they need.

---

**Important:** The MDM theme also requires a System Administrator account, see the 'Verify' subsection of the 'MDM Theme' section for more details.

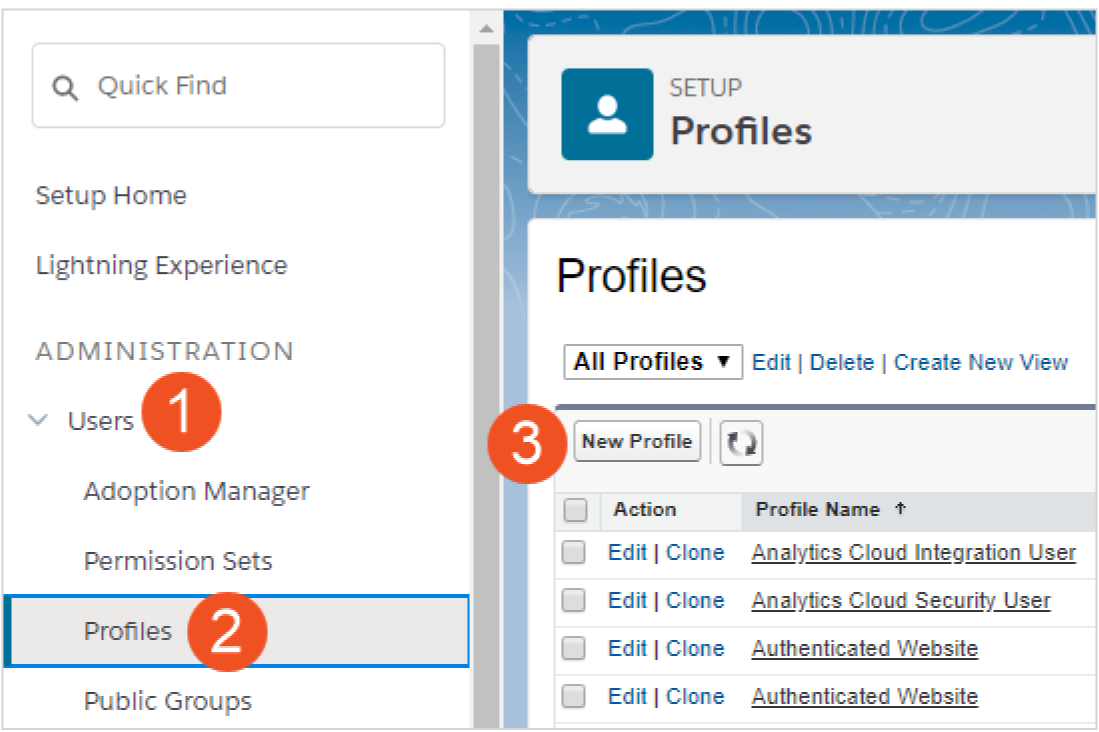
---

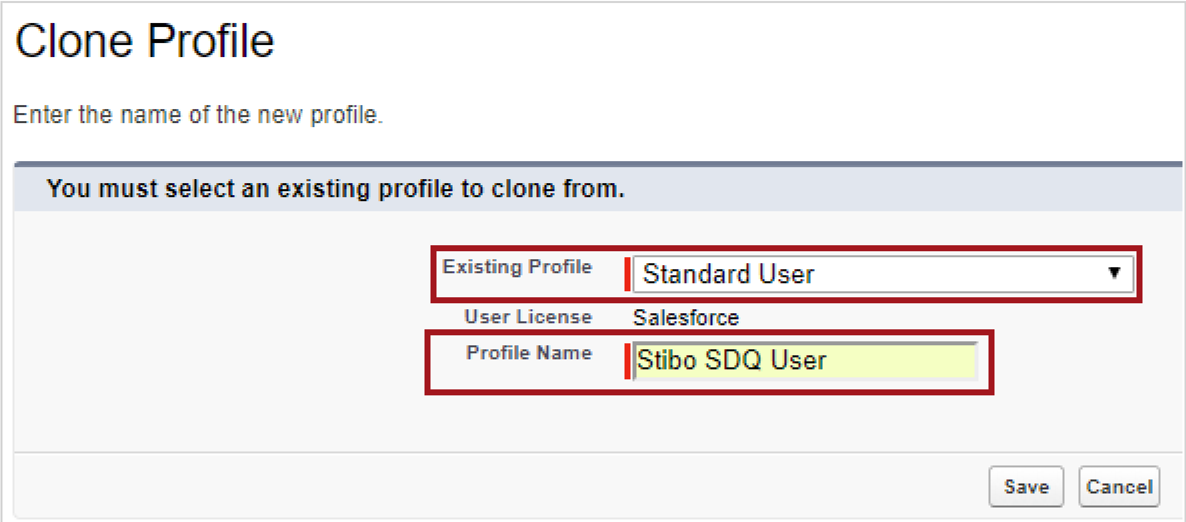
The following permissions are required for standard users:

- Access to the Visualforce pages so that standard users can validate and enrich data and create new records
- Access to the Error log object to allow these users to handle errors that may arise
- Access to Apex so that the code may run properly

## Select Profile

Navigate to the Users settings option in Setup. Then, create a new profile or select an existing profile that should have access to the Stibo SDQ native Salesforce functionality.

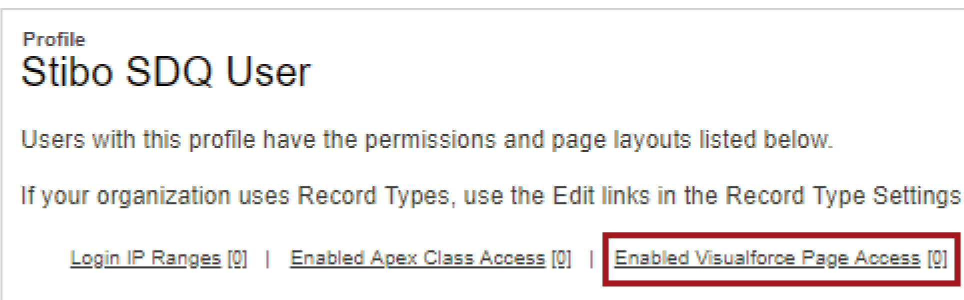


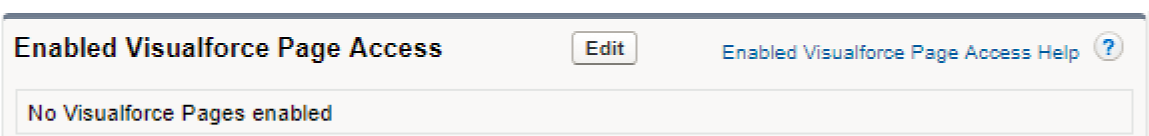



The next sections will show how to assign the appropriate permissions to the standard user profile.

## Visualforce Page Access

From the profile page, select the 'Enabled Visualforce Page Access' option. This action will send you to the 'Enabled Visualforce Page Access' panel. Select 'Edit' to add permissions.

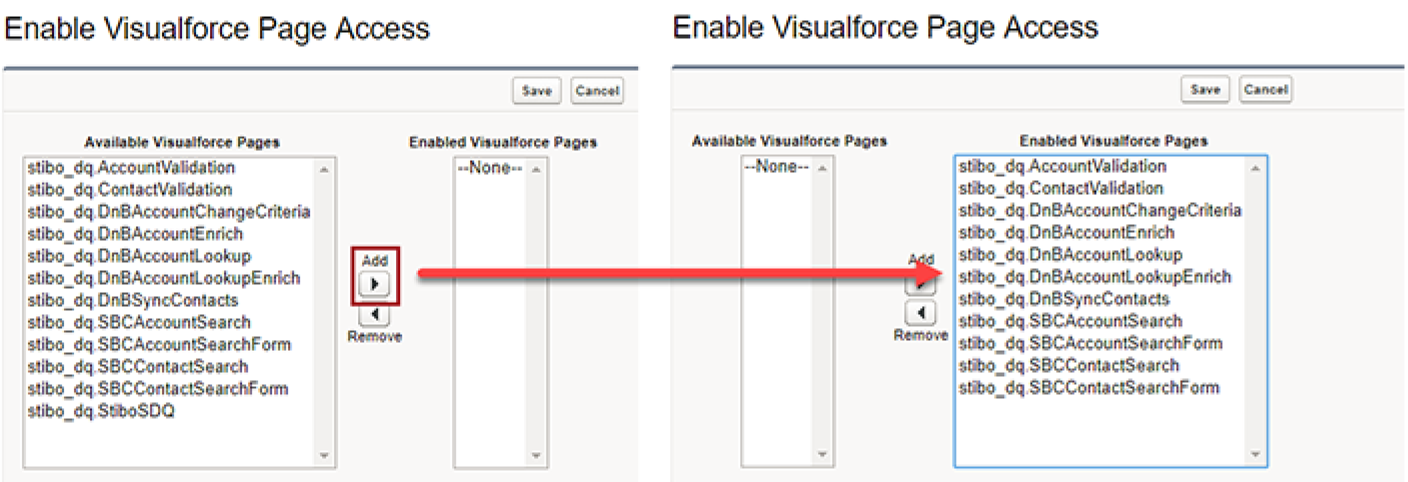



Add the following permissions by pressing the 'Add' arrow after selecting the permission from the left pane. It will move to the right pane. The permissions are:

1. stibo_dq.AccountValidation
2. stibo_dq.ContactValidation
3. stibo_dq.DnBAccountChangeCriteria

4. stibo_dq.DnBAccountEnrich
5. stibo_dq.DnBAccountLookup
6. stibo_dq.DnBAccountLookupEnrich
7. stibo_dq.DnBSyncContacts
8. stibo_dq.SBCAccountSearch
9. stibo_dq.SBCAccountSearchForm
10. stibo_dq.SBCContactSearch
11. stibo_dq.SBCContactSearchForm

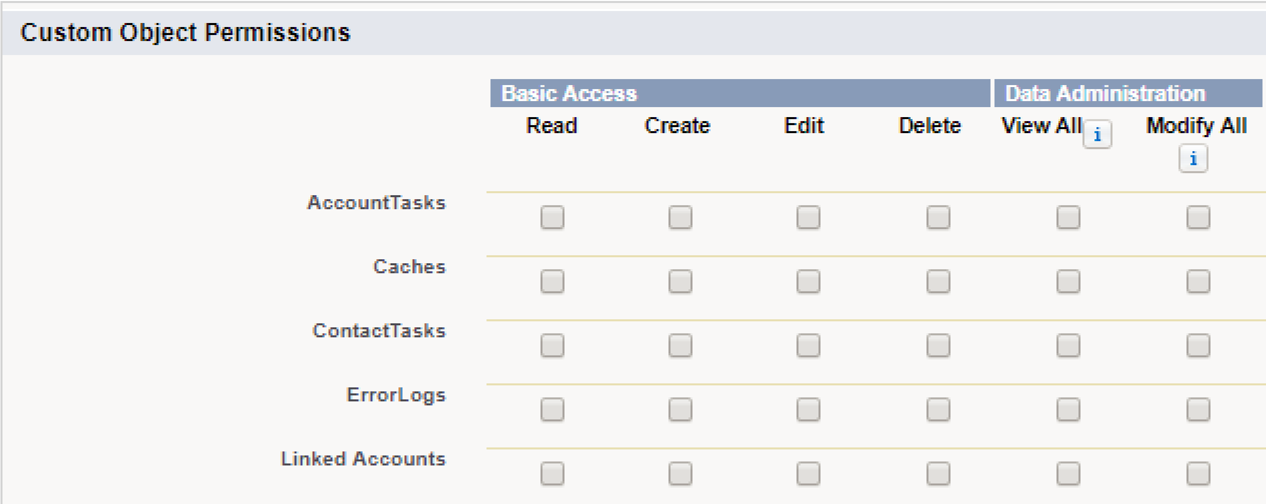


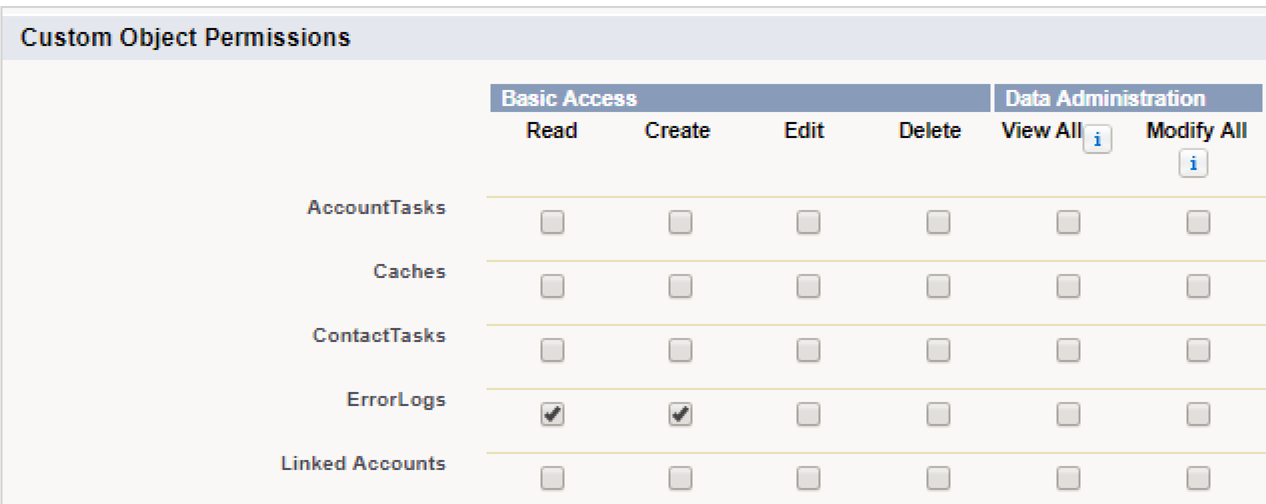

Select 'Save' to add these permissions.

## Error Log Object Access

Ensure that the Error Logs Custom Object has the creating and reading permissions. To do that, edit the profile that was modified in the last section.

Navigate to the 'Custom Object Permissions' section, then check the 'Read' and 'Create' boxes.

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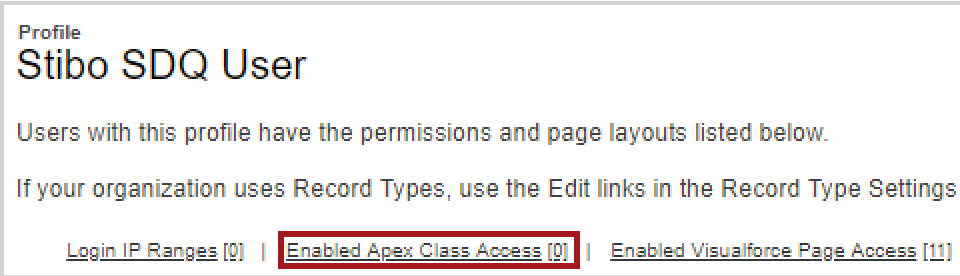
**Note:** Selecting 'Create' will automatically add the 'Read' permission.

---

Select the 'Save' button at the bottom to add these permissions.

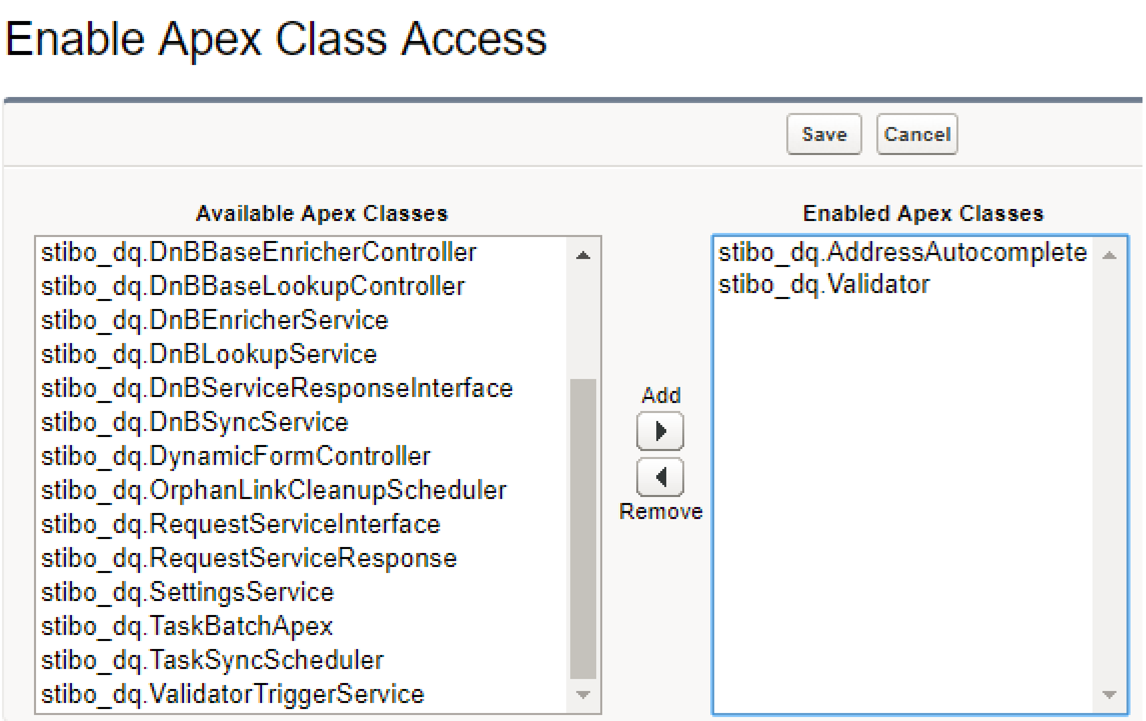
## Apex Class Access

To add Apex Class Access, select the Enabled Apex Class Access option near the top of the profile.




Select the Edit button on the Enabled Apex Class Access panel, and add the following permissions.

1. stibo_dq.AddressAutocomplete
2. stibo_dq.Validator


Select 'Save,' and the permissions will be added to the profile.

# Set Up Custom Fields

The Validation Status and Validation Timestamp are required fields in the Data Quality output section to create a record to show if a data object was validated and when this validation was performed. However, these two fields are not standard Salesforce fields and must first be created with custom fields. The custom fields may be used in any mapping. For an idea of the fields that may be needed for mapping, see the address, email, and phone section of the **Configure Mappings** section of this guide.

Users are strongly advised against manual modification of those fields' values. They are used for making the decision of whether validation happens or not.

Users should prefix the Status and Timestamp field to be prefixed with the unique identifier for the field / fields that are being validated in addition to 'Validation' and 'Status' or 'Timestamp,' depending on which field you are creating. Status fields should be of type 'Text Area' and Timestamp fields should be of type 'Date / Time.'

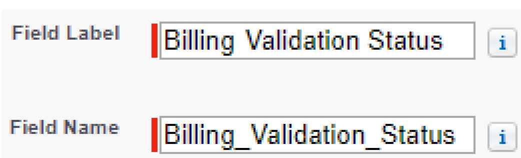
The following examples show how Validation Status and Validation Timestamps work with various objects.

1. Billing Address fields would look something like this. This should be repeated for all address types, such as Mailing, Other, etc. where address validation is activated.
   - Validation Status field

     Field Label: Billing Address Validation Status

     Field Name: Billing_Address_Validation_Status

     Field Type: Text Area

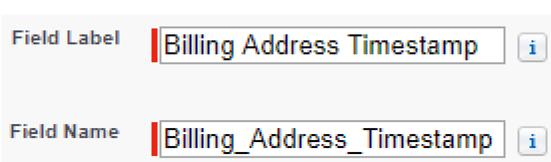



   - Validation Timestamp field

     Field Label: Billing Address Validation Timestamp

     Field Name: Billing_Address_Validation_Timestamp

     Field Type: Date/Time

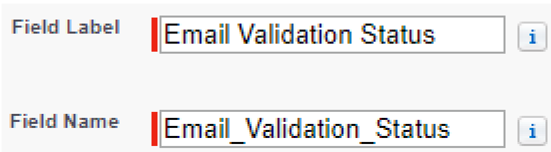



2. Email
   - Validation Status field

Field Label: Email Validation Status

Field Name: Email_Validation_Status

Field Type: Text Area

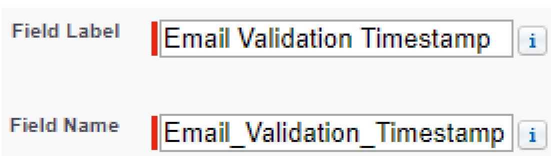



- Validation Timestamp field

  Field Label: Email Validation Timestamp

  Field Name: Email_Validation_Timestamp

  Field Type: Date/Time

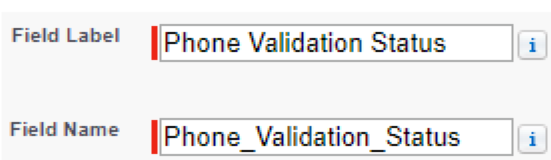



3. Phone validation would look like this. This should be repeated for all phone types, such as Home, Mobile, etc., where address validation is activated.
   - Validation Status field

     Field Label: Phone Validation Status

     Field Name: Phone_Validation_Status

     Field Type: Text Area

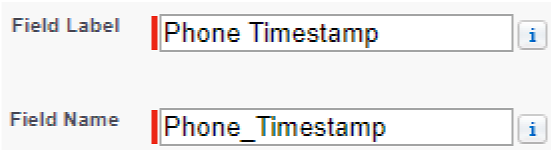



   - Validation Timestamp field

     Field Label: Phone Validation Timestamp

     Field Name: Phone_Validation_Timestamp

     Field Type: Date/Time




If the user wants to map an API field to a custom field, it is required that this a custom field is of type which can contain text (String) (e.g., Text, Text Area, Text Area(Long), Text Area(Rich), etc.) because all of the response field values are returned as String. The max length of that field may vary based on the length of the result, which this field may contain. Most fields will work fine with Text Area.

The exception of the API fields list would be the Validation Timestamp where this is a Date / Time.

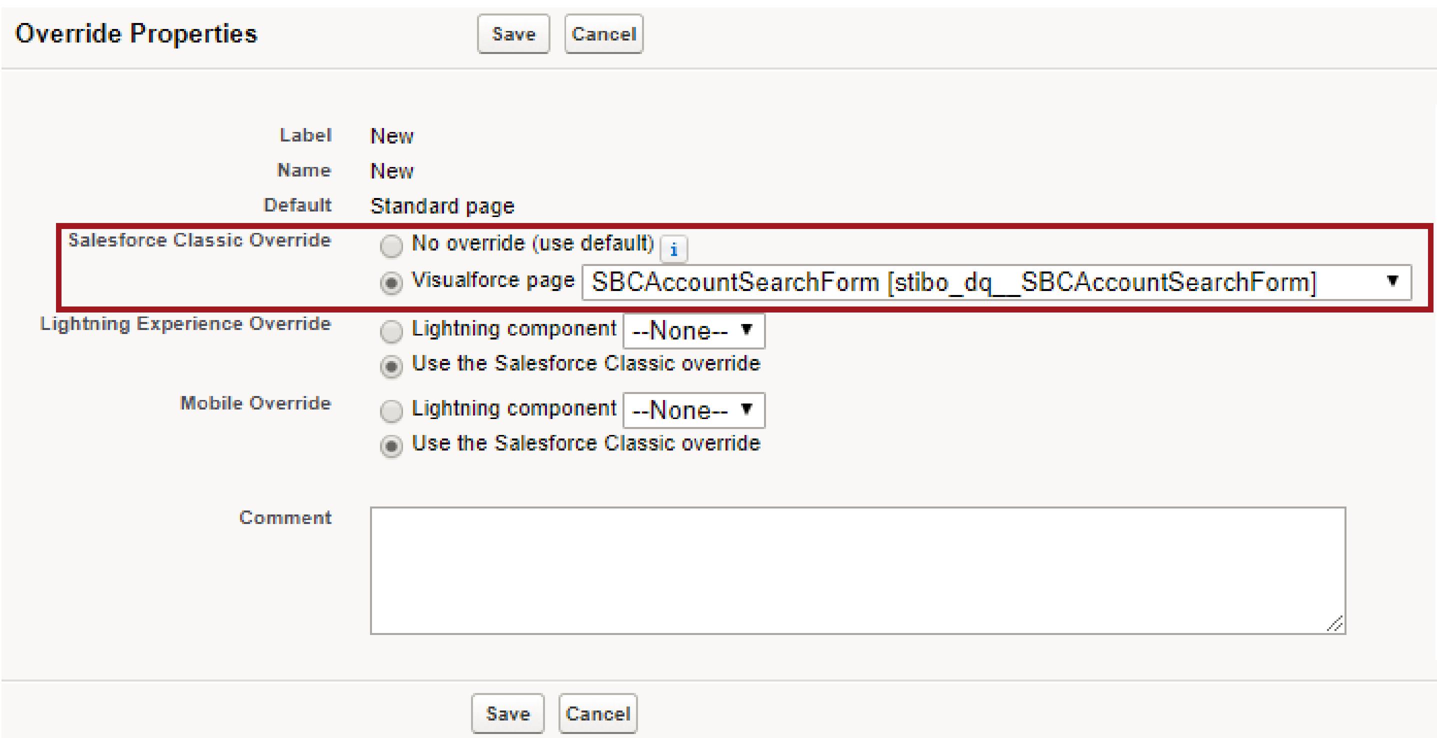
# Button Customization Setup

The following section will detail how to create buttons configured Salesforce actions. In this guide, those actions are changing how the Create button works.

## Create Override

Admins must customize the Salesforce 'New' button. To do that, select Setup > Object Manager > Account or Contact > Buttons, Links, and Actions > New. The Override properties screen will display. Change the Salesforce Classic Override to SBCAccountSearchForm for the Visualforce page for Accounts. For Contacts, change the Salesforce Classic Override to SBCContactSearchForm.

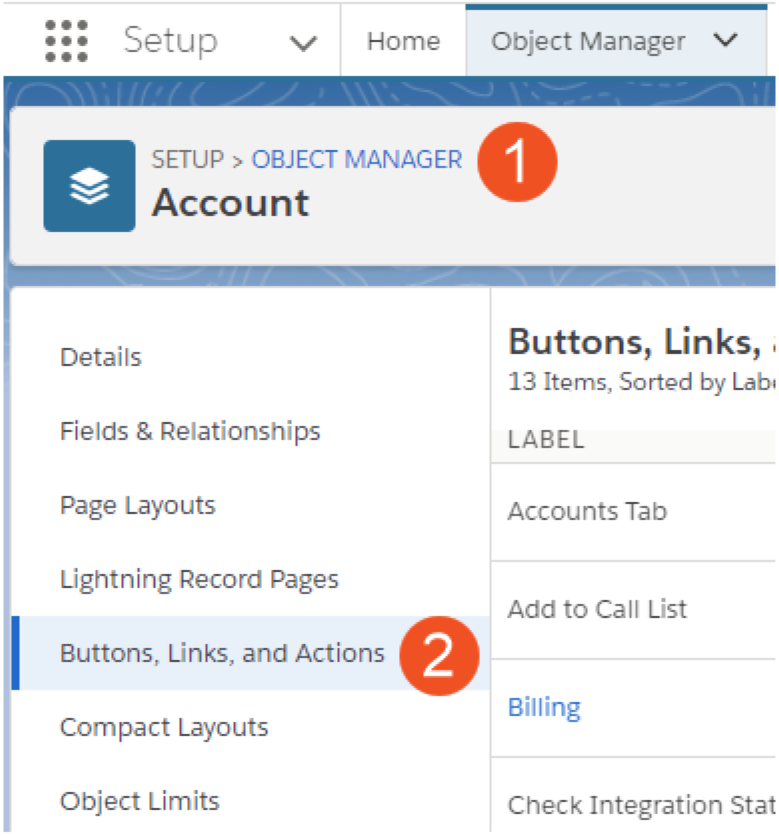
**Note:** This has to be done for either the New Account or both New Account and New Contact buttons. Person Accounts use Account's New button.



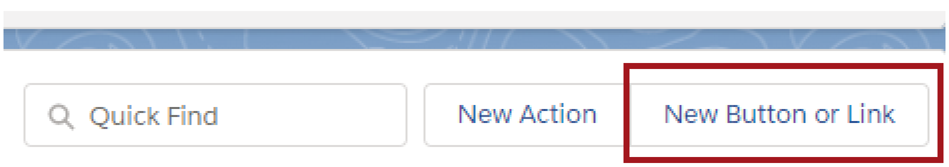

## Adding D&B Buttons

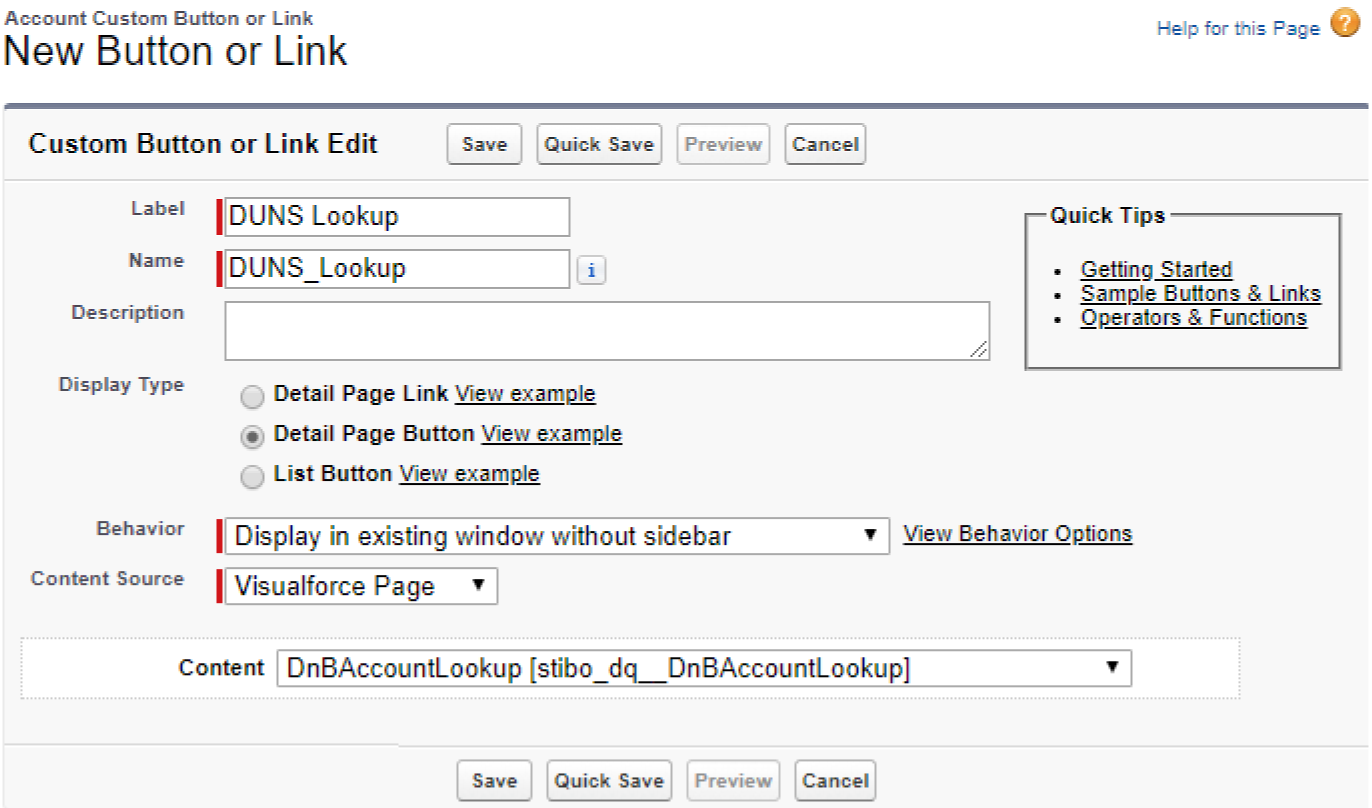
For the D&B Enrichment theme, some D&B buttons must be added to the details pages.

Navigate to the Object Manager in Setup, and then, navigate to Account object to add the buttons. In this example, the D&B buttons can be configured via the Account page (Setup > Object Manager > Account > Buttons, Links, and Actions).




Select the 'New Button or Link' option to prompt the 'New Button or Link' page.






In the above screenshot, the DUNS Lookup button is created and, once saved, will need to be added to the Account page. The Contact Sync and Enrichment buttons will also need to be created. The parameters for these buttons are:

## D&B Lookup Button

Label: **DUNS Lookup**

Name: **DUNS_Lookup**

Display Type: **Detail Page Button**

Behavior: **Display in existing window without sidebar**

Content Source: **Visualforce Page**

Content: **DnBAccountLookup [stibo_dq_DnBAccountLookup]**

## D&B Enrichment Button

Label: **D&B Enrich**

Name: **DnB_Enrich**

Display Type: **Detail Page Button**

Behavior: **Display in existing window without sidebar**

Content Source: **Visualforce Page**

Content: **DnBAccountEnrich [stibo_dq_DnBAccountEnrich]**

## D&B Sync Contacts Button

Label: **D&B Sync Contacts**

Name: **DnB_Sync_Contacts**

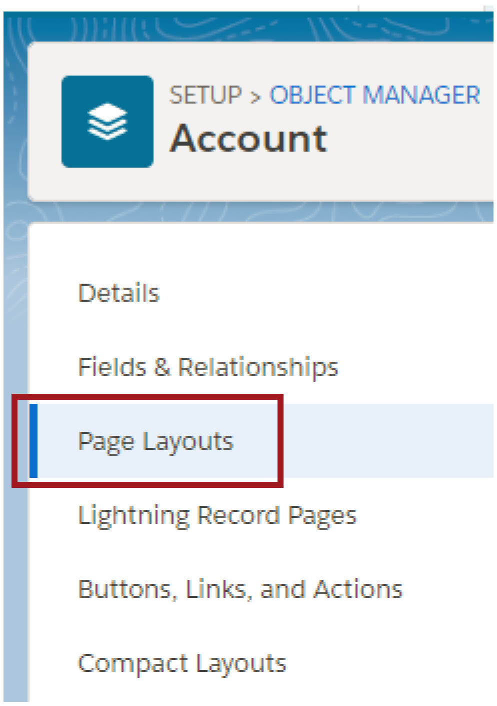
Display Type: **Detail Page Button**

Behavior: **Display in existing window without sidebar**

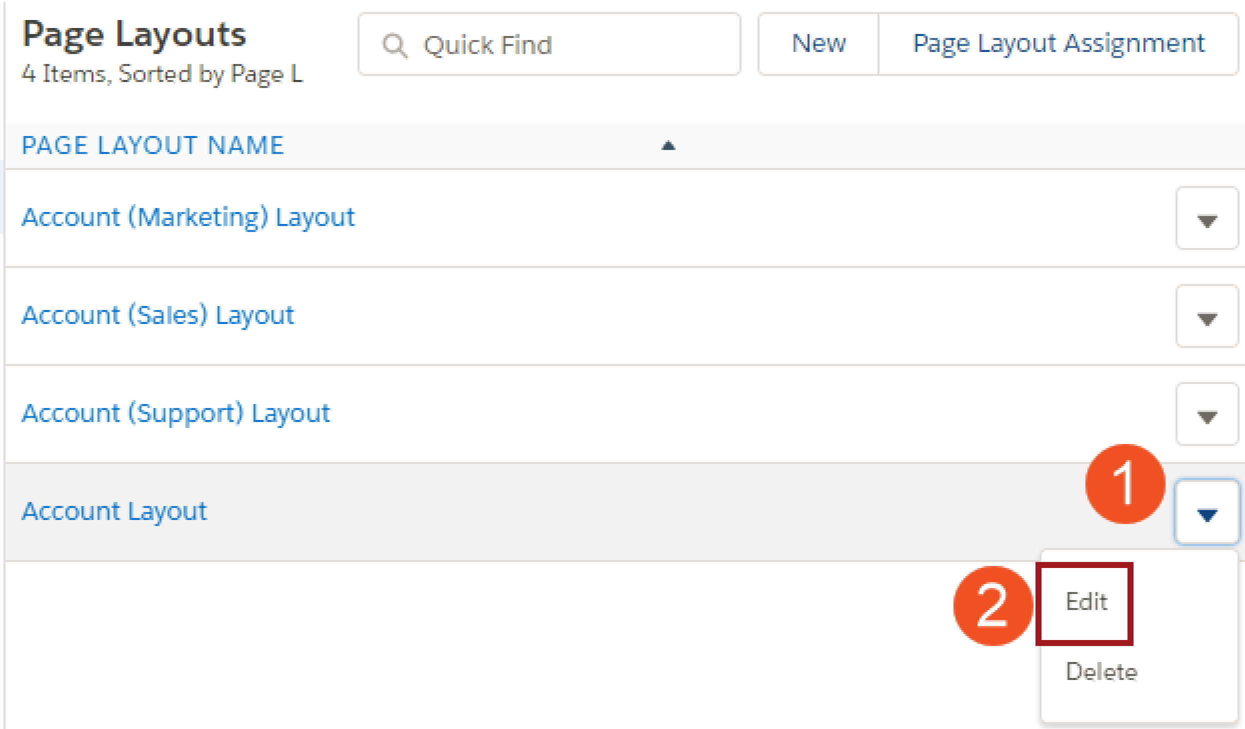
Content Source: **Visualforce Page**

Content: **DnBSyncContacts [stibo_dq_DnBSyncContacts]**

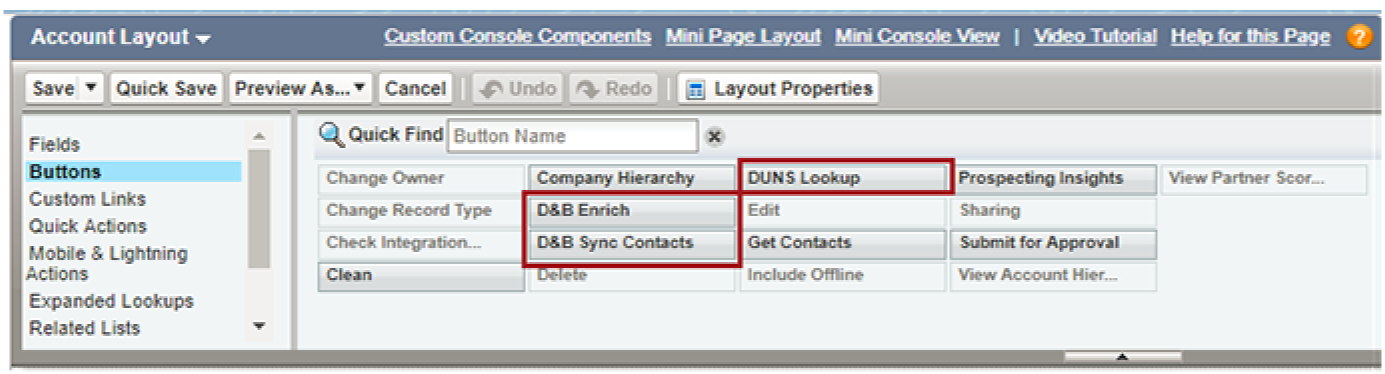
After creating each button, they will need to be added to the page layout. To do that, from the Setup > Object Manager > Account page, select **Page Layouts**.

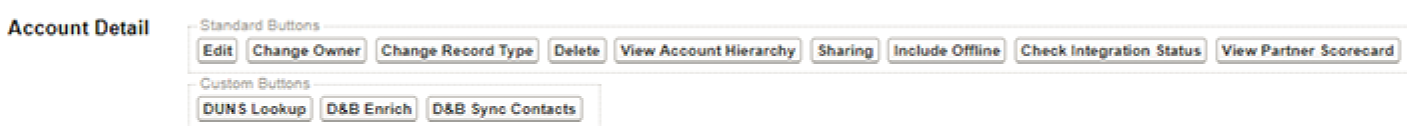



On the 'Account Layout' entry, select the 'Edit' option.



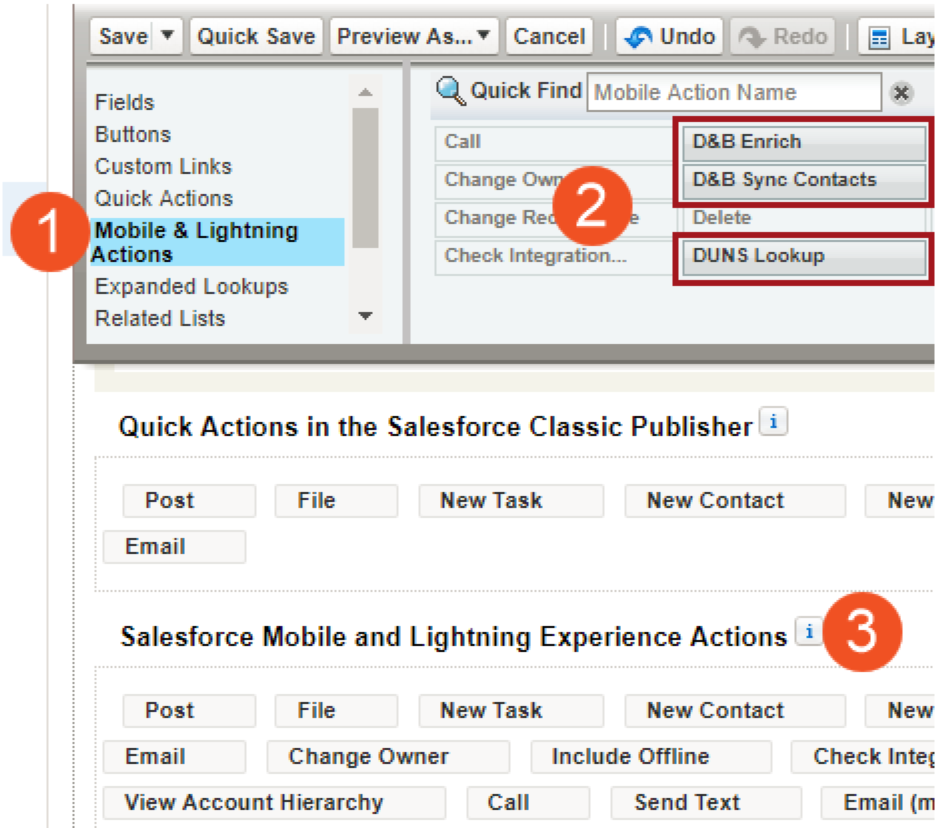

To add buttons to the Classic view, in the Account Layout panel, select the 'Buttons' option in the field to the left. Then, select the DUNS Lookup, D&B Enrich, and D&B Sync Contacts buttons from the buttons field. These buttons are dragged (left-click and hold the desired button then, while holding left mouse button slide your mouse to the location) into the 'Custom Buttons' section of the Account Detail panel.



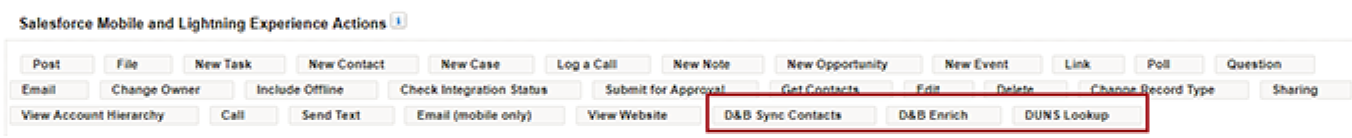




To add buttons for Lightning Experience and the Salesforce1 mobile app, switch to the 'Mobile & Lightning Actions' option in the left pane. Drag the DUNS Lookup, D&B Enrich, and D&B Sync Contacts buttons into the Salesforce Mobile and Lightning Experience Actions box.

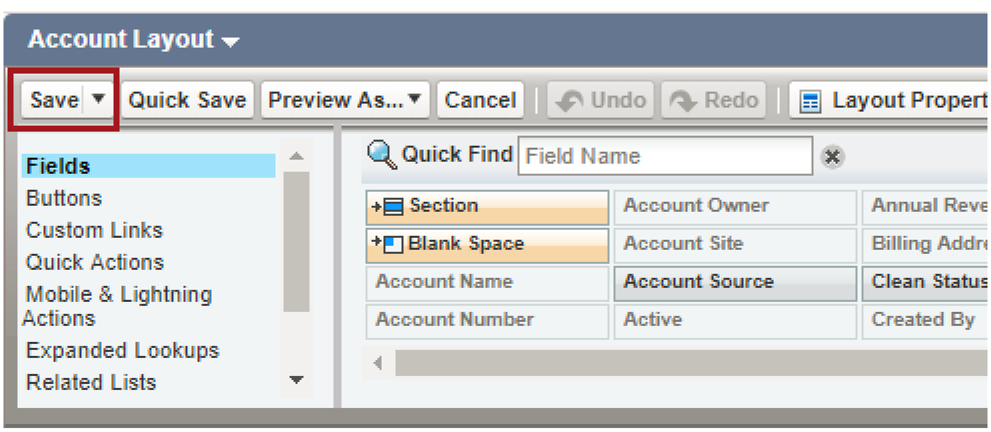
**Note:** If only one view is used, then there is no requirement to add buttons to the unused view.




Once completed, the Salesforce Mobile and Lightning Experience will look like this:




Select the 'Save' button above the buttons panel to save the changes.



# Async Validation

To take full advantage of the data quality functionality, Data Quality Mappings with enabled (Web-to-Object) flag are highly recommended, and all of the validation triggers must be present and active. Select the checkbox when mapping fields.


Validation will be performed on:

- Record Creation, if a value is entered for a field which is configured in a Data Quality mapping, and the Validation Status and Validation Timestamp fields are empty.
- Record Modification, if a value is modified for a field which is configured in a Data Quality mapping, or if any modification is made to the object and there is a field which is configured in a Data Quality mapping.

---

**Note:**
This is an asynchronous process and might take some time to be performed after record saving. If a value is modified for a field which is configured in a Data Quality mapping and the validation triggers are present then, before the actual update of the record, Validation Status and Validation Timestamp fields' values will be set to empty regardless of if you have Async Validation (Web-to-Object) enabled. Then, only if you have Async Validation (Web-to-Object) enabled, after a short delay, validation will be performed and the record will be updated with relevant data which is configured in the output section of the Data Quality mapping.

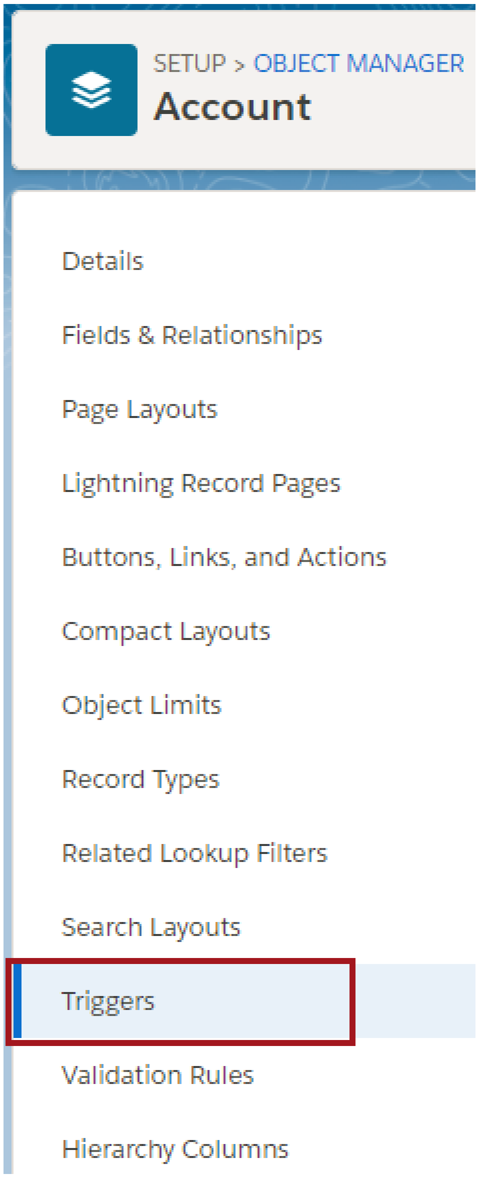
Validation will NOT be performed if the user is creating a record through Search Before Create functionality and validation has already been performed on the initial screen.

---

### Account Validation Triggers

Before any input can be validated, triggers must be configured. To configure triggers for the Account object:

Navigate to Setup > Object Manager > Accounts > **Triggers**.



The Apex Trigger editing page will load. In the Apex Trigger field, enter the following code snippet:

```
trigger StiboAccountValidationStatus on Account (before insert, before
update) {

        if (Trigger.isInsert) {

                stibo_dq.ValidatorTriggerService.prepareSObjects(Trigger.new);

        } else if (Trigger.isUpdate) {

                stibo_dq.ValidatorTriggerService.prepareSObjects(Trigger.new,
Trigger.oldMap);

        }

}
```

Select 'Save,' and navigate back to the Object Manager > Account > **Triggers** page. Create another new trigger with the following code:

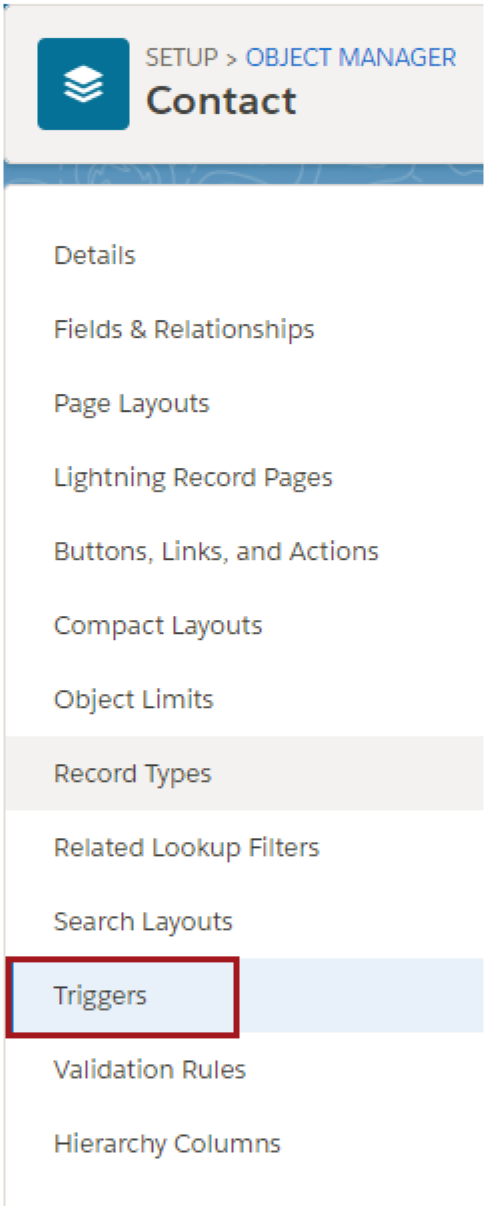
```
trigger StiboAccountAsyncValidation on Account (after insert, after
update) {

        stibo_dq.ValidatorTriggerService.validateSobjects(Trigger.new);

}
```

Save the trigger.

## Contact Validation Triggers

Before any input can be validated, triggers must be configured. To configure triggers for the Account object:

Navigate to Setup > Object Manager > Contact > **Triggers**.


SETUP > OBJECT MANAGER
Contact
Details
Fields & Relationships
Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Object Limits
Record Types
Related Lookup Filters
Search Layouts
Triggers
Validation Rules
Hierarchy Columns

The Apex Trigger editing page will load. In the Apex Trigger field, enter the following code snippet:

```
trigger StiboContactValidationStatus on Contact (before insert, before
update) {
        if (Trigger.isInsert) {
                stibo_dq.ValidatorTriggerService.prepareSObjects(Trigger.new);
        } else if (Trigger.isUpdate) {
                stibo_dq.ValidatorTriggerService.prepareSObjects(Trigger.new,
Trigger.oldMap);
        }
}
```

Select 'Save,' and navigate back to the Object Manager > Contact > **Triggers** page. Create another new trigger with the following code:

```
trigger StiboContactAsyncValidation on Contact (after insert, after
update) {
        stibo_dq.ValidatorTriggerService.validateSobjects(Trigger.new);
}
```

Save the trigger.

## Scheduling a Task Synchronizer

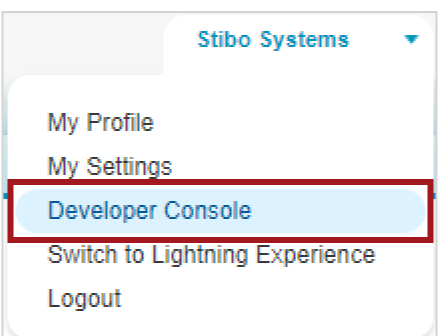
To see and review Clerical review tasks in Stibo SDQ, the Task Synchronizer must be started and scheduled. This process is done in the Developer's Console.

---

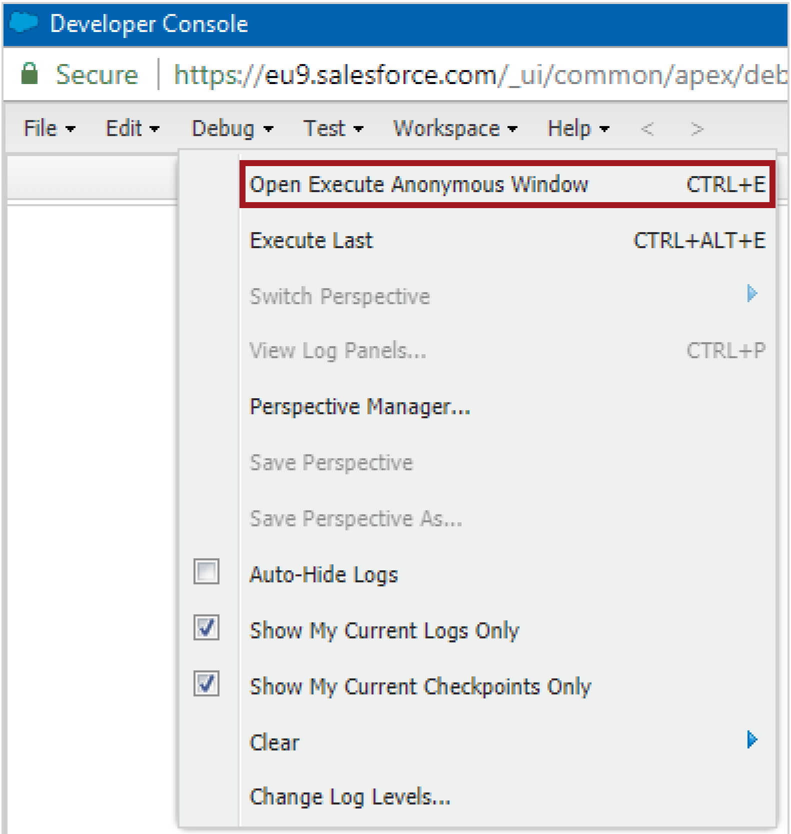
**Note:** The Developer's Console is most easily accessible from the Classic Experience. This section will be done in that view.

---

In Salesforce, open the Developer's Console by selecting the user name dropdown, then selecting 'Developer Console.'



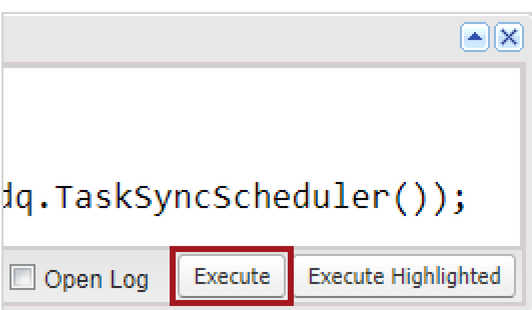

In the Developer Console, select Debug > **Open Execute Anonymous Window**.



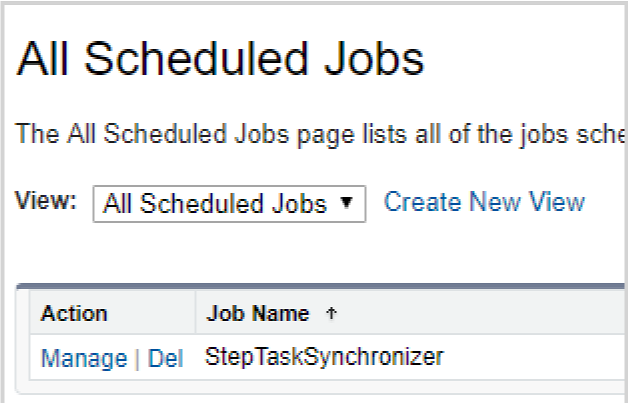

Enter the following string, modifying minutes and hour to the desired time. In the following example, the time will run at 5:30PM, local user time:

```
String minutes = '30';

String hour = '17';

System.schedule('StepTaskSynchronizer', '0 ' + minutes + ' ' + hour + ' *
* ?', new stibo_dq.TaskSyncScheduler());
```

Select 'Execute' to run the code. Note, that if there is other text in the console, you can highlight the above code then select the 'Execute Highlighted' to only run that selected code.




To check the scheduled jobs, go to Setup > **Scheduled Jobs**. These can be unscheduled by deleting it from the UI.




Linking functionality requires using a custom object that links two Standard Salesforce object (Account or Contact). The two linked objects in Salesforce are called 'Master' and 'Lookup'. When a Master object is deleted the custom link object is deleted as well, but when a Lookup object is deleted, the link custom object is not deleted. This is a Salesforce limitation, and it can lead to 'orphans'.

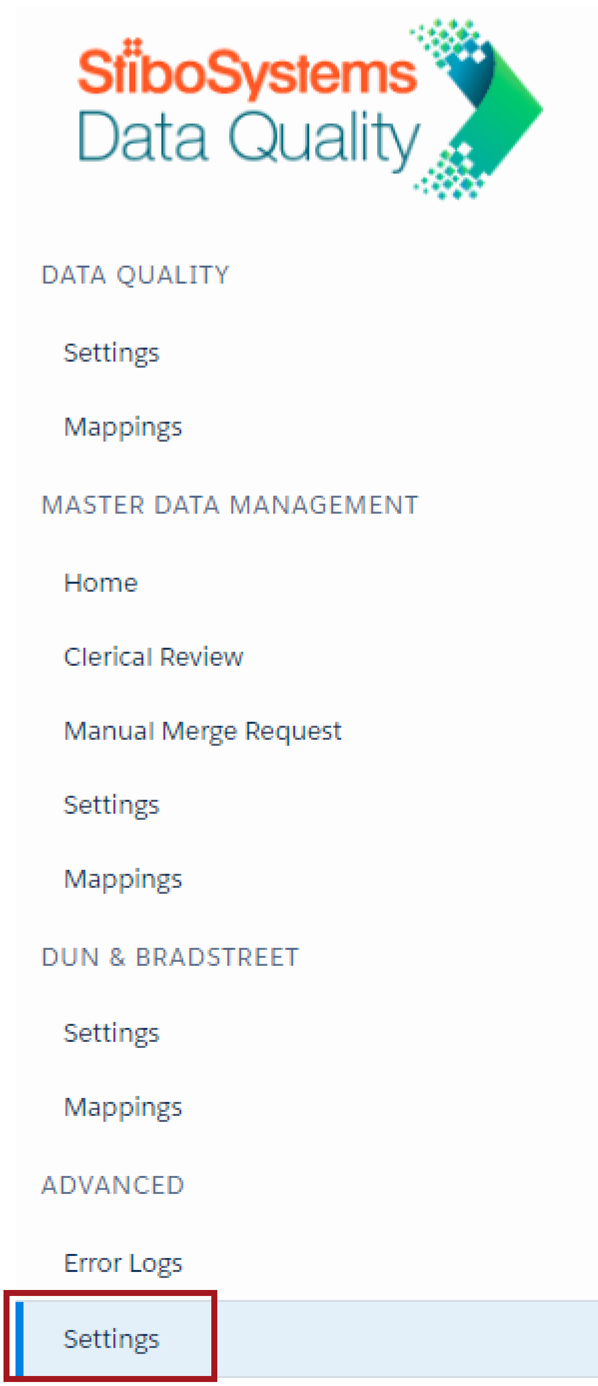
To schedule an orphan cleaning task, run the following command in Development console:

```
System.schedule('OrphanLinkCleanupScheduler', '0 0 0 * * ? *', new
OrphanLinkCleanupScheduler());
```

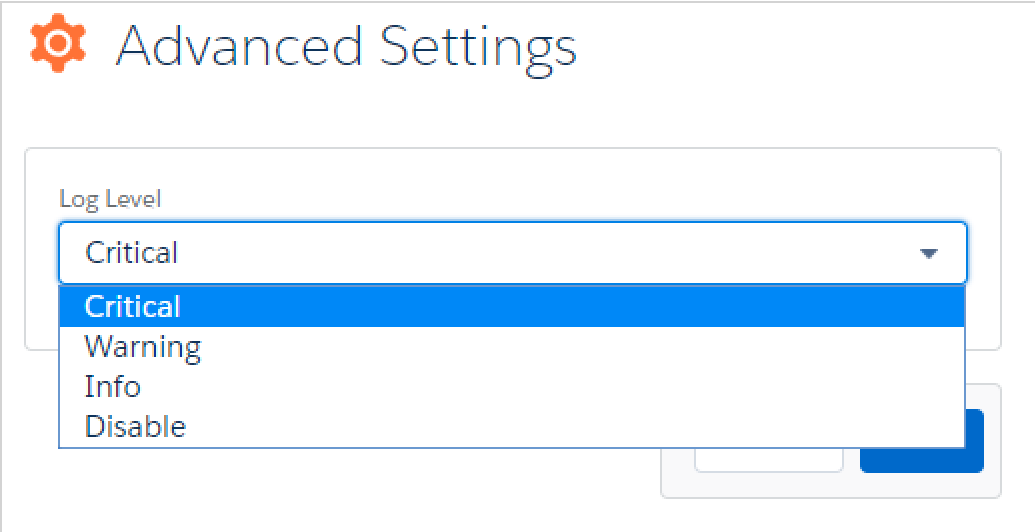
This Schedule job will run every 24 hours at 12:00 pm, making sure all of the linking orphans are cleaned up.

# Advanced Error Logging

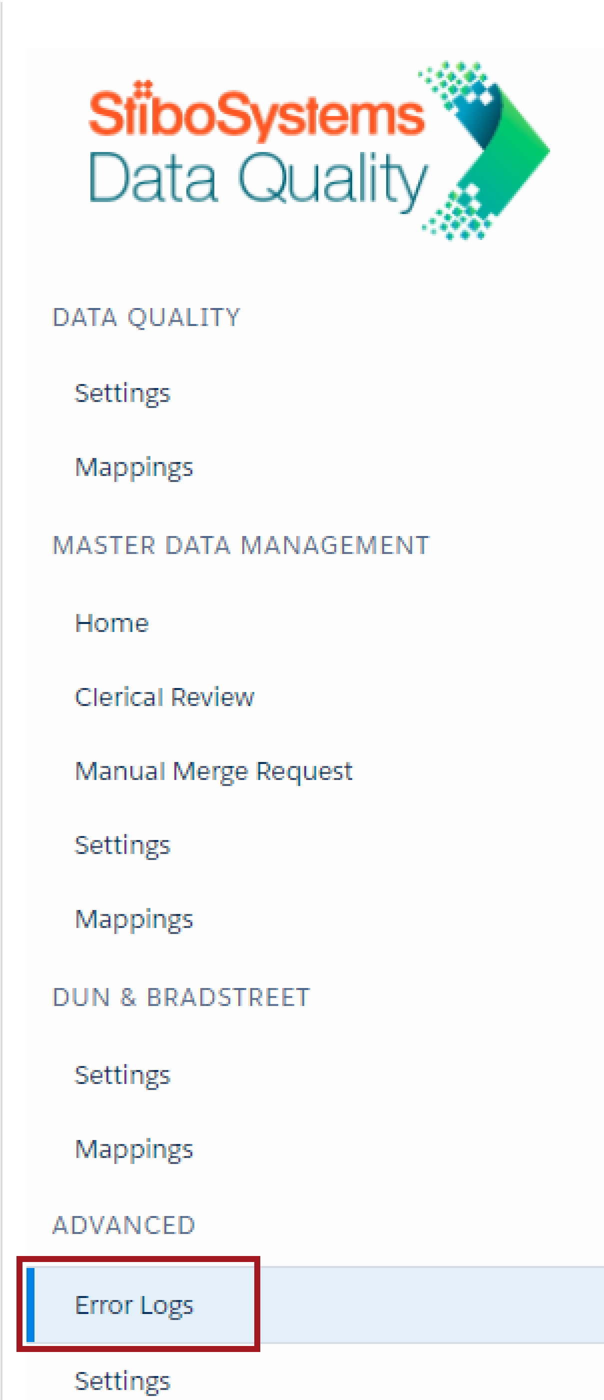
To track various issues within Stibo SDQ, an advanced error log is available. To generate important and meaningful error messages, you must ensure that the log level is set to at least 'Critical.' To check this setting, under Advanced on the left navigational panel, select 'Settings.'



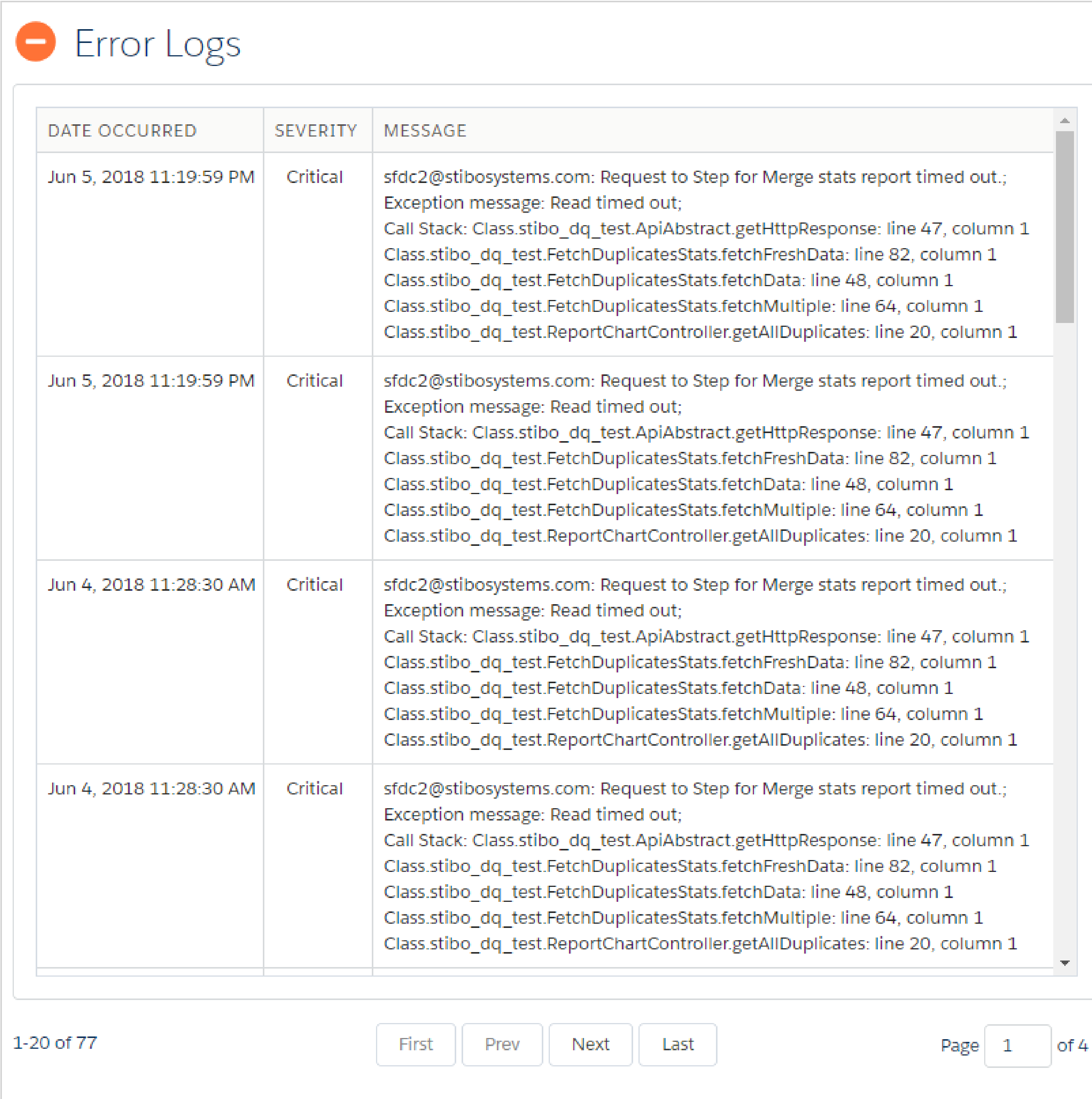

The log level can be seen on this screen. The options are 'Critical,' 'Warning,' 'Info,' or 'Disabled.'




After this level is set, the error log will collect all errors at that level or greater. To see these logs, from the side navigation bar, select 'Error Logs' under 'Advanced.'




The reports will show the date that they occurred, the severity of the error, and any generated messages to help with troubleshooting.


# Error Logs

| DATE OCCURRED | SEVERITY | MESSAGE |
|---|---|---|
| Jun 5, 2018 11:19:59 PM | Critical | sfdc2@stibosystems.com: Request to Step for Merge stats report timed out.; Exception message: Read timed out; Call Stack: Class.stibo_dq_test.ApiAbstract.getHttpResponse: line 47, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchFreshData: line 82, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchData: line 48, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchMultiple: line 64, column 1 Class.stibo_dq_test.ReportChartController.getAllDuplicates: line 20, column 1 |
| Jun 5, 2018 11:19:59 PM | Critical | sfdc2@stibosystems.com: Request to Step for Merge stats report timed out.; Exception message: Read timed out; Call Stack: Class.stibo_dq_test.ApiAbstract.getHttpResponse: line 47, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchFreshData: line 82, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchData: line 48, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchMultiple: line 64, column 1 Class.stibo_dq_test.ReportChartController.getAllDuplicates: line 20, column 1 |
| Jun 4, 2018 11:28:30 AM | Critical | sfdc2@stibosystems.com: Request to Step for Merge stats report timed out.; Exception message: Read timed out; Call Stack: Class.stibo_dq_test.ApiAbstract.getHttpResponse: line 47, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchFreshData: line 82, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchData: line 48, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchMultiple: line 64, column 1 Class.stibo_dq_test.ReportChartController.getAllDuplicates: line 20, column 1 |
| Jun 4, 2018 11:28:30 AM | Critical | sfdc2@stibosystems.com: Request to Step for Merge stats report timed out.; Exception message: Read timed out; Call Stack: Class.stibo_dq_test.ApiAbstract.getHttpResponse: line 47, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchFreshData: line 82, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchData: line 48, column 1 Class.stibo_dq_test.FetchDuplicatesStats.fetchMultiple: line 64, column 1 Class.stibo_dq_test.ReportChartController.getAllDuplicates: line 20, column 1 |



**Note:** There is no way to automatically delete old logs.

# Stibo SDQ Appendices

## Additional Salesforce Administrator Information

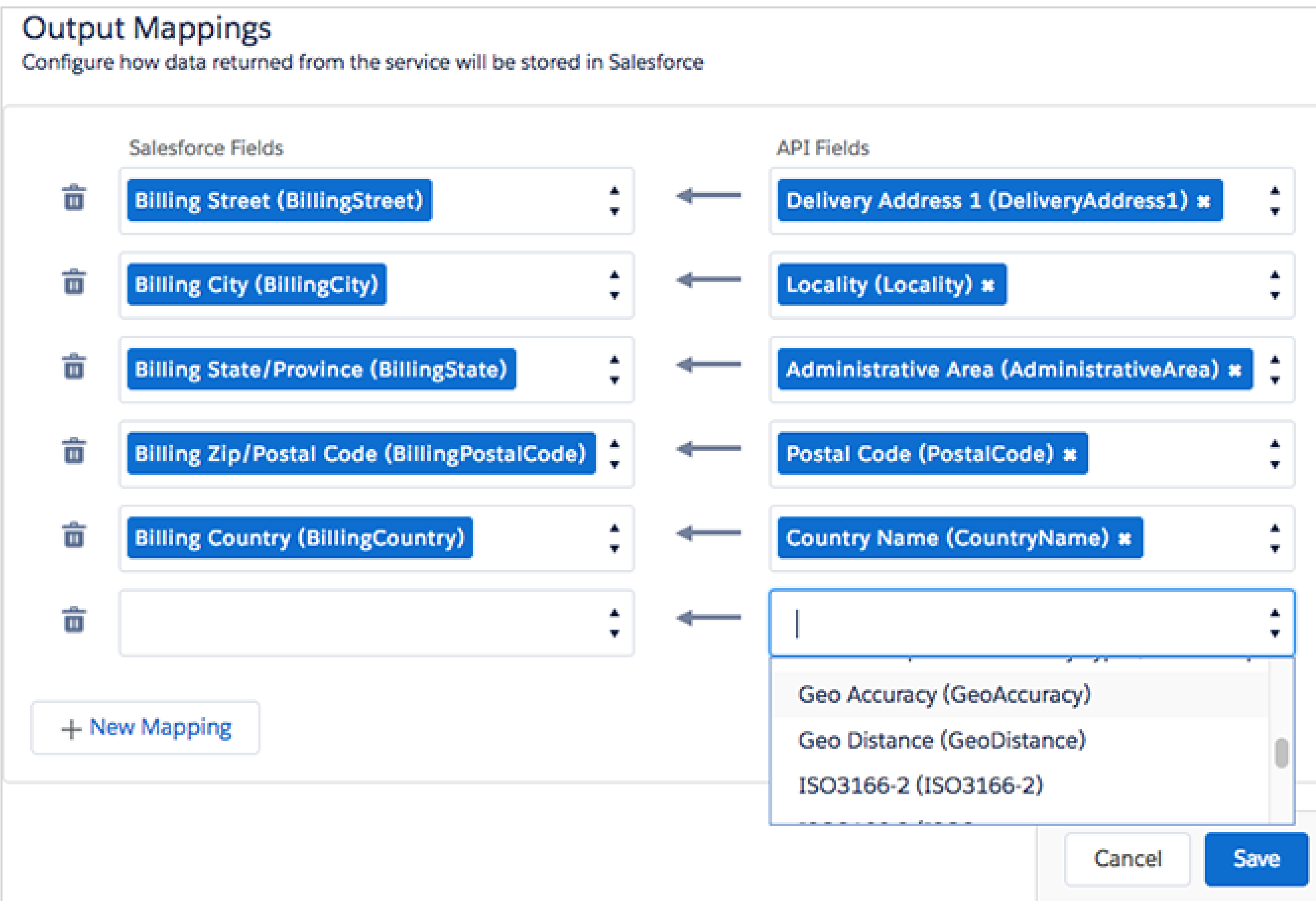
Stibo SDQ provides a great deal of functionality. However, some options require additional configurations.

- To receive email notifications, particularly when there is an error, see the **Email Notifications** topic.

## Address Field Descriptions Appendix

As part of the real-time contact data validation, Stibo SDQ interacts with a service that exposes a range of data for addresses. In the implementation described in the **Real-time Contact Data Validation - Address Mapping** section in this guide, only a subset of this data is stored in Salesforce.

Additional data may be extracted from this service and used to enrich address information. This extra data requires additional output mappings. See the **Real-time Contact Data Validation - Address Mapping** section of this guide for more information.

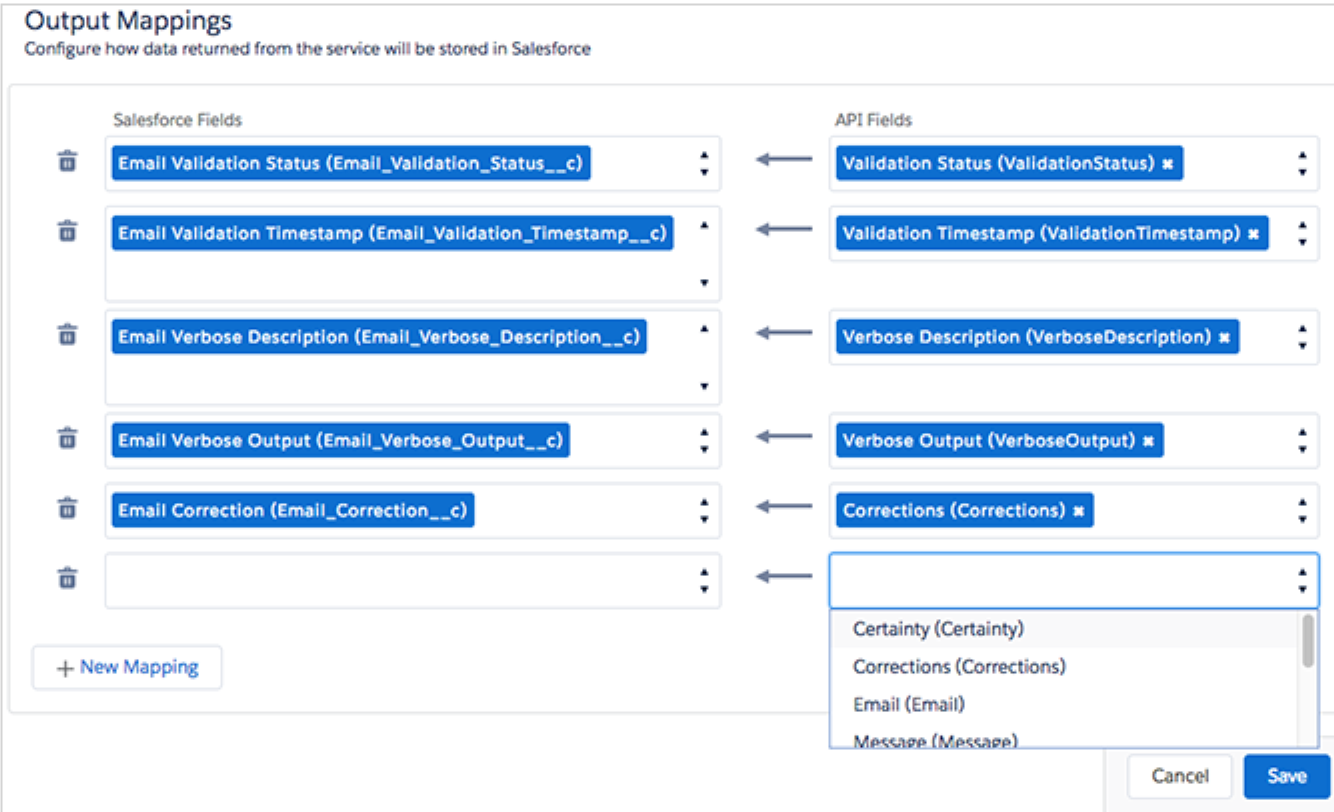



To see a selection of address fields, see the **Address Field Descriptions**.

# Email Field Descriptions Appendix

As part of the real-time contact data validation, Stibo SDQ interacts with a service that exposes a range of data for email addresses. In the implementation described in the **Real-time Contact Data Validation - Email Mapping** section in this guide, only a subset of this data is stored in Salesforce.

Additional data may be extracted from this service and used to enrich email information. This extra data requires additional output mappings. See the **Real-time Contact Data Validation - Email Mapping** section of this guide for more information.

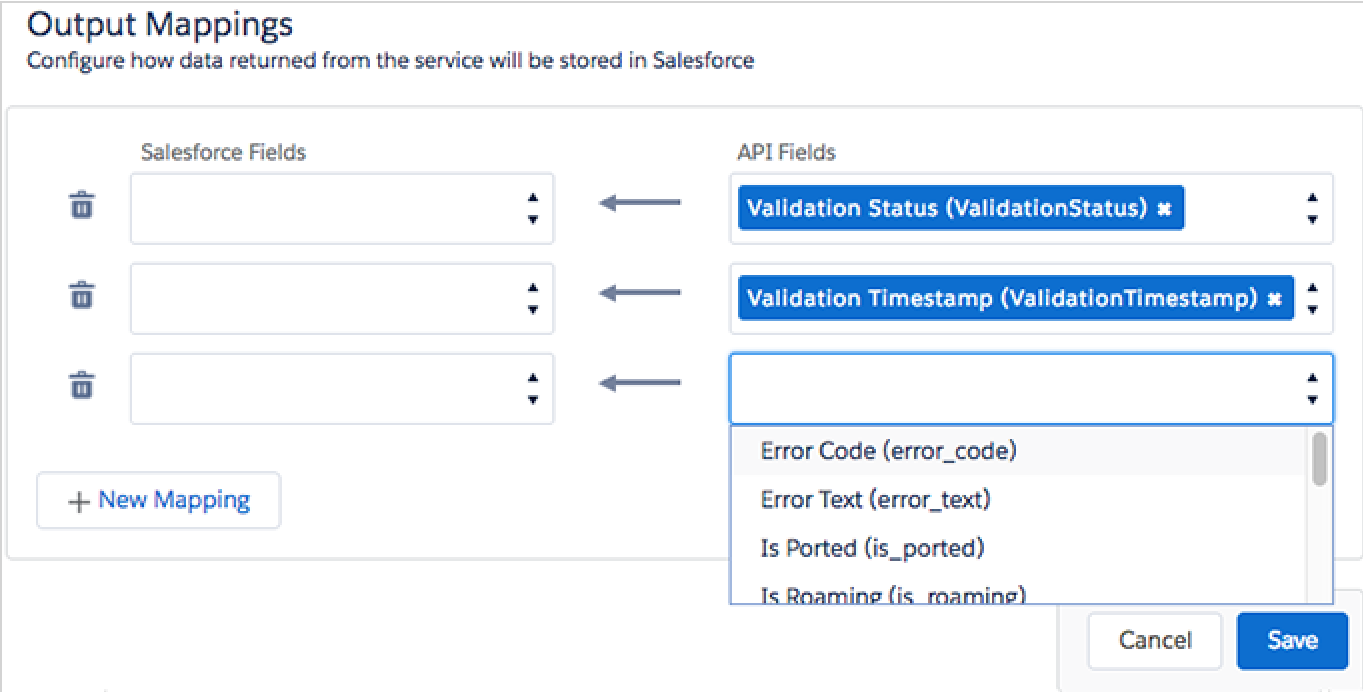



To see a selection of email fields, see the **Email Field Descriptions**.

# Phone Field Descriptions Appendix

As part of the real-time contact data validation, Stibo SDQ interacts with a service that exposes a range of data for phone numbers. In the implementation described in the **Real-time Contact Data Validation - Phone Mapping** section in this guide, only a subset of this data is stored in Salesforce.

Additional data may be extracted from this service and used to enrich phone information. This extra data requires additional output mappings. See the **Real-time Contact Data Validation - Phone Mapping** section of this guide for more information.




To see a selection of phone fields, see the **Phone Field Descriptions**.

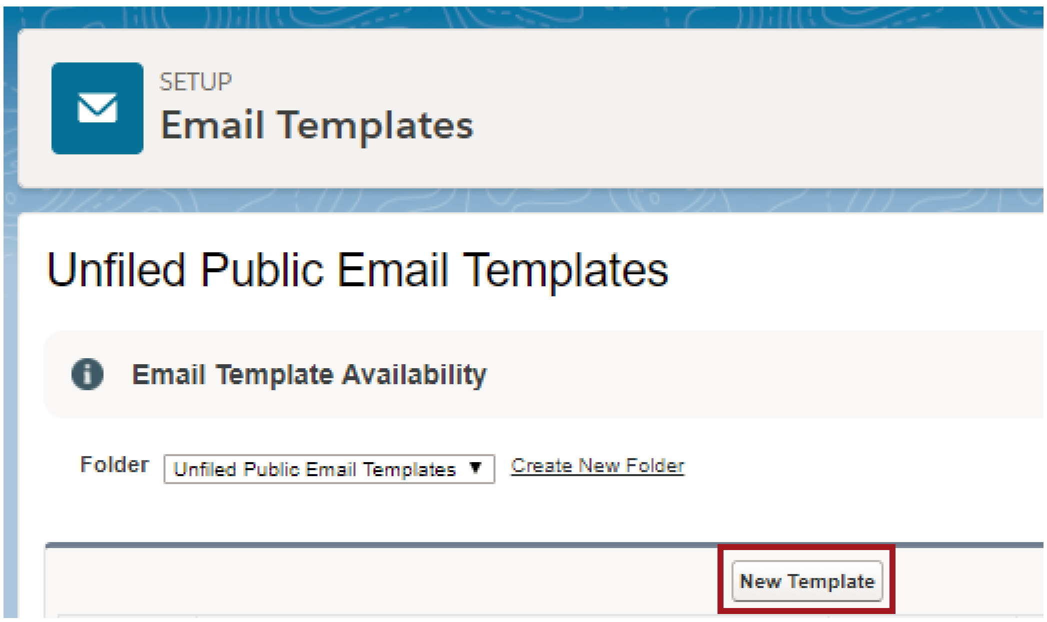
# Configuring Email Notifications

Salesforce Administrators may configure notifications to be emailed to their account when an error is triggered. To configure these notifications:

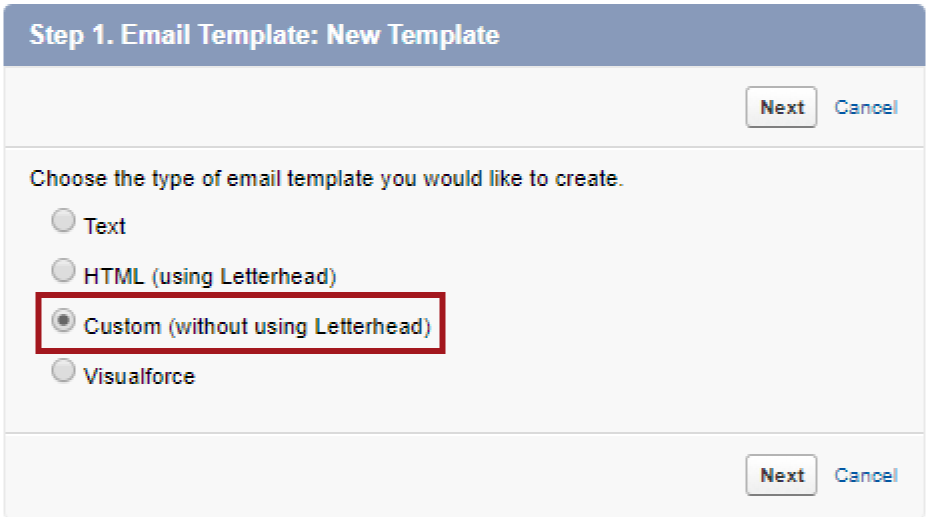
1. Create an Email Template
2. Create an Email Alert
3. Create the Process that uses the Email Alert

## Create an Email Template

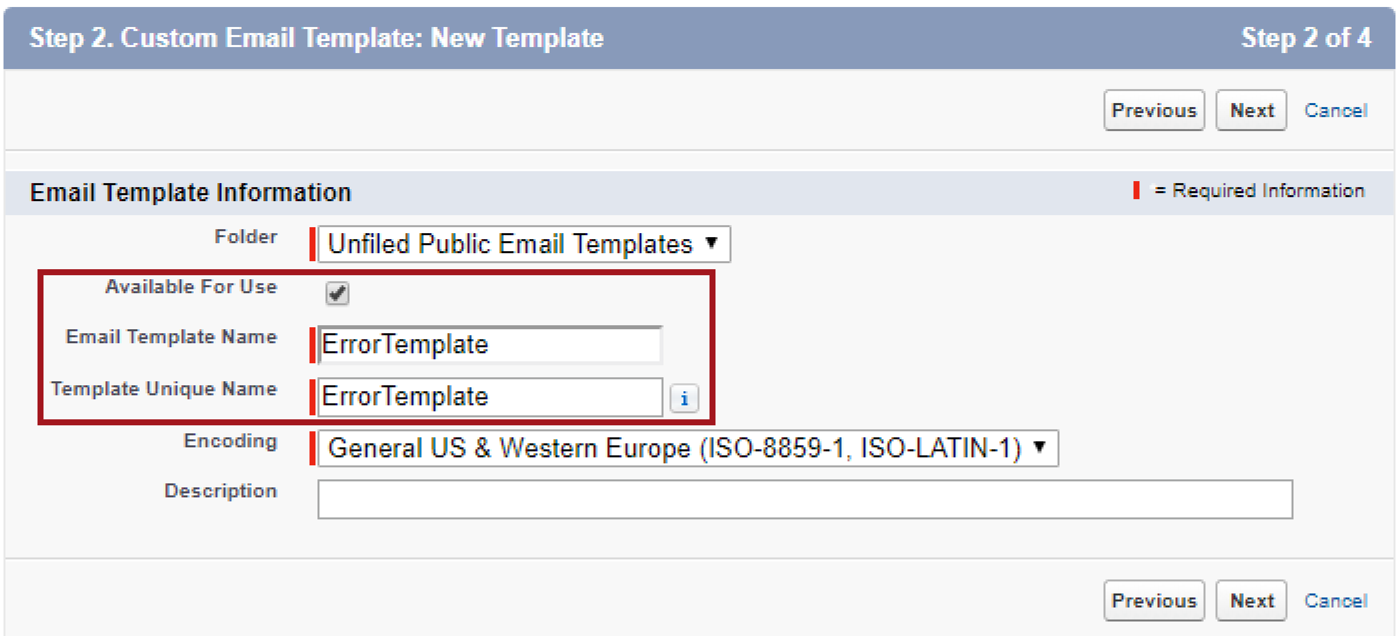
1. Open Setup > Email Templates
2. On the Email Templates page, select 'New Template.'




3. Select 'Custom (without using Letterhead)' and click Next.




4. Enter an Email template name, check the 'Available for Use' checkbox, and then select Next.



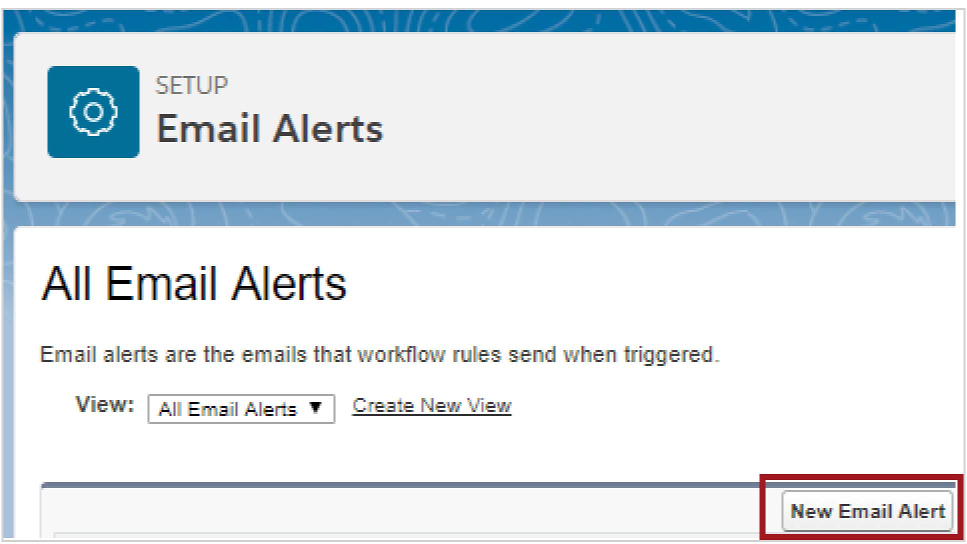

5. On the 'Create HTML version' step of the process, enter a Subject for the email template as well as the following two parameters:

- {!stibo_dq__ErrorLog__c.stibo_dq__Severity__c}
- {!stibo_dq__ErrorLog__c.stibo_dq__Message__c}

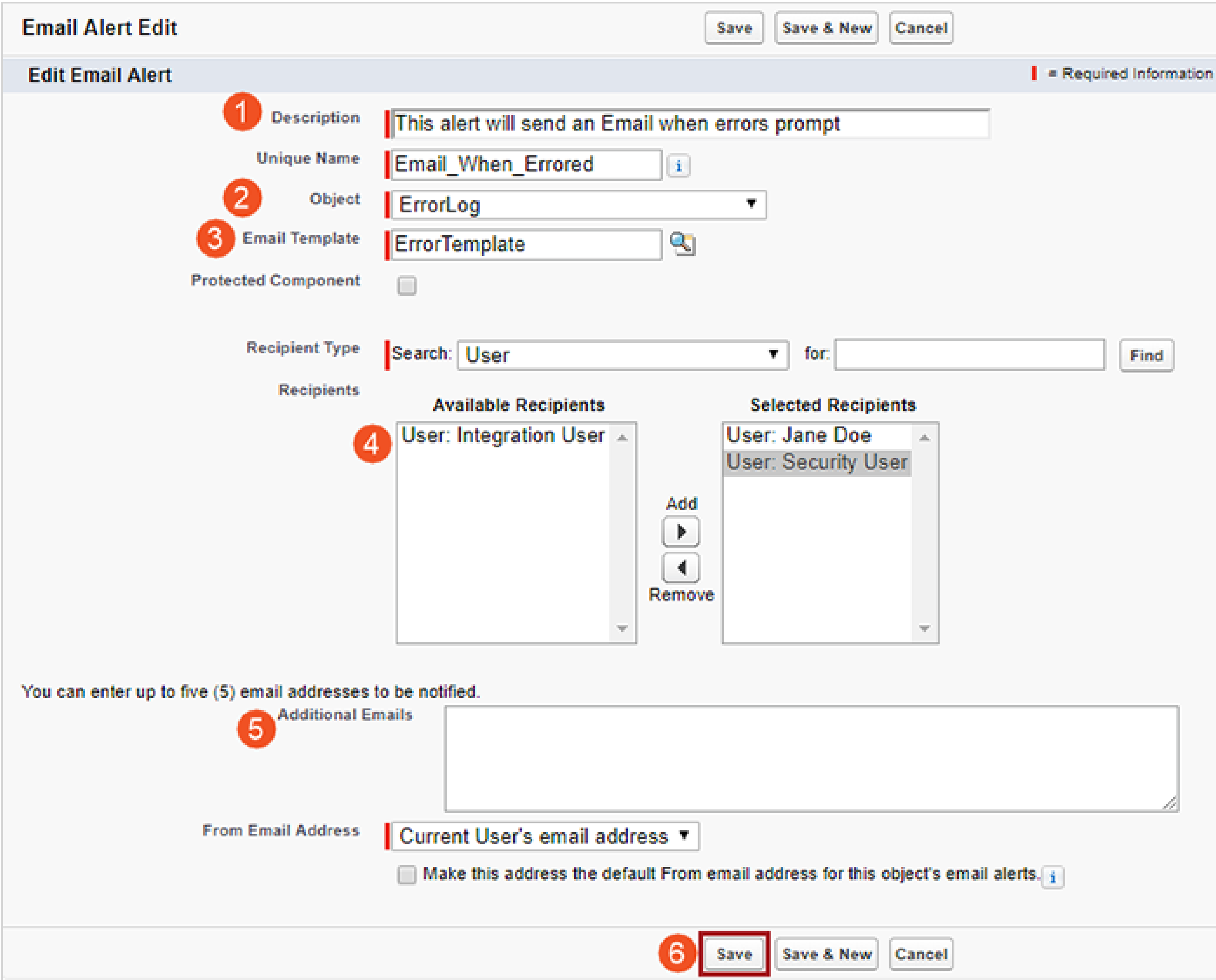

6. Click Next, and then on the 'Create text-only version step,' select Save.

## Create an Email Alert

1. Navigate to Setup > **Email Alerts**, and create a New Email Alert.

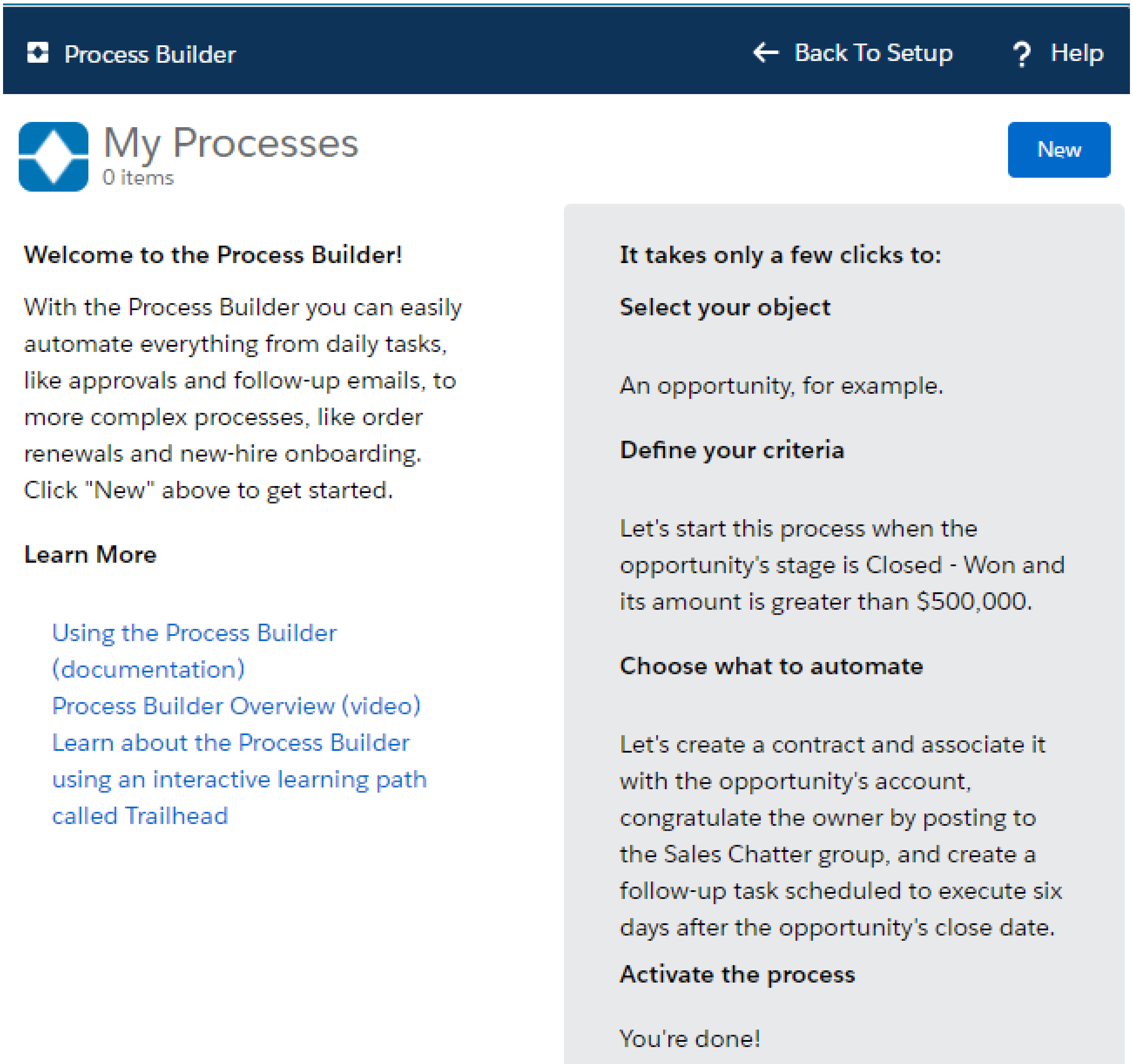



2. Configure the Email Alert. Provide a description (1), and ensure that the Object type is an Error Log(2). Select the email template that was created above(3). Select the desired Salesforce users, and click Add (4). Up to 5 addresses can be added to this box (5). Select Save to save the email alert(6).

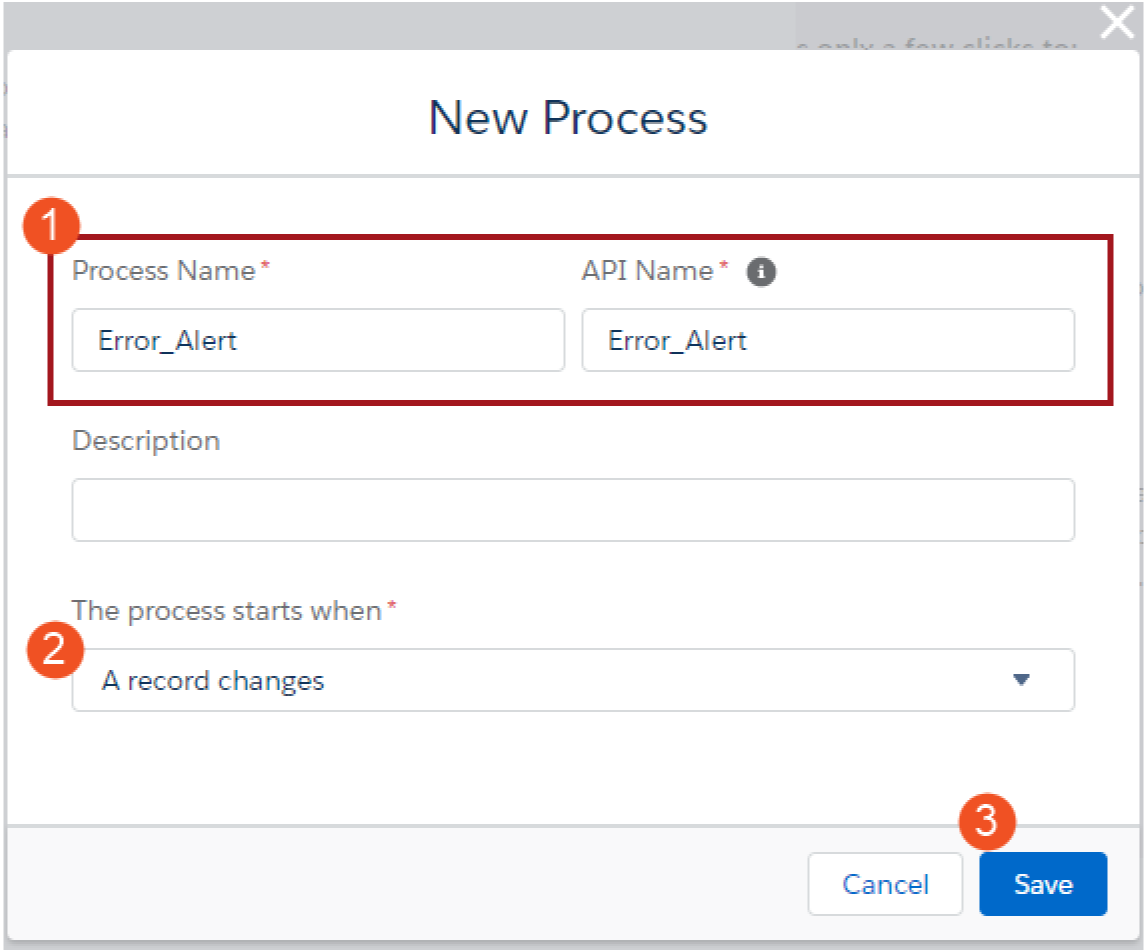



## Create the Process that Uses the Email Alert

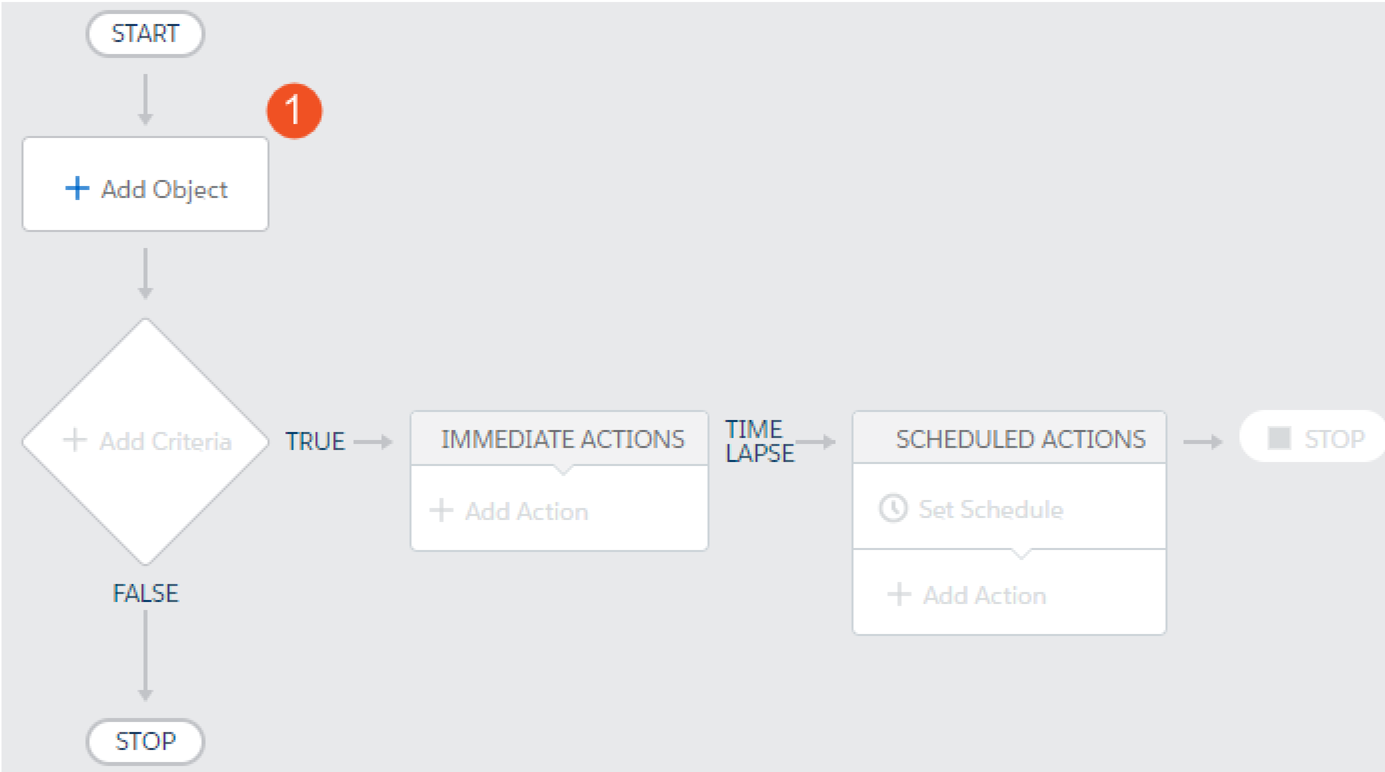
Navigate to Setup > Process Builder, and click 'New' on the right side of the 'My Processes' page.



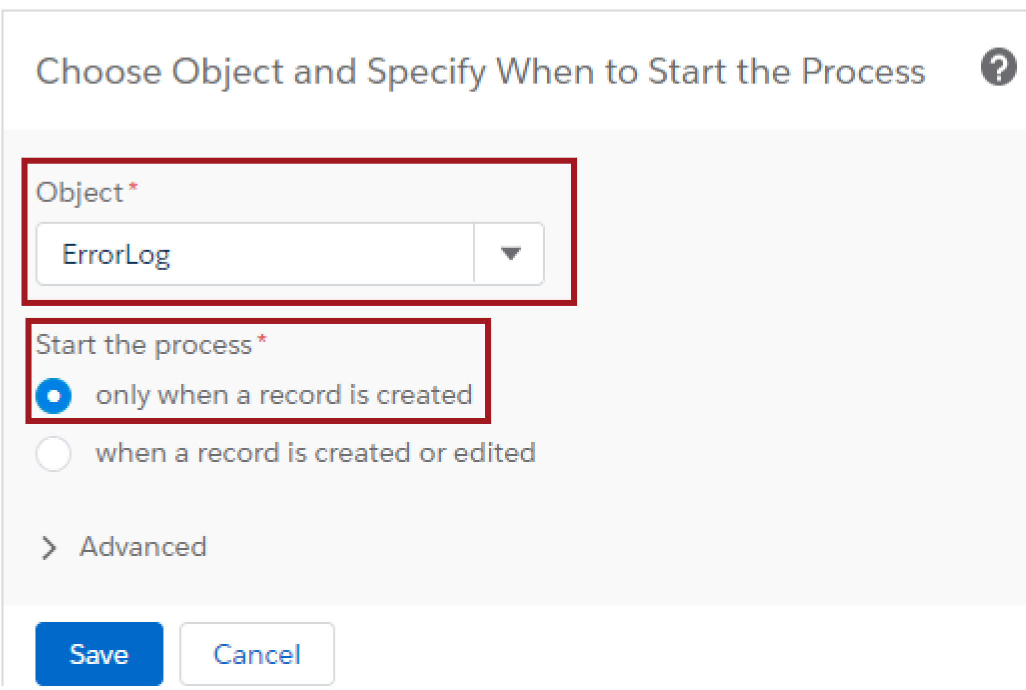

A 'New Process' dialog will display. Name the process and API name (1). Then, on the 'The process starts when' dropdown, select **A record changes** (2). Finally, select 'Save' (3).



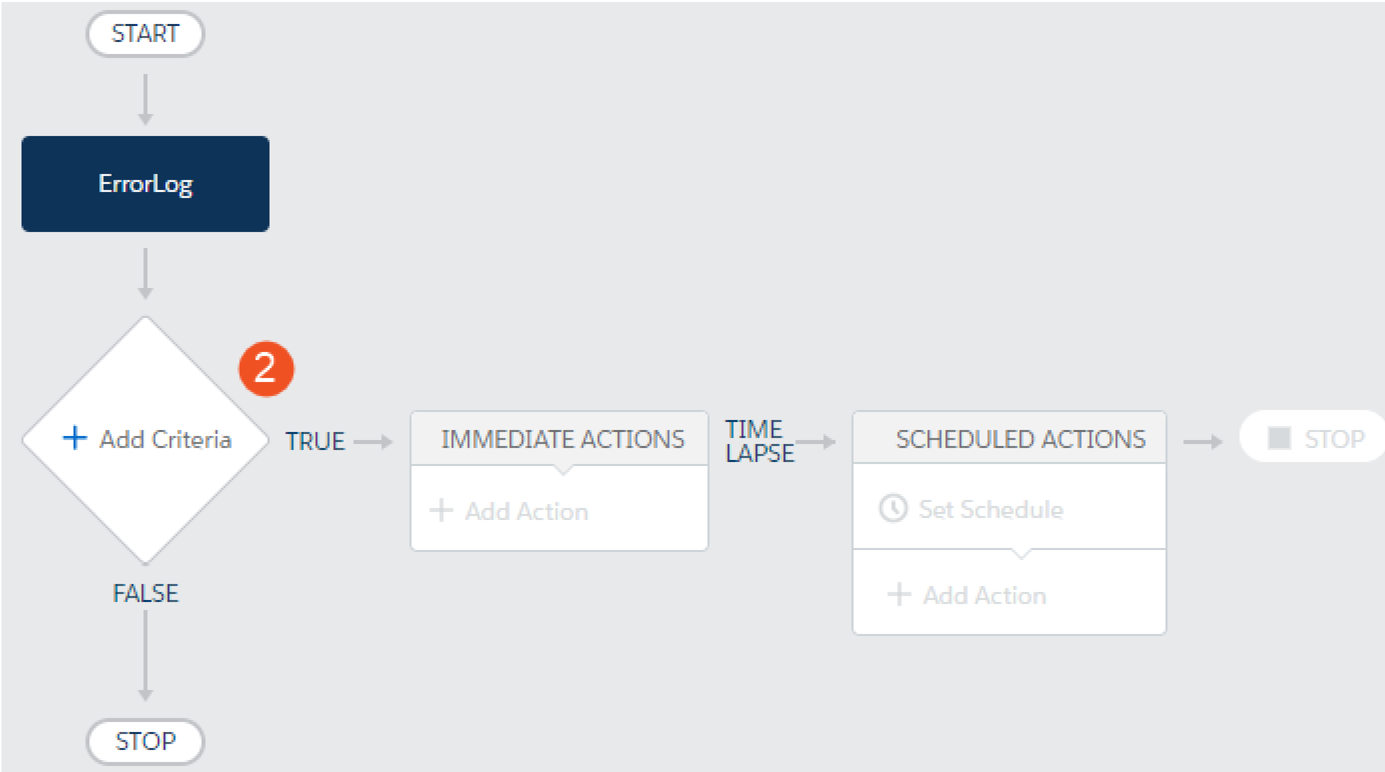

From the process builder diagram, select '+Add Object.'



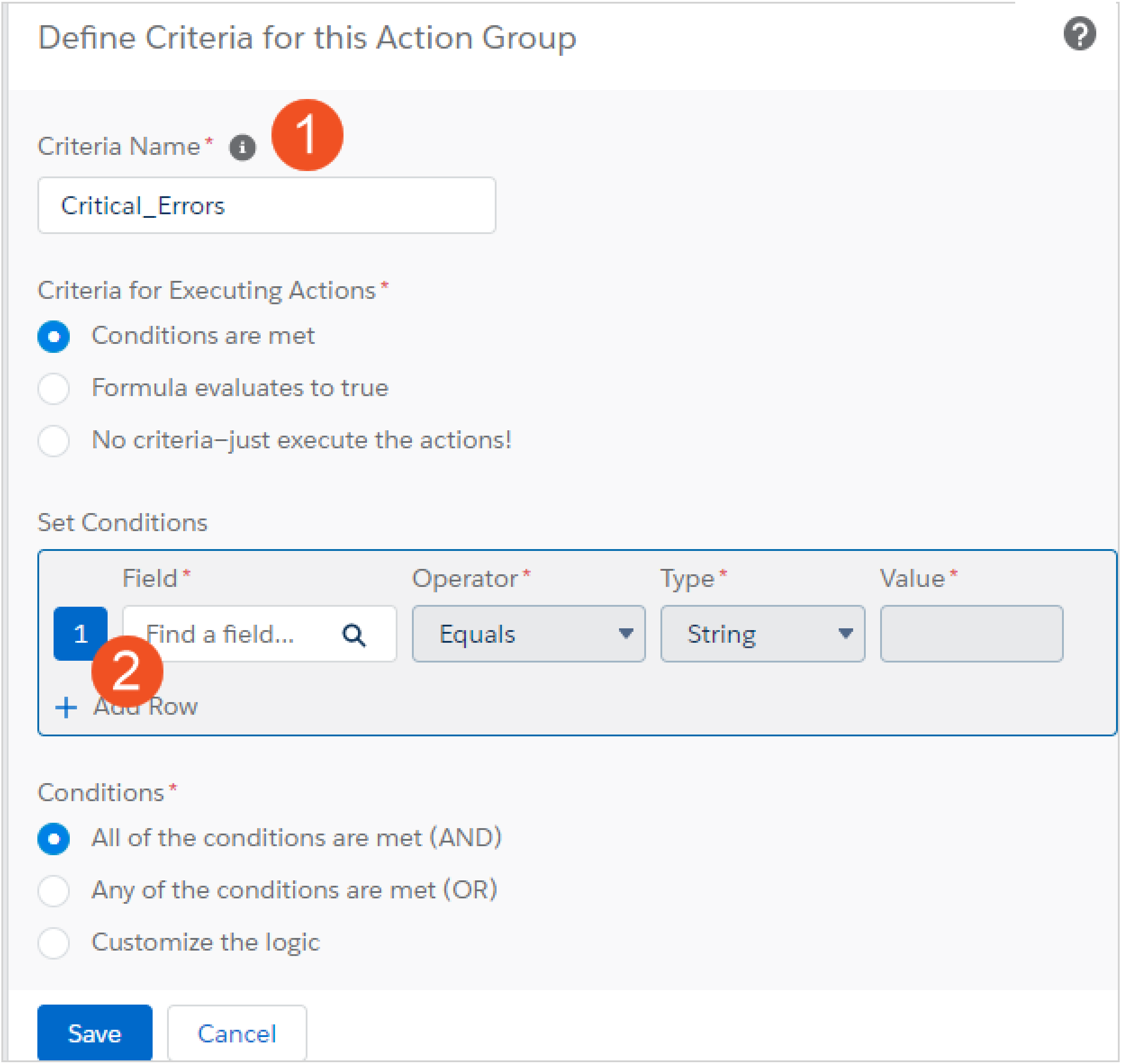

On the 'Choose Object and Specify When to Start the Process' panel, select **ErrorLog** for 'Object' and **only when a record is created** for the 'Start the Process' option. Select 'Save.'



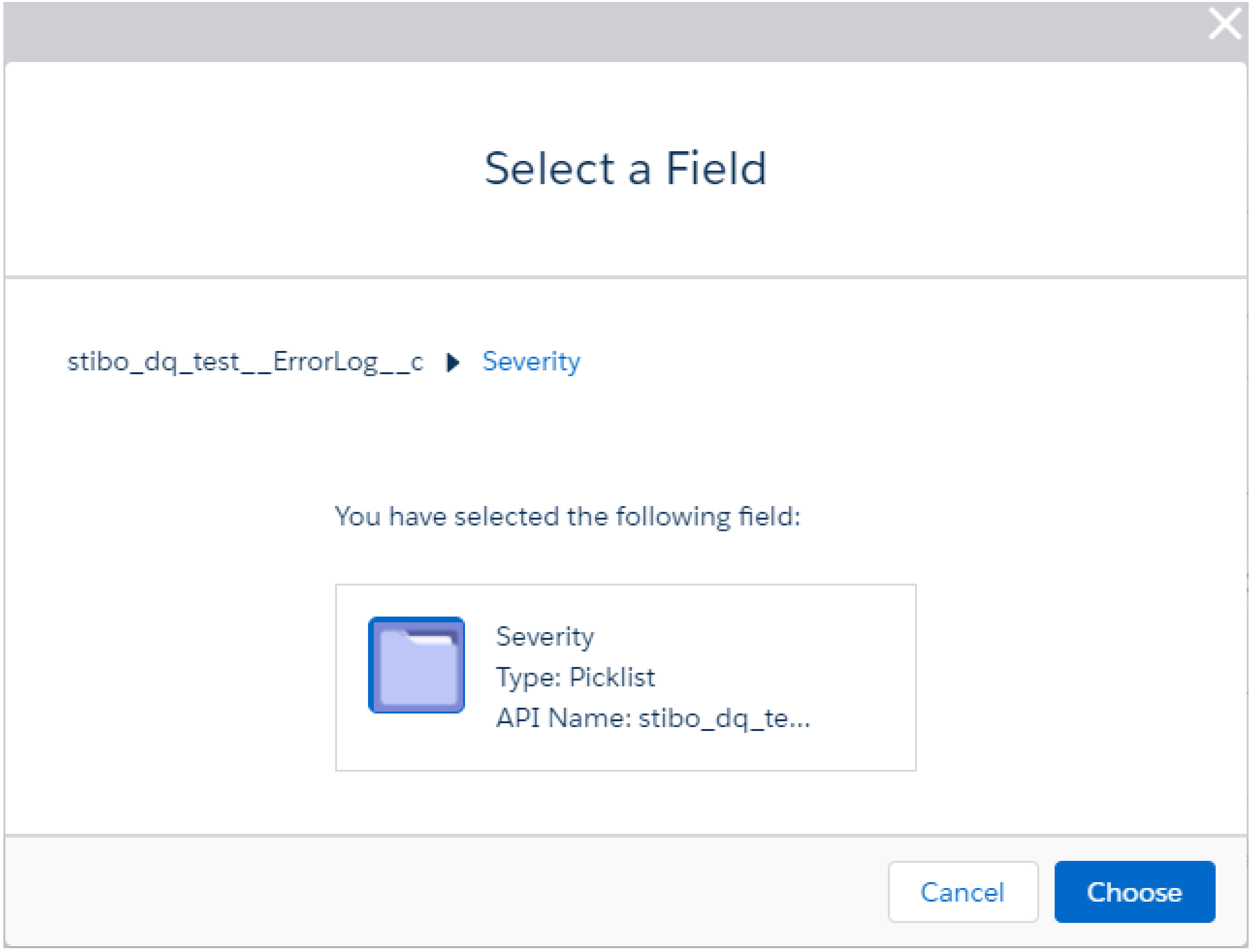

From the diagram, select '+ Add Criteria' (2).



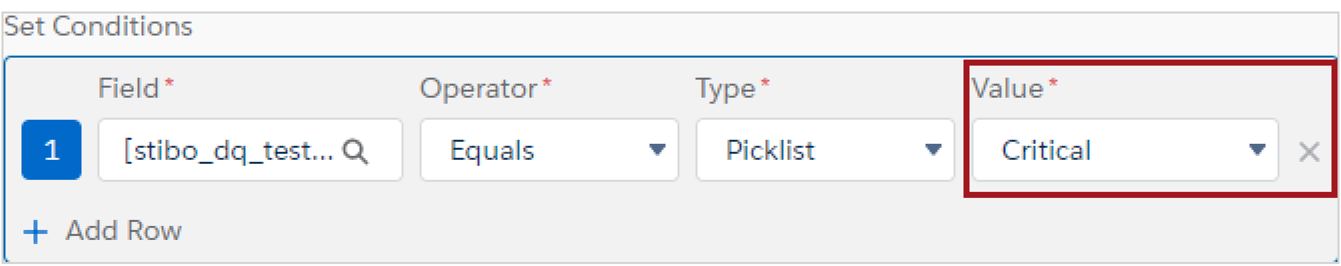

Add the Criteria name (1), and you may receive notifications for errors with a specific severity. To add that, select 'Find a field...' on the 'Field' option of the Set Conditions section (2).




On the 'Select a Field' panel, select 'Severity' then click 'Choose.'

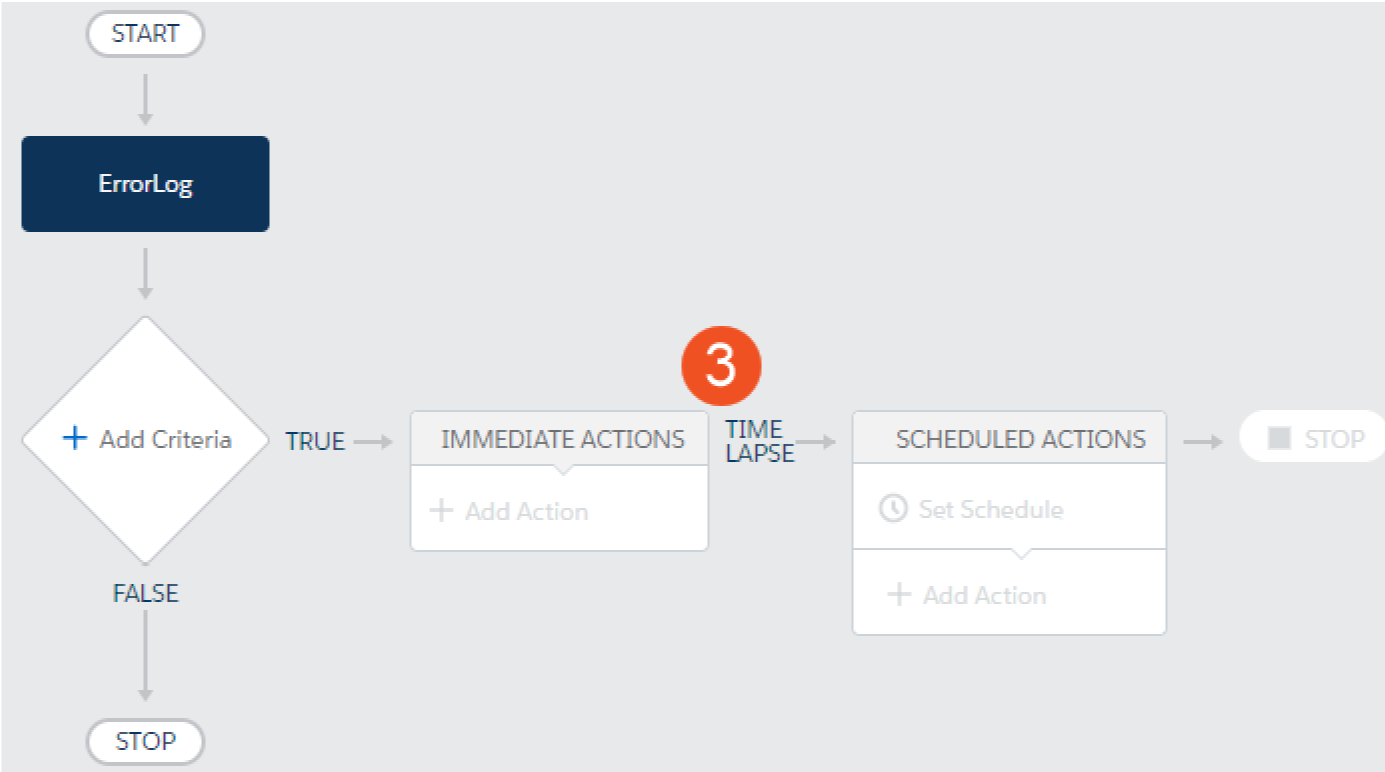



From the 'Value' field of the 'Set Conditions' section, select the desired severity to receive notifications.




Select **Save** to keep these settings.

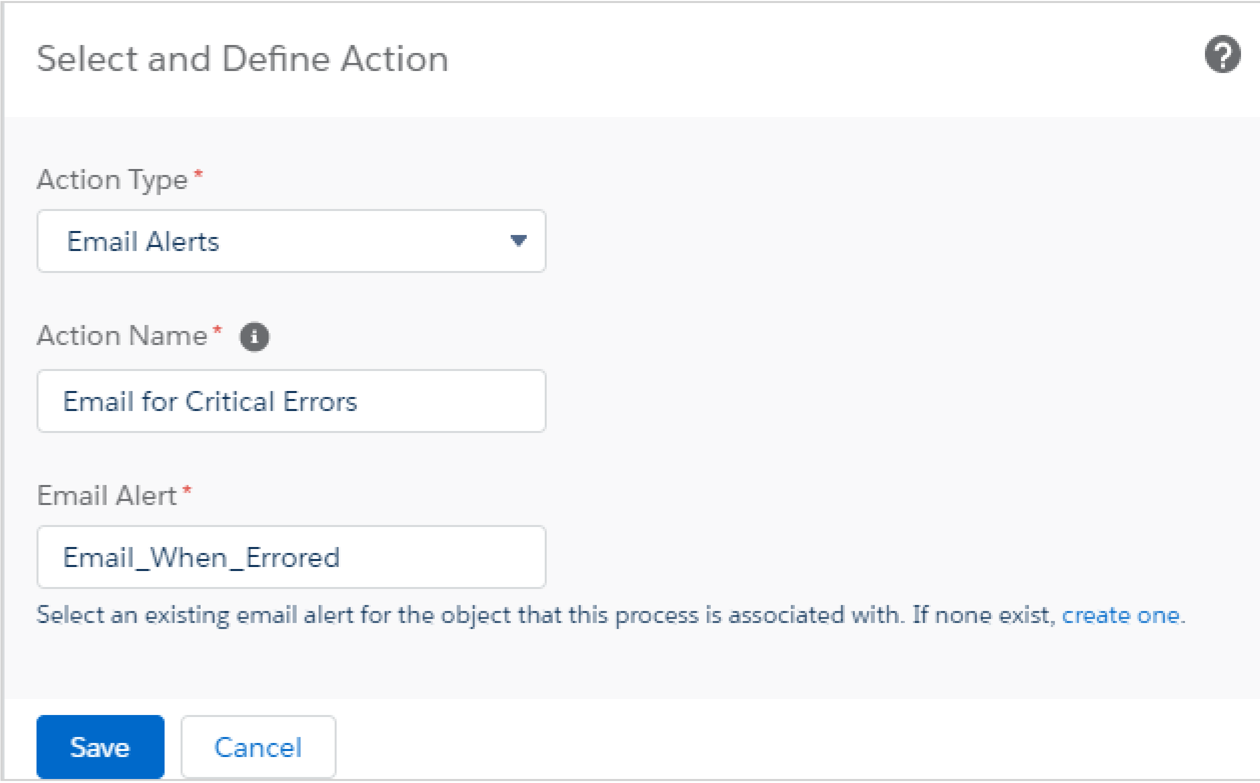
On the immediate actions step (3), select '+ Add Action.'




Define the action type as follows:

- Action Type - Email Alerts (with a name)
- Email Alert - Search for the previously created email alert.

Select the **Save** button.




Then, select the 'Activate' button on the top right of the Process Builder.

# Address Field Descriptions

| Label in Stibo SDQ | API Name | Description |
|---|---|---|
| Address (Address) | Address | This field holds the full address, correctly formatted for mailing in the relevant country. |
| Address 1 (Address1) | Address1 | These fields can be used to specify input address line data, and on output will contain the correctly formatted address for mailing in the relevant country, split into individual address lines. |
| Address 2 (Address2) | Address2 | |
| Address 3 (Address3) | Address3 | |
| Address 4 (Address4) | Address4 | |
| Address 5 (Address5) | Address5 | |
| Address 6 (Address6) | Address6 | |
| Address 7 (Address7) | Address7 | |
| Address 8 (Address8) | Address8 | |
| Address 9 (Address9) | Address9 | |
| Address 10 (Address10) | Address10 | |
| Address 11 (Address11) | Address11 | |
| Address 12 (Address12) | Address12 | |
| Delivery Address (DeliveryAddress) | DeliveryAddress | This field holds the full address minus the Organization, Locality hierarchy, AdministrativeArea hierarchy and PostalCode hierarchy fields, correctly formatted for mailing in the relevant country, including line breaks specified using the AddressLineSeparator option. |
| Delivery Address 1 (DeliveryAddress1) | DeliveryAddress1 | These fields contain the individual lines contained within the DeliveryAddress field. |
| Delivery Address 2 (DeliveryAddress2) | DeliveryAddress2 | |
| Delivery Address 3 (DeliveryAddress3) | DeliveryAddress3 | |
| Delivery Address 4 (DeliveryAddress4) | DeliveryAddress4 | |
| Delivery Address 5 (DeliveryAddress5) | DeliveryAddress5 | |

| Label in Stibo SDQ | API Name | Description |
|---|---|---|
| Delivery Address 6 (DeliveryAddress6) | DeliveryAddress6 | |
| Delivery Address 7 (DeliveryAddress7) | DeliveryAddress7 | |
| Delivery Address 8 (DeliveryAddress8) | DeliveryAddress8 | |
| Delivery Address 9 (DeliveryAddress9) | DeliveryAddress9 | |
| Delivery Address 10 (DeliveryAddress10) | DeliveryAddress10 | |
| Delivery Address 11 (DeliveryAddress11) | DeliveryAddress11 | |
| Delivery Address 12 (DeliveryAddress12) | DeliveryAddress12 | |
| Country (Country) | Country | This field is used to supply the country name or code. |
| Country Name (CountryName) | CountryName | This field holds the ISO 3166 official country name. |
| ISO3166-2 (ISO3166) | ISO3166-2 | This field holds the ISO 3166 2-character country code. |
| ISO3166-3 (ISO3166) | ISO3166-3 | This field holds the ISO 3166 3-character country code. |
| ISO3166-N (ISO3166) | ISO3166-N | This field holds the ISO 3166 3-digit numeric country code. |
| Super Administrative Area (SuperAdministrativeArea) | SuperAdministrativeArea | This field holds the largest geographic data element within a country. |
| Administrative Area (AdministrativeArea) | AdministrativeArea | This field holds the most common geographic data element within a country. For instance, USA State, and Canadian Province. |
| Sub Administrative Area (SubAdministrativeArea) | SubAdministrativeArea | This field holds the smallest geographic data element within a country. For instance, USA County. |
| Locality (Locality) | Locality | This field holds the most common population center data element within a country. For instance, USA City, Canadian Municipality. |
| Dependent Locality (DependentLocality) | DependentLocality | This field holds a smaller population center data element, dependent on the contents of the Locality field. For instance, Turkish Neighborhood. |
| Double Dependent Locality (DoubleDependentLocality) | DoubleDependentLocality | This field holds the smallest population center data element, dependent on both the contents of the Locality and DependentLocality fields. For |

| Label in Stibo SDQ | API Name | Description |
|---|---|---|
| | | instance, UK Village. |
| Thoroughfare (Thoroughfare) | Thoroughfare | This field holds the most common street or block data element within a country. For instance, USA Street. |
| Dependent Thoroughfare (DependentThoroughfare) | DependentThoroughfare | This field holds the dependent street or block data element within a country. For instance, UK Dependent Street. |
| Building (Building) | Building | This field contains the descriptive name identifying an individual location, should one exist. |
| Premise (Premise) | Premise | This field contains the alphanumeric code identifying an individual location, should one exist. |
| Sub Building (SubBuilding) | SubBuilding | This field contains the secondary identifiers for a particular delivery point. For instance, "FLAT 1" or "SUITE 212". |
| Postal Code (PostalCode) | PostalCode | This field contains the complete postal code for a particular delivery point, should such detail be able to be determined. |
| Postal Code Primary (PostalCodePrimary) | PostalCodePrimary | This field contains the primary postal code used for a particular country. For instance, USA Zip, Canadian Postcode, Indian PINcode. |
| Postal Code Secondary (PostalCodeSecondary) | PostalCodeSecondary | This field contains secondary postal code information, if used in a particular country and if such detail is able to be determined and reference data is available. For instance, USA Zip Plus 4. |
| Organization (Organization) | Organization | This field contains the business name associated with a particular delivery point, should one exist. |
| Post Box (PostBox) | PostBox | This field contains the post box for a particular delivery point, should one exist. |
| Match Rule Label (MatchRuleLabel) | MatchRuleLabel | The Loqate Engine uses a set of rules to match the input with the reference data. Each rule is identified by a match rule label. |
| Locality Extra (LocalityExtra) | LocalityExtra | This field is used to hold information that could be present along with the Locality. This information is not considered as part of the Postal authority data but is still necessary for parsing the address in order to obtain a complete delivery address. Available if a sufficient level of parsing detail exists within a particular country. Example: 12 rue de la Gare, 75019 PARIS CEDEX, France. CEDEX will be considered as Locality Extra. |

| Label in Stibo SDQ | API Name | Description |
| --- | --- | --- |
| Dependent Locality Name (DependentLocalityName) | DependentLocalityName | This field holds the name indicator within the DependentLocality field, should one exist. For instance, if DependentLocality contains “Dong Cheng Qu” DependentLocalityName contains “Dong Cheng” if a sufficient level of parsing detail exists for the particular country. |
| Dependent Locality Type (DependentLocalityType) | DependentLocalityType | This field is used to hold the DependentLocality indicator within the DependentLocality field, should one exist. For instance, if DependentLocality contains “Dong Cheng Qu” DependentLocalityType contains “Qu” if a sufficient level of parsing detail exists for the particular country. |
| Double Dependent Locality Name (DoubleDependentLocalityName) | DoubleDependentLocalityName | This field holds the name indicator within the DoubleDependentLocality field, should one exist. For instance, if DoubleDependentLocality contains “Xin Zhuang Zhen” DoubleDependentLocalityName contains “Xin Zhuang” if a sufficient level of parsing detail exists for the particular country. |
| Double Dependent Locality Type (DoubleDependentLocalityType) | DoubleDependentLocalityType | This field is used to hold the DoubleDependentLocality indicator within the DoubleDependentLocality field, should one exist. For instance, if DoubleDependentLocality contains “Xin Zhuang Zhen” DoubleDependentLocalityType contains “Zhen” if a sufficient level of parsing detail exists for the particular country. |
| Thoroughfare Pre Direction (ThoroughfarePreDirection) | ThoroughfarePreDirection | This field holds the prefix directional contained within the Thoroughfare field, should one exist. For instance, if Thoroughfare contains “N MAIN ST” ThoroughfarePreDirection contains “N” if a sufficient level of parsing detail exists for the particular country. |
| Thoroughfare Leading Type (ThoroughfareLeadingType) | ThoroughfareLeadingType | This field holds the leading thoroughfare type indicator within the Thoroughfare field, should one exist. For instance, if Thoroughfare contains “RUE DE LA GARE” ThoroughfareLeadingType contains “RUE” if a sufficient level of parsing detail exists for the particular country. |
| Thoroughfare Name (ThoroughfareName) | ThoroughfareName | This field holds the name indicator within the Thoroughfare field, should one exist. For instance, if Thoroughfare contains “N MAIN ST” ThoroughfareName contains “MAIN” if a sufficient level of parsing detail exists for the particular country. |
| Thoroughfare Trailing Type | ThoroughfareTrailingType | This field holds the trailing thoroughfare type |

| Label in Stibo SDQ | API Name | Description |
|---|---|---|
| (ThoroughfareTrailingType) | | indicator within the Thoroughfare field, should one exist. For instance, if Thoroughfare contains "N MAIN ST" ThoroughfareTrailingType contains "ST" if a sufficient level of parsing detail exists for the particular country. |
| Thoroughfare Post Direction (ThoroughfarePostDirection) | ThoroughfarePostDirection | This field holds the postfix directional contained within the Thoroughfare field, should one exist. For instance, if Thoroughfare contains "MAIN ST N" ThoroughfarePostDirection contains "N" if a sufficient level of parsing detail exists for the particular country. |
| Dependent Thoroughfare Pre Direction (DependentThoroughfarePreDirection) | DependentThoroughfarePreDirection | This field holds the prefix directional contained within the DependentThoroughfare field, should one exist. For instance, if DependentThoroughfare contains "N MAIN ST" DependentThoroughfarePreDirection contains "N" if a sufficient level of parsing detail exists for the particular country. |
| Dependent Thoroughfare Leading Type (DependentThoroughfareLeadingType) | DependentThoroughfareLeadingType | This field holds the leading thoroughfare type indicator within the DependentThoroughfare field, should one exist. For instance, if DependentThoroughfare contains "RUE DE LA GARE" DependentThoroughfareLeadingType contains "RUE" if a sufficient level of parsing detail exists for the particular country. |
| Dependent Thoroughfare Name (DependentThoroughfareName) | DependentThoroughfareName | This field holds the name indicator within the DependentThoroughfare field, should one exist. For instance, if DependentThoroughfare contains "N MAIN ST" DependentThoroughfareName contains "MAIN" if a sufficient level of parsing detail exists for the particular country. |
| Dependent Thoroughfare Trailing Type (DependentThoroughfareTrailingType) | DependentThoroughfareTrailingType | This field holds the trailing thoroughfare type indicator within the DependentThoroughfare field, should one exist. For instance, if DependentThoroughfare contains "N MAIN ST" DependentThoroughfareTrailingType contains "ST" if a sufficient level of parsing detail exists for the particular country. |
| Dependent Thoroughfare Post Direction (DependentThoroughfarePostDirection) | DependentThoroughfarePostDirection | This field holds the postfix directional contained within the DependentThoroughfare field, should one exist. For instance, if DependentThoroughfare contains "MAIN ST N" DependentThoroughfarePostDirection contains "N" if a sufficient level of parsing detail exists for the particular country. |
| Building Leading Type (BuildingLeadingType) | BuildingLeadingType | This field holds the leading building type indicator |

| Label in Stibo SDQ | API Name | Description |
|---|---|---|
| | | within the Building field, should one exist. For instance, if Building contains "BLOC C" BuildingLeadingType contains "BLOC" if a sufficient level of parsing detail exists for the particular country. |
| Building Name (BuildingName) | BuildingName | This field holds the name indicator within the Building field, should one exist. For instance, if Building contains "WESTMINSTER HOUSE" BuildingName contains "WESTMINSTER" if a sufficient level of parsing detail exists for the particular country. |
| Building Trailing Type (BuildingTrailingType) | BuildingTrailingType | This field holds the trailing building type indicator within the Building field, should one exist. For instance, if Building contains "WESTMINSTER HOUSE" BuildingTrailingType contains "HOUSE" if a sufficient level of parsing detail exists within a particular country. |
| Premise Type (PremiseType) | PremiseType | This field contains the leading premise type indicator within the Premise field, should one exist. For instance, if Premise contains "Plot 7/7A" PremiseType contains "Plot" if a sufficient level of parsing detail exists within a particular country. |
| Premise Number (PremiseNumber) | PremiseNumber | This field contains the alphanumeric indicator within the Premise field, should one exist. For instance, if Premise contains "Plot 7/7A" PremiseNumber contains "7/7A" if a sufficient level of parsing detail exists within a particular country. |
| Premise Extra (PremiseExtra) | PremiseExtra | This field is used to hold information that could be present as part of the Premise field. This information is not considered as part of the Postal authority data but is still necessary for parsing the address in order to obtain a complete delivery address. Available if a sufficient level of parsing detail exists within a particular country. Example: In French address, the Premise number could be followed by words bis and ter which will be considered as Premise Extra. 25 bis rue Emile Zola, 91190 GIF SUR YVETTE, France. Bis will be considered as PremiseExtra. |
| Sub Building Type (SubBuildingType) | SubBuildingType | This field contains the leading sub-building type indicator within the SubBuilding field, should one exist. For instance, if SubBuilding contains "FLAT 1" SubBuildingType contains "FLAT" if a sufficient level of parsing detail exists within a particular country. |
| Sub Building Leading Type | SubBuildingLeadingType | This field contains the sub-building type indicator |

| Label in Stibo SDQ | API Name | Description |
|---|---|---|
| (SubBuildingLeadingType) | | within the SubBuilding field, should one exist. For instance, if SubBuilding contains "FLAT 1" SubBuildingLeadingType contains "FLAT" if a sufficient level of parsing detail exists within a particular country. |
| Sub Building Number (SubBuildingNumber) | SubBuildingNumber | This field contains the alphanumeric indicator within the SubBuilding field, should one exist. For instance, if SubBuilding contains "FLAT 1" SubBuildingNumber contains "1" if a sufficient level of parsing detail exists within a particular country. |
| Sub Building Name (SubBuildingName) | SubBuildingName | This field contains the descriptive name within the SubBuilding field. For instance, if SubBuilding contains "BASEMENT FLAT" SubBuildingName contains "BASEMENT FLAT". |
| Organization Name (OrganizationName) | OrganizationName | This field contains the name indicator within the Organization field, should one exist. For instance, if Organization contains 'Loqate Inc" OrganizationName contains "Loqate" if a sufficient level of parsing detail exists for the particular country. |
| Organization Type (OrganizationType) | OrganizationType | This field contains the trailing type indicator contained within the Organization field, should one exist. For instance, if Organization contains "Loqate Inc" OrganizationType contains "Inc" if a sufficient level of parsing detail exists for the particular country. |
| Post Box Type (PostBoxType) | PostBoxType | This field contains the type indicator contained within the PostBox field, should one exist. For instance, if PostBox contains "PO BOX 1234" PostBoxType contains "PO BOX" if a sufficient level of parsing detail exists for the particular country. |
| Post Box Number (PostBoxNumber) | PostBoxNumber | This field contains the alphanumeric indicator within the PostBox field, should one exist. For instance, if PostBox contains "PO BOX 1234" PostBoxNumber contains "1234" if a sufficient level of parsing detail exists for the particular country. |
| Latitude (Latitude) | Latitude | This field holds the WGS 84 latitude in decimal degrees format. |
| Longitude (Longitude) | Longitude | This field holds the WGS 84 longitude in decimal degrees format. |
| Geo Accuracy (GeoAccuracy) | GeoAccuracy | This field holds the GeoAccuracy (GAC) code. It's |

| Label in Stibo SDQ | API Name | Description |
|---|---|---|
| | | important to note that an address will not geocode to a higher level than the level it's verified to. For example, an address that verifies to L3 (Thoroughfare) will not geocode higher than L3. |
| Geo Distance (GeoDistance) | GeoDistance | This field holds the radius of accuracy in meters, giving an indication of the likely maximum distance between the given geocode and the physical location. For Point-level results (GAC = "PX"), this value may be empty or not returned. This field is derived from and therefore dependent on the accuracy and coverage of the underlying reference data. |
| Address Quality Index (AQI) | AQI | The Address Quality Index (AQI) is used to indicate the quality of an address, e.g., Excellent quality, Good quality, Average quality, Poor quality, and Bad quality. Any record that is able to be parsed will have an AQI. The AQI is derived from the AVC, using the AQI table. |
| Address Verification Code (AVC) | AVC | The Address Verification Code (AVC) provides information about the completeness of the input data, the level of verification that could be achieved, and the amount of change that was needed to reach that level of verification. It is made up of the following values: The verification status The post-processed verification match level The pre-processed verification match level The parsing status The lexicon identification match level The context identification match level The postcode status The matchscore |
| Validation Timestamp (ValidationTimestamp) | ValidationTimestamp | Custom field that contains timestamp of the last executed validation |
| Validation Status (ValidationStatus) | ValidationStatus | Custom field that contains human readable version of the response status. This value is based on the AQI field and the users behavior in Stibo SDQ: Addresses with an AQI value of A or B obtain a ValidationStatus of Verified. Addresses with an AQI value of C,D or E obtain a ValidationStatus of Unverified. When the user clicks the "Enter Address Manually" checkbox, ValidationStatus becomes Entered Manually. When a validation has already occurred but the user manually changes one or more of the Address fields, ValidationStatus is set to User Preferred |

# Address Quality Index (AQI)

| AQI | Address Quality | Explanation | Verification level | Matchscore |
|---|---|---|---|---|
| A | Excellent | Verifiable to at least Premise level without changes | >=4 | 100 |
| B | Good | Verifiable to at least Thoroughfare level with minor changes | >=3 | >=95 |
| C | Average | Verifiable to at least Locality level with moderate changes | >=2 | >=90 |
| D | Poor | Only verifiable to at least Locality level with more than moderate changes | >=2 | >=80 |
| E | Bad | | else | else |

# Email Field Descriptions

| Label in Stibo SDQ | API Name | Description |
|---|---|---|
| Email (Email) | Email | Submitted email address |
| Certainty (Certainty) | Certainty | Indicates the email status, see table below |
| Message (Message) | Message | Indicates the summary of request's status: OK or Mailbox Full will be returned if the request has been successful and valid responses are returned Mailbox Full will be returned only when the user's mailbox is full. In all other cases of 'undeliverable' responses, the OK status will be returned. No response will be returned if the request has not been successful. See Lookup Status Messages for details. |
| Corrections (Corrections) | Corrections | List of email corrections returned, if available Email Validate API can also return email corrections for syntax mistakes in an email. A maximum of 8 email corrections can be returned in the responses, if available. |
| Verbose Output (VerboseOutput) | VerboseOutput | Additional information regarding Certainty responses, see table below |
| Verbose Description (VerboseDescription) | VerboseDescription | Custom field that contains human-readable explanation of the 'VerboseOutput' parameter, see table below. |
| Validation Timestamp (ValidationTimestamp) | ValidationTimestamp | Custom field that contains timestamp of the executed validation |
| Validation Status (ValidationStatus) | ValidationStatus | Custom field that contains the value from 'Certainty' parameter or be empty/blank if the email has not been validated. |

## Email Certainty Fields

| Certainty | VerboseOutput | Description |
|---|---|---|
| verified | verified | Mailbox exists, is reachable, and not known to be illegitimate or disposable. |
| undeliverable | mailboxDisabled | The user mailbox has been disabled. |
| | mailboxDoesNotExist | The user mailbox does not exist at this domain. |
| | mailboxFull | The user mailbox is full. |
| | syntaxFailure | The syntax of the email address is incorrect. |
| unreachable | unreachable | The domain is not responding to validation requests or does not have any active mail servers. |

| Certainty | VerboseOutput | Description |
|---|---|---|
| | unresolvable | The domain cannot be resolved. |
| illegitimate | illegitimate | Seed, spamtrap, black hole, technical role account or inactive domain. |
| | roleAccount | Role accounts such as support@, sales@, info@. |
| | typoDomain | The domain was close to a common domain and although it exists, it is highly unlikely to be correct. |
| | localPartSpamTrap | Known local portions of the email that may indicate spam traps. |
| disposable | disposable | Domain is administered by a disposable email provider (e.g., Mailinator). |
| unknown | unknown | We were unable to conclusively verify or invalidate this address. |
| | timeout | The request timed out due to the host domain not responding in time. |
| | acceptAll | The domain is accept-all, so the username cannot be validated. |
| | relayDenied | Result was validated at the incorrect mail exchanger. |
| <Blank> | | Email have not been validated |

# Phone Field Descriptions

| Label in Stibo SDQ | API Name | Description |
|---|---|---|
| Type (type) | type | Expect: Mobile Indicates that this is a valid mobile number |
| Phone (Phone) | msisdn | The number used for the lookup |
| Error Code (error_code) | error_code | Expect one of the following. Each error code directly relates to an error_text result listed below: 0,1,5,7,11,27,999 |
| Error Text (error_text) | error_text | Expect one of the following: • Live (0) • Dead (1) • Inconclusive (5) • Insufficient Credit (7) • No Teleservice Provisioned (11) • Absent Subscriber (27) • Number Not Supported (999) |
| Status (status) | status | Expect: Delivered,Undelivered or Rejected |
| Mobile Country Code/Mobile Network Code (mccmnc) | mccmnc | The MCC and MNC identify the Mobile Country Code and Mobile Network Code |
| Is Ported (is_ported) | is_ported | Will indicate if the number has been ported from it's Original Network to a different Current Network |
| Is Roaming (is_roaming) | is_roaming | Will indicate if the number is currently roaming outside of it's home location |
| Validation Timestamp (ValidationTimestamp) | ValidationTimestamp | Custom field that contains timestamp of the last executed validation |
| Validation Status (ValidationStatus) | ValidationStatus | Custom field that contains human readable version of the response status |

## Phone Error Fields

| Error Text | Error Code | Status | Description |
|---|---|---|---|
| Live | 0 | Delivered | Active mobile number. |
| Dead | 1 | Undelivered | Number decommissioned by the owning network. |
| Inconclusive | 5 | Undelivered | We are unable to retrieve a response from the network for this number. |
| No Credit | 7 | Undelivered | The account had insufficient funds to process this request. |

| Error Text | Error Code | Status | Description |
| --- | --- | --- | --- |
| No Teleservice Provisioned | 11 | Undelivered | This number is not able to receive calls or SMS messages. This is usually a number relating to a data SIM. |
| Absent Subscriber | 27 | Undelivered | This number has not been active for a short period of time. See the box below for a more detailed description. |
| Number Not Supported | 999 | Rejected | This is an invalid number. Possible reasons include: • The number does not contain a valid country code. • The number does not contain a valid number range. • The number is too long or too short You are not charged for this check. |