



AllData®

Next-Gen Widgets Integration Guide

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Executive Summary

Overview

Fiserv provides three integration options to leverage our industry leading financial product and services suite:

- Web services APIs that expose available data and functionality directly within the partner's UI
- Brandable UI that uses the Fiserv user interface for ease of deployment and integration
- Configurable widgets providing specific functionality that can be embedded within the partner's UI

Fiserv widgets provide compelling value propositions to financial institutions (FIs) wanting to leverage AllData product and services, including:

- Tight integration of data and functionality within a partner's UI
- Reduced implementation, integration, and maintenance costs associated with developing a front end for aggregation-specific functionality

Objectives

The primary objectives of this document include the following.

- Explain the different approaches to integrate the new AllData Add Account widget within a partner application.
- Describe the functionality available using the new AllData Add Account widget, Alert Resolution widget, and Account Management widget.
- Identify the configurable parameters and setup needed to access the widget.

Scope and Assumptions

The scope of this document includes following AllData widgets:

- Add Accounts
- Alert Resolution
- Account Management

Integration Approaches

Widgets are web resources, composed of a few web pages and accessed like normal HTTP URLs. They can be embedded in any UI or displayed in separate dialogs/windows like any other internet-based resource. The user must sign on to Fiserv and establish a session using SAML or single sign-on (SSO) using web services before accessing any widgets.

SAML 2.0 SSO

The user will log in to the partner application. When the user accesses a widget by clicking a URL or button, the partner will initiate the SAML 2.0 SSO to sign the user in to Fiserv. The SAML request will include the SAML artifact (sent using POST parameter **SAMLResponse**) and the widget URL. After the Fiserv SSO server validates the assertion, the user will be redirected to the widget URL.

The SAML 2.0 artifact must contain the following attributes to sign on the user and establish a session.

- **user_id:** Username of a user, for example, *jsmith* – It must match the username given during user registration (advisor or client).
- **ce_pwd:** Password provided during user registration – The password must comply with Fiserv password policies.
- **user_type:** User role – Valid values are “advisor” and “client.”
- **partner_id:** An ID constant assigned to a partner at the time of initial setup
- **home_id:** An ID assigned to a home (broker/dealer) of a partner at the time of initial home setup

The other optional attributes partner can send are:

- **fi_id:** Required for add more accounts – This ID represents the FI the user has account with and is available when pulling the FI data using the *getFinancialInstInfo* API.
- **login_acct_id:** Required for error resolution and add more accounts – This ID represents the user’s login account the institution. This information is available using the *getAccountDetails* API.
- **acct_id:** Required for error resolution – This ID represents the user’s account with the institution.
- **return_url:** Partner preferred URL to return control back after completion of action in the widget – Refer to individual widget documentation to find out what parameters are sent back on this URL invocation.
- **keepalive_url:** Partner preferred URL to keep the partner session alive
- **error_url:** Partner preferred URL to which user will be redirected to if an error occurs during widget invocation
- **offline_account_url:** Partner preferred URL to direct the user to add offline accounts within the partner’s screens and functionality
- **css_url:** Partner preferred URL to retrieve cascading style sheet – This URL will override **css_url** set up at the home level. This URL is appended to the end of CE CSS URLs so that the partner can define only the styles they want to override.
- **invocation_mode:** Partners preferring to embed the widget within their application or to launch the widget as a popup can use this parameter. Possible values are “embedded” and “popup.”
- **partner_app_id:** Required for FIs using OAuth model – This ID is shared by partners during implementation. It is unique to each application the partner integrates with the AllData widget. It is used to access user account information from OAuth-implemented institutions.

The widget URL itself must be sent as a POST parameter named **RelyState**. After the SSO server establishes a session, the user can access any widget without needing to sign on again.

SSO Using Session Token

If the partner does not support SAML 2.0, they can still redirect users to Fiserv AllData widgets using an alternative form of SSO. In this approach the partner establishes a session using a web service API and passes that session token to the widget URL to access the functionality.

Partners who do not support SAML 2.0 can redirect users to AllData widgets using an alternative form of SSO by establishing a session with a web service API and passing that session token to the widget URL.

The steps to access the widgets are:

1. Ensure that the user is registered with Fiserv AllData. If the user is not registered, call AllData RESTful web service API *UserMgmt/createUser*.
2. Call Fiserv AllData RESTful web service (or the XML) API *ClientMgmt/signon* to authenticate the user. This service will respond with the session token after signing on successfully.
3. Use the Fiserv provided URL to access the appropriate widget. You must pass the session token as a POST parameter named **sessionToken** when invoking the URL. (GET is not supported.)
4. Use the appropriate web service or XML API to pull data after the user has completed working with the widget.

The *ClientMgmt/signon* web service expects the following data elements in the request:

- Username (**UserID**)
- Password (**UserPassword**)
- Home ID (**HomeID**)
- Partner ID (**partnerID**)

Please note:

- The other optional parameters defined in the [SAML 2.0 SSO section](#) can also be sent as POST parameters when invoking widget URL.
- A single session token can be used to invoke multiple widgets so long as the session is still valid.
- A session becomes invalid after timing out from 15 minutes of inactivity or after using the *ClientMgmt/signoff* API.
- Every widget invocation needs a valid session token passed through as a POST parameter with the invocation URL.

Optional parameters to pass to the widget's URL through POST parameters are:

- **fi_id:** Required to add more accounts – This ID represents the FI where the user has an account and is available when pulling the institution data with the *getFinancialInstInfo* API. This parameter is required to add a new institution in a deep linking implementation.
- **login_acct_id:** Required for error resolution and to add more accounts – This ID represents the login account the user has with the FI. This information is available using the *getAccountDetails* API.
- **acct_id:** Required for error resolution – This ID represents the account the user has with the FI.
- **return_url:** Partner preferred URL to return control back – Refer to individual widget documentation for the parameters sent back on this URL invocation.

- **keepalive_url:** Partner preferred URL to keep the partner session alive
- **error_url:** Partner preferred URL to which user will be redirected if an error occurs during widget invocation
- **offline_account_url:** Partner preferred URL to direct the user to add offline accounts within the partner's screens and functionality
- **css_url:** Partner preferred URL to retrieve cascading style sheet – This URL will override the **css_url** set up at the home level. This URL is appended at the end of CE CSS URLs so that the partner can define only the styles they want to override.
- **invocation_mode:** Partners preferring to embed the widget within their application using iframe or to launch the widget as a popup can use this parameter. Possible values are “embedded” and “popup.”
- **partner_app_id:** Required for FIs using OAuth model – This ID is shared by partners during implementation. It is unique to each application the partner integrates with the AllData widget. It is used to access user account information from OAuth-implemented institutions.

Signon Request/Response

Web service name	Update status check
Resource URL	<FiservWSUrl>/UserMgmt/signon
Description	This API will authenticate the user and generate a session token.
Swagger link	signon

Example URL to invoke Add Accounts widget:

<Domain URL>PFM_UI/widgets/base/addaccounts/addAccountsWidget iface
...with the mandatory POST parameter “sessionToken=<sessionToken>” and any optional parameters required for the scenario

Reverse Keep Alive URL

Partners may occasionally need to extend AllData sessions even after the AllData widget is closed. To extend an AllData session, open a “keep-alive” URL from the partner application modeled after the following.

<Domain URL>keepAlive/keepAlive iface
...with the mandatory POST parameter “sessionToken=<sessionToken>”

Logout URL

The AllData session times out after 15 minutes of user inactivity. A partner wanting to log out gracefully before 15 minutes can use a logout URL modeled after the following.

<Domain URL>logout
...with the mandatory POST parameter “sessionToken=<sessionToken>”

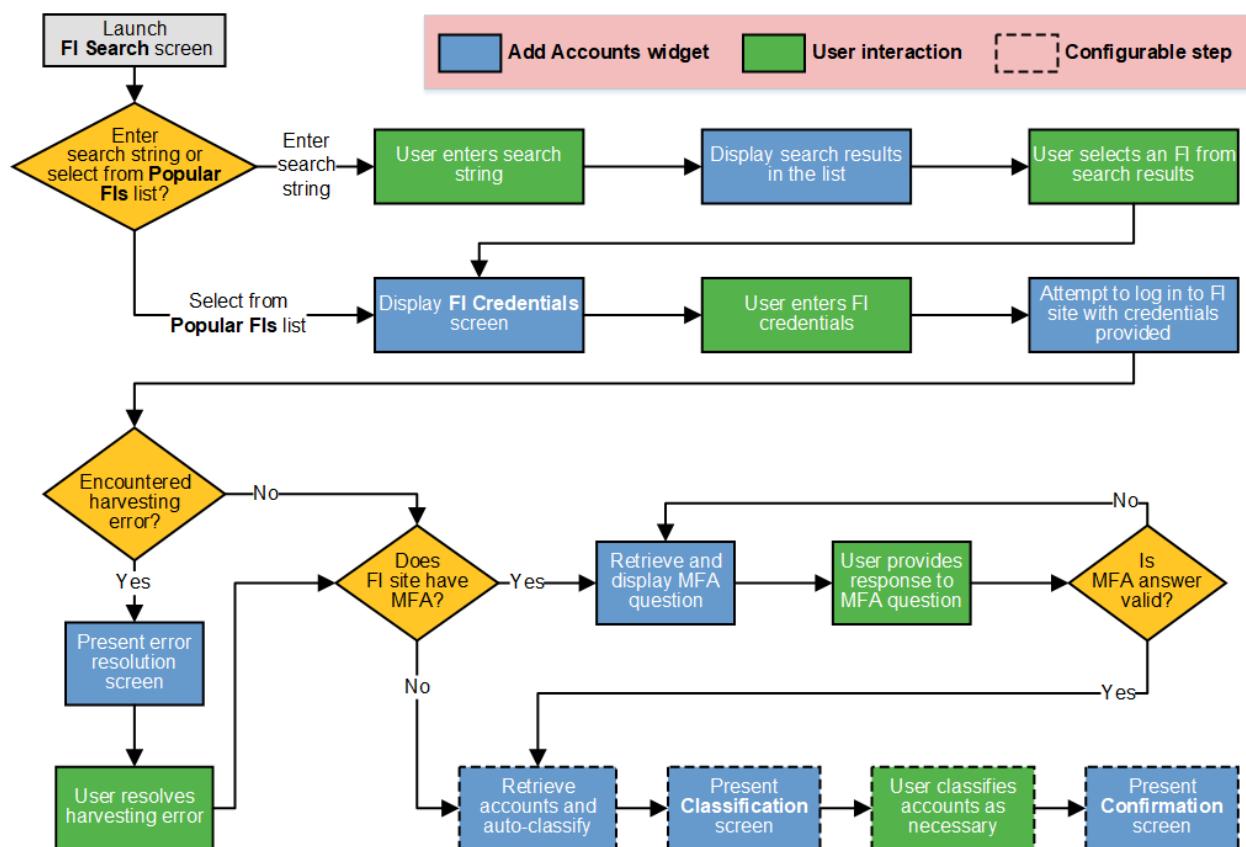
Add Accounts Widget

This section describes the workflow and functionality of the Add Accounts widget. The Add Accounts workflow starts with the user selecting the financial institution holding the account(s) and sharing login credentials to allow the system to add the account(s) and aggregate data from the institution. AllData provides two approaches to launching the Add Accounts widget in a partner application: The default method is the user searching for an institution or selecting one from a list of popular FIs. The alternate approach is called “[deep linking](#).”

Add Accounts Workflow

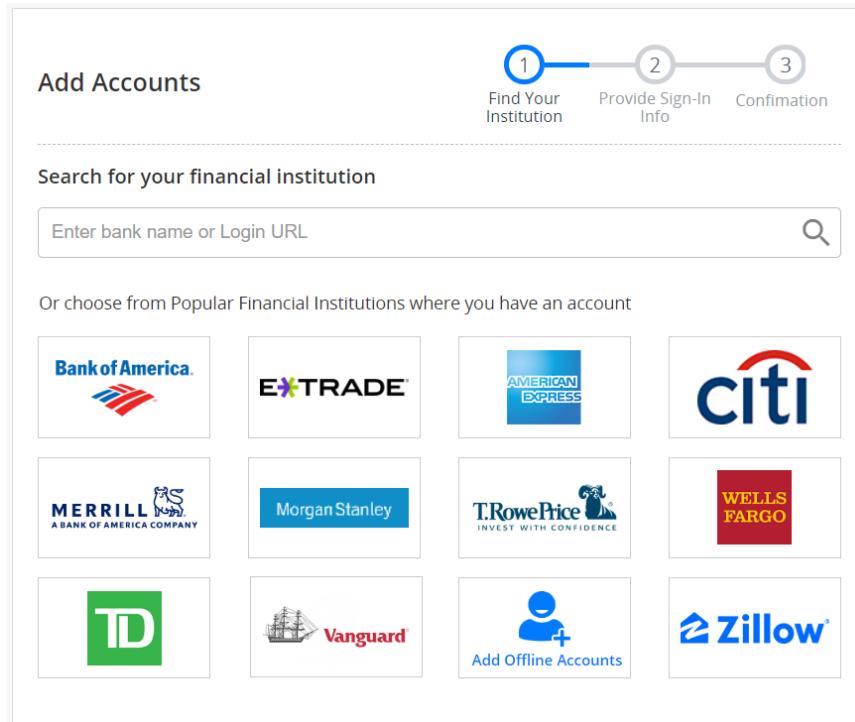
By default, the Add Accounts widget includes the necessary screens to walk the user through adding a single financial institution at a time. After submitting credentials for an FI, the harvesting process starts, and the UI shows a progress indicator until the next screen displays. Any harvesting errors must be resolved before the user continues. After the account balances are successfully retrieved, a confirmation screen appears in the Add Accounts widget.

Add Accounts workflow:



When the Add Accounts widget is launched, the FI search screen appears first. The FI search screen presents the user with four different options to continue: (1) enter a search string for the desired FI, (2) select from the list of popular FIs, (3) navigate to the offline account addition screens, and (4) add real estate values powered by Zillow.

New Add Accounts widget – FI search screen:



Partners have the option to configure the popular financial institutions of their choice to display when launching the Add Account widget. The popular financial institution logos are displayed in the FI search screen, and the user can choose a logo to add one or more accounts under the selected institution. Partners have a choice of ten or twelve institutions to show under the popular list, based on whether they choose to display the Add Offline Accounts and Zillow logos.

The FI search algorithm uses “word searching” instead of “letter searching.” The search string returns matches starting at the beginning of each of the words in the FI name, instead of any part of the FI name.

When the user enters three letters, an auto-complete dropdown appears below the search field. The number of matches to the user-entered text appears below the search field. The auto-complete functionality initially loads the first ten matches, with the institutions’ respective logos. A **Show More** button appears at the bottom of the widget to optionally display more matching institutions from the result set.

Clicking **Show More** includes another ten institution from the result set in the drop-down list. Repeated clicks on the button reveal additional sets of ten institutions from the results until there are no further matches, when the **Show More** button disappears.

Add Accounts screen – FI search auto-complete screen:

The screenshot shows the 'Add Accounts' screen. At the top, there is a navigation bar with three steps: 'Find Your Institution' (step 1, highlighted in blue), 'Provide Sign-In Info' (step 2), and 'Confirmation' (step 3). Below the navigation bar is a search input field containing the text 'person'. Underneath the search input, it says '415 results for person'. A scrollable list of institutions is displayed, each with a logo, name, and URL. The visible results are:

- SunTrust - Personal Banking
https://www.suntrust.com/personalbanking
- HSBC Personal Internet Banking (US)
https://www.us.hsbc.com/1/2/3/personal/online-services/personal-internet-banking/log-on
- Principal Financial Services- Personal Access
https://secure01.principal.com/cview/mcn1.tgi
- 1st Mariner Bank - Personal

Note: Institutions with (!) sign are currently not available.

A blue 'Show More' button is located at the bottom of the search results.

From the search results screen the user can enter another search string, return to the initial Add Accounts screen, or select an FI from the results list to add accounts. Selecting a result opens the credentials submission screen for that institution.

Add Accounts screen – Credential submission screen:

Add Accounts

Find Your Institution Provide Sign-In Info Confirmation

Bank of America.

Bank of America
🔒 <https://www.bankurlgoeshere.com>

Enter your credentials for this institution
FI Login

FI Password
 ...

Select Another Institution Next

When FI request their users to do additional setup to allow aggregating from their website, the information to do additional setup will be provided as special instructions on choosing FI to add accounts. Users need to follow the special instructions before adding accounts from that FI.

Same instructions will be provided on the top of credentials submission screen of that FI. Users can choose **Show More** to view the complete instructions.

Add Accounts screen – Special instructions for users:

Add Accounts

Key Bank now requires you to set up data sharing permission for third party access before you connect to KeyBank accounts to use account aggregation services. If you haven't already done, please follow the steps below

1. Sign on to online banking (url: <https://ibx.key.com/ibxolb/login/index.html#/login>) (This is not available in the mobile app).
2. Select "User Profile"
3. then scroll down to "Password and Security"
4. Toggle "Third Party Access" off or on
5. Confirm

For more information please see url: <https://www.key.com/personal/online-banking/third-party-access.jsp>

Select Another Institution Next

Add Accounts screen – Special instructions in credentials submission form:

The screenshot shows a 'Add Accounts' page. At the top, there is a yellow callout box containing text about data sharing permission for third-party access. Below it, the KeyBank logo and URL (<http://accounts.keybank.com/>) are displayed. A placeholder text 'Enter your credentials' is above two input fields: 'User ID' and 'Password'. To the right of the password field is a visibility toggle icon. At the bottom, there are two buttons: 'Select Another Institution' and a blue 'Next' button.

After the user provides credentials, an “in-progress” screen displays while the harvesting process attempts to access the FI and retrieve the accounts. The user must wait for the harvesting process to return a result before continuing the process.

After successfully harvesting data, the widget shows the Account Classification screen if it is configured. Otherwise it shows the Account Confirmation screen if it is configured. If both screens are turned off, the widget calls the **return_url** to return control back to the partner application. This invocation of **return_url** contains two parameters (**FILoginAcctId** and **AcctId**) which signify the newly added accounts. The **FILoginAcctId** contains one ID referring to the parent login ID record that the user submitted the credentials for. The **AcctId** contains a comma-separated list of accounts that are accessible with these login credentials and are referred to as children accounts.

If the harvest attempt fails due to a harvest alert, the corresponding alert resolution screen appears.

Add Accounts screen – In-progress screen:

The screenshot shows the 'Add Accounts' page in progress for Bank of America. It features a progress bar with three steps: 1. Find Your Institution, 2. Provide Sign-In Info, and 3. Confirmation. Step 2 is highlighted in blue. The Bank of America logo and name are displayed. Below the logo, a message says 'Connecting the institution and securely accessing your account...'. At the bottom, there is a series of blue dots indicating the progress of the connection.

If the harvesting process encounters any errors, they will display within the Add Accounts widget. The alert content and workflows are included in [Appendix A – Harvesting Alert Error Resolution Screens](#).

Add Accounts Screen – Harvesting alert:

The screenshot shows the 'Add Accounts' screen. At the top, there are two logos: 'ALLDATA TEST BANK' and 'CashEdge Bank'. Below them is a yellow warning icon with the text: 'The login credentials for this institution's website may be incorrect.' A callout box contains instructions: 'Login to the [CashEdge Bank](#) website and check for the following:' followed by two numbered steps. Step 1: 'If you are able to login, re-enter the same credentials below.' It includes fields for 'FI Login' and 'FI Password'. Step 2: 'If you are unable to login, contact customer support directly at CashEdge Bank'. At the bottom are two buttons: 'Select Another Institution' and 'Next'.

After the user resolves the harvesting error through the alert resolution screen, another harvesting attempt initiates. The Add Accounts widget displays the in-progress screen until the harvest completes.

If the harvest attempt is successful, and if the configuration parameter is set to True, the Account Classification screen appears. If the harvest attempt fails due to a harvest alert, the next screen will display either the corresponding alert resolution screen or the account confirmation screen, depending on the partner configuration.

After the accounts are retrieved, if the Account Classification screen is enabled, an inventory of the child accounts appears with the account names, types, and totals.

On the Account Classification screen, the user can do the following.

- Select accounts to add or exclude from the service
- Edit account names and account types
- Resolve account type classification errors (208 and 209), if applicable

Add Accounts screen – Account Classification:

The screenshot shows the 'Add Accounts' screen for Bank of America. At the top, there's a header 'Add Accounts' and a progress bar with three steps: 'Find Your Institution' (step 1), 'Provide Sign-In Info' (step 2), and 'Confirmation' (step 3). Below the header, the Bank of America logo and URL ('https://www.bankurlgoeshere.com') are displayed. A sub-header says 'Select the accounts from Bank of America that you'd like to connect.' Below this, four account options are listed in a table format:

Account Type	Action	Balance
401 (k) Account - B	Please select	\$336,558
Brokerage Account	Please select	\$20,646
Credit Card Account	Please select	\$6,493
Saving Account	Please select	\$6,000

At the bottom of the screen is a large blue 'Next' button.

After the accounts have been successfully added to the user's profile, a confirmation screen appears, listing each added account's name, type, and balance.

From the confirmation screen, the user can close the Add Accounts screens or start the Add Accounts process over again by clicking **Add More Accounts** and returning to the FI search screen.

Add Accounts screen – Confirmation screen:

The screenshot shows a confirmation screen for adding accounts. At the top, there's a navigation bar with three steps: 1. Find Your Institution (highlighted in blue), 2. Provide Sign-In Info, and 3. Confirmation. Below this, the institution logo for Bank of America is displayed, followed by the institution name. A section titled "List of all accounts that have been added for this institution." shows four account types with their respective balances: 401 (k) Account - B (\$336,558), Brokerage Account (\$20,646), Credit Card Account (\$6,493), and Savings Account (\$6,000). At the bottom, there are two buttons: "Add More Accounts" (gray) and "Close" (blue).

Account Type	Balance
401 (k) Account - B <small>NEW</small>	\$ 336,558
Brokerage Account <small>NEW</small>	\$ 20,646
Credit Card Account <small>NEW</small>	\$ 6,493
Savings Account <small>NEW</small>	\$ 6,000

After the Add Accounts widget process is complete, the widget calls the return URL to return control back to the partner application.

Add Accounts Workflow (OAuth)

AllData supports OAuth (Open Authorization), an open standard authorization framework for token-based authorization on the internet. This protocol allows users to grant a third-party website or application access to their protected resources, without necessarily revealing their long-term credentials or even their identity. It also helps financial institutions identify and allow the trusted intermediary (the third party) to gather users' financial data through APIs.

Partners must provide a list of their applications that they will integrate AllData widgets into, including "application name" (string) and "application ID" (alphanumeric) to our Professional Services team during implementation. We will register the partner applications so that FIs can identify them and grant access to user data when requested. Partners must notify Fiserv of any future application integrations with AllData widgets so that those applications can also be registered with institutions for use with OAuth.

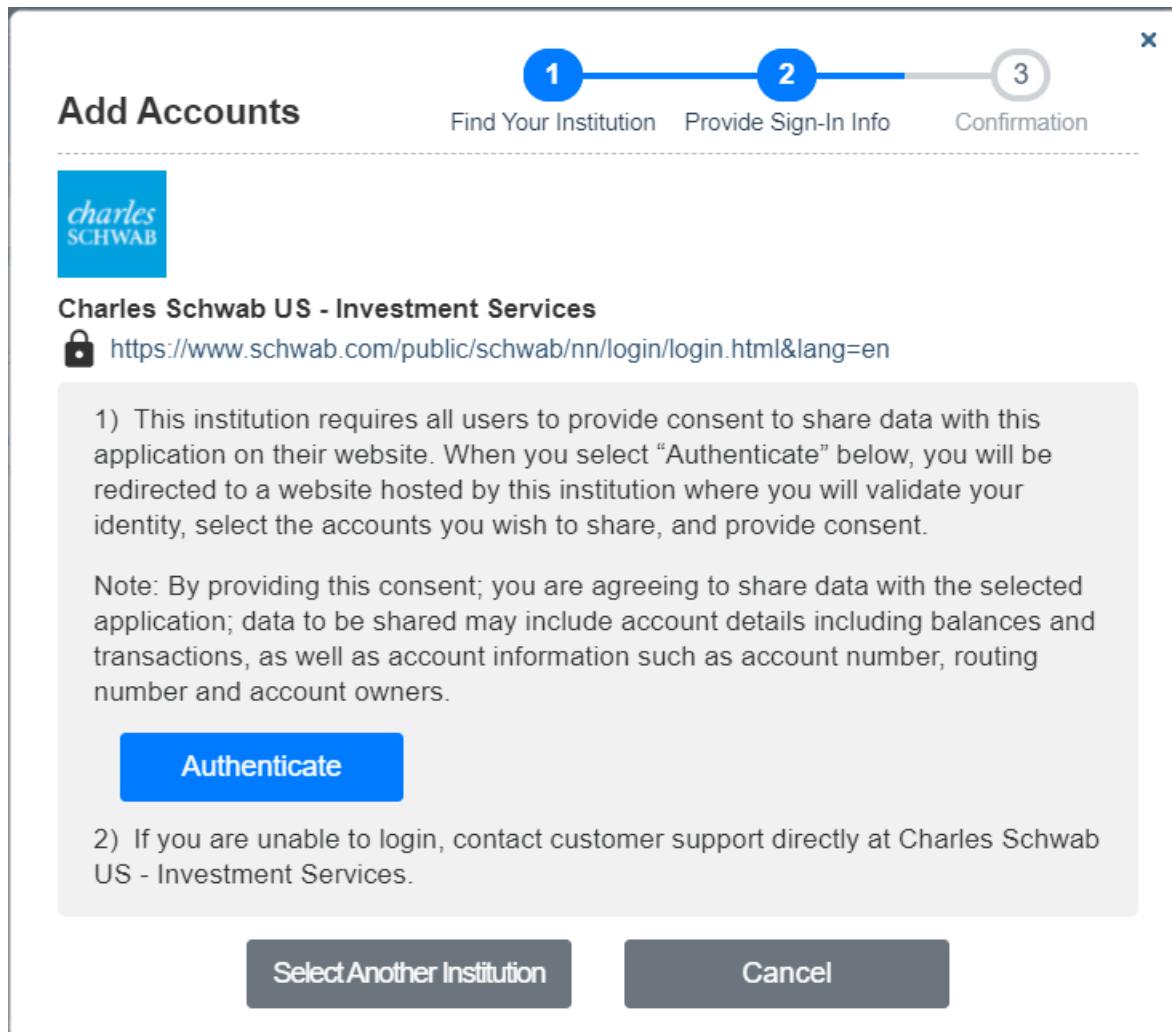
Application ID is an optional parameter to be passed as a SAML 2.0 attribute or an SSO parameter. Partners integrating AllData widgets into multiple applications should send the respective Application ID when invoking a widget. AllData recognizes the Application ID, passes the appropriate information to the FI website during user authorization, and accesses user account information.

Fiserv works with institutions to implement OAuth integration to aggregate account information. We notify partners as new FIs are integrated and ready to support OAuth. When the partner is ready to support an FI with OAuth, AllData activates the protocol for that institution.

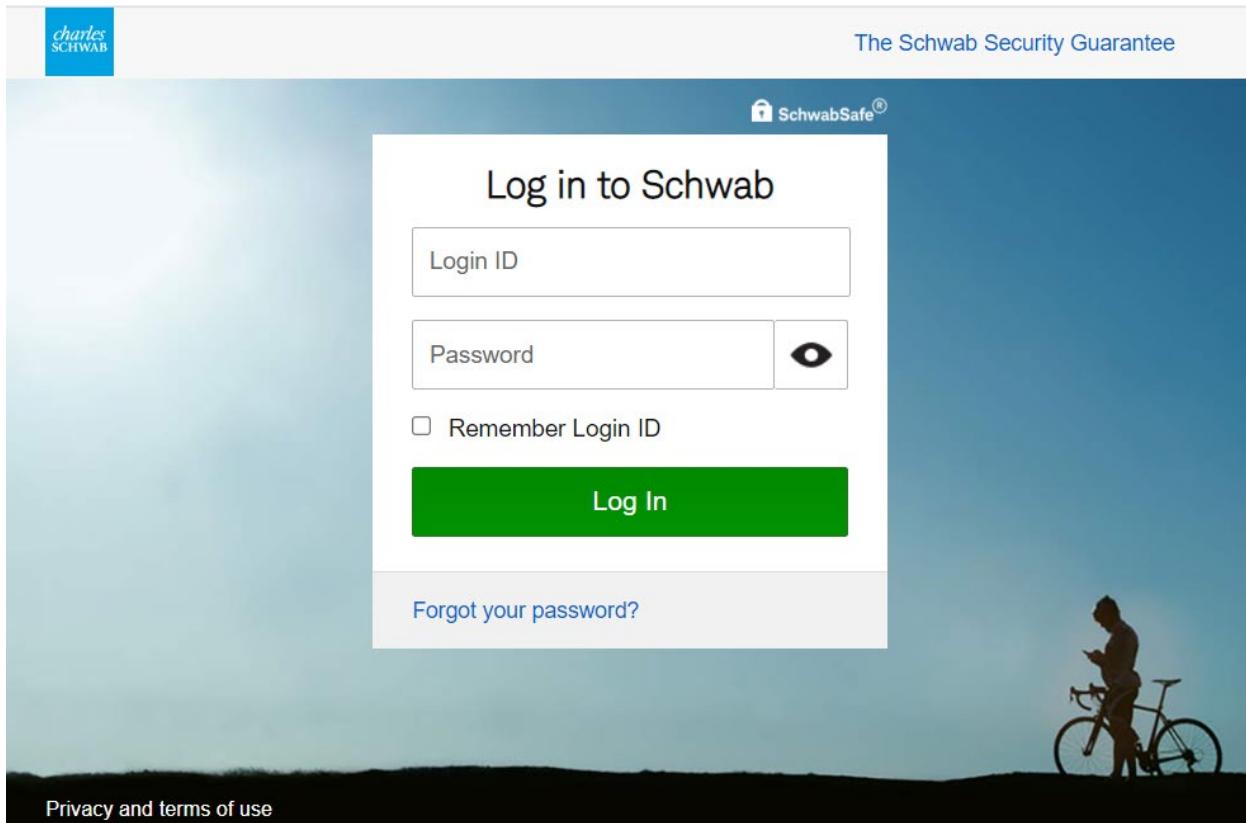
When users attempt to add accounts from an OAuth-implemented FI, a message appears with information about the FI site sharing data with AllData and requests consent. Clicking **Authenticate** redirects to the FI-hosted website. From there, users validate their identity with their login credentials, select the account(s) they wish to aggregate through the application, and provide their consent.

After authorization and consent, the institution sends AllData an access token to access user account information and gather data through the APIs. AllData manages the token and continues to use it to gather account information. Users who wish to revoke their consent and remove any accounts shared with the application can use the Add More Accounts process to revoke their consent.

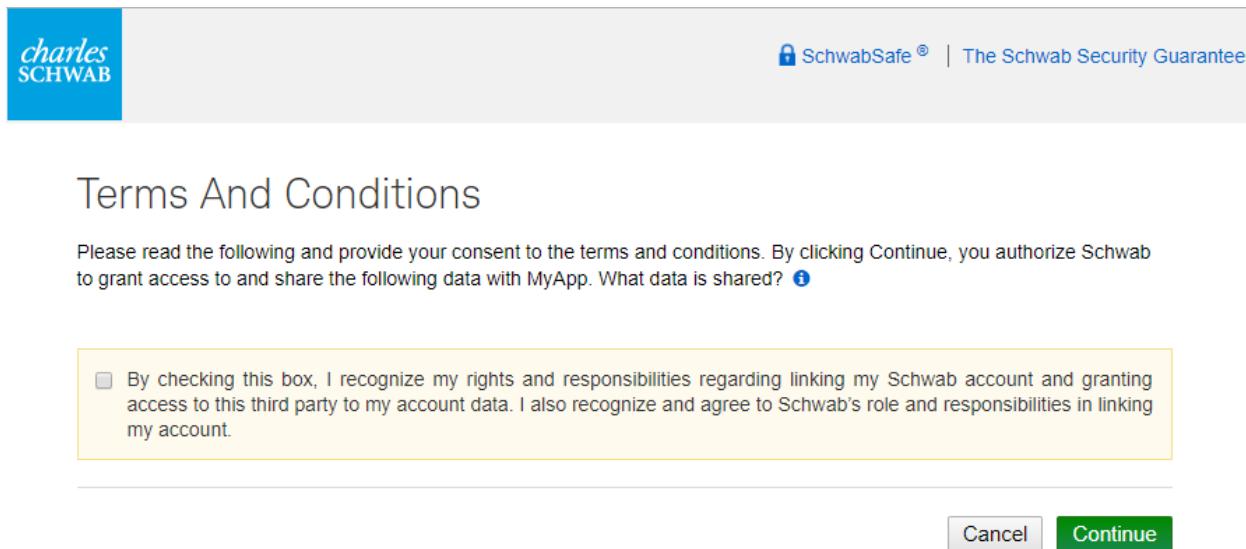
Add Accounts Screen – OAuth Implemented Fl:



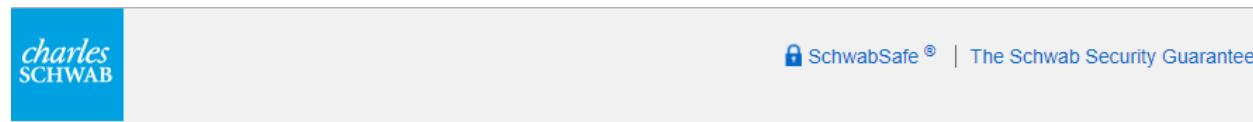
Add Accounts – Institution hosted website:



Consent Page – Institution hosted website:



Select Account – Institution hosted website:



Select your Schwab accounts to link

Select your Schwab account to link to MyApp. You can select to link both current accounts and any new accounts you open.

Your current Schwab accounts

- My Brokerage Acct ...104

New Schwab accounts

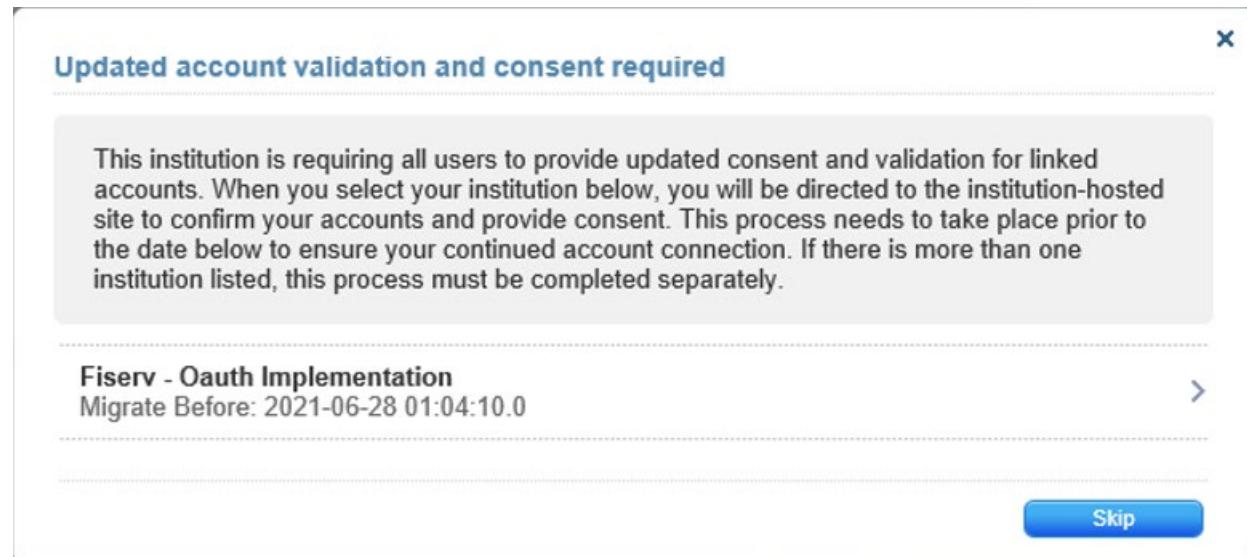
- Automatically link new Schwab accounts in future

[Cancel](#)

[Continue](#)

Users can follow on-screen instructions to authenticate and add new accounts under OAuth-implemented institutions. Users with profiles added to an OAuth-implemented FI through the standard (non-OAuth) approach receive a notice upon launching the Add Account widget prompting them to migrate their profile to the OAuth model. After successfully migrating, the login credentials previously stored for the standard approach are deleted from AllData and the token shared by the institution is used to aggregate account information.

Add Accounts Screen – OAuth migration User Notification:



If a user has a profile under multiple institutions that are converted to OAuth by Fiserv, a notification lists the FIs and encourages the user to migrate them.

Add Accounts Screen – OAuth migration User Notification (Multiple OAuth FIs):

The screenshot shows a modal window titled "Updated account validation and consent required". It contains a message explaining that the institution requires users to provide updated consent and validation for linked accounts. Below the message is a list of two institutions:

- Fiserv - Oauth Implementation**
Migrate Before: 2020-09-14 23:59:59.0
- CashEdge Bank - Retail Investment**
Migrate Before: 2020-09-14 23:59:59.0

At the bottom right of the modal is a blue "Skip" button.

Add Accounts Screen – User with single profile under an institution:

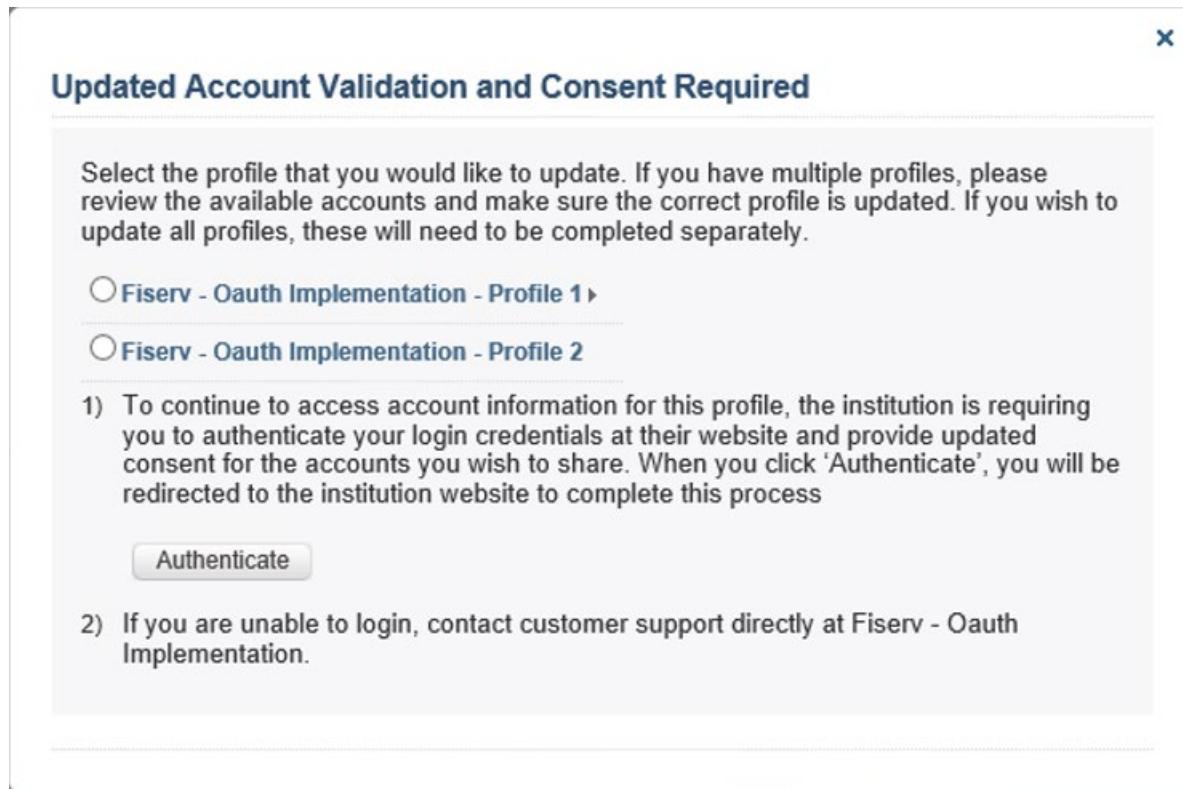
The screenshot shows a modal window titled "Updated Account Validation and Consent Required". It contains a list of instructions:

- 1) To continue to access account information for this profile, the institution is requiring you to authenticate your login credentials at their website and provide updated consent for the accounts you wish to share. When you click 'Authenticate', you will be redirected to the institution website to complete this process
- 2) If you are unable to login, contact customer support directly at Fiserv - Oauth Implementation.

At the bottom right of the modal is a grey "Cancel" button.

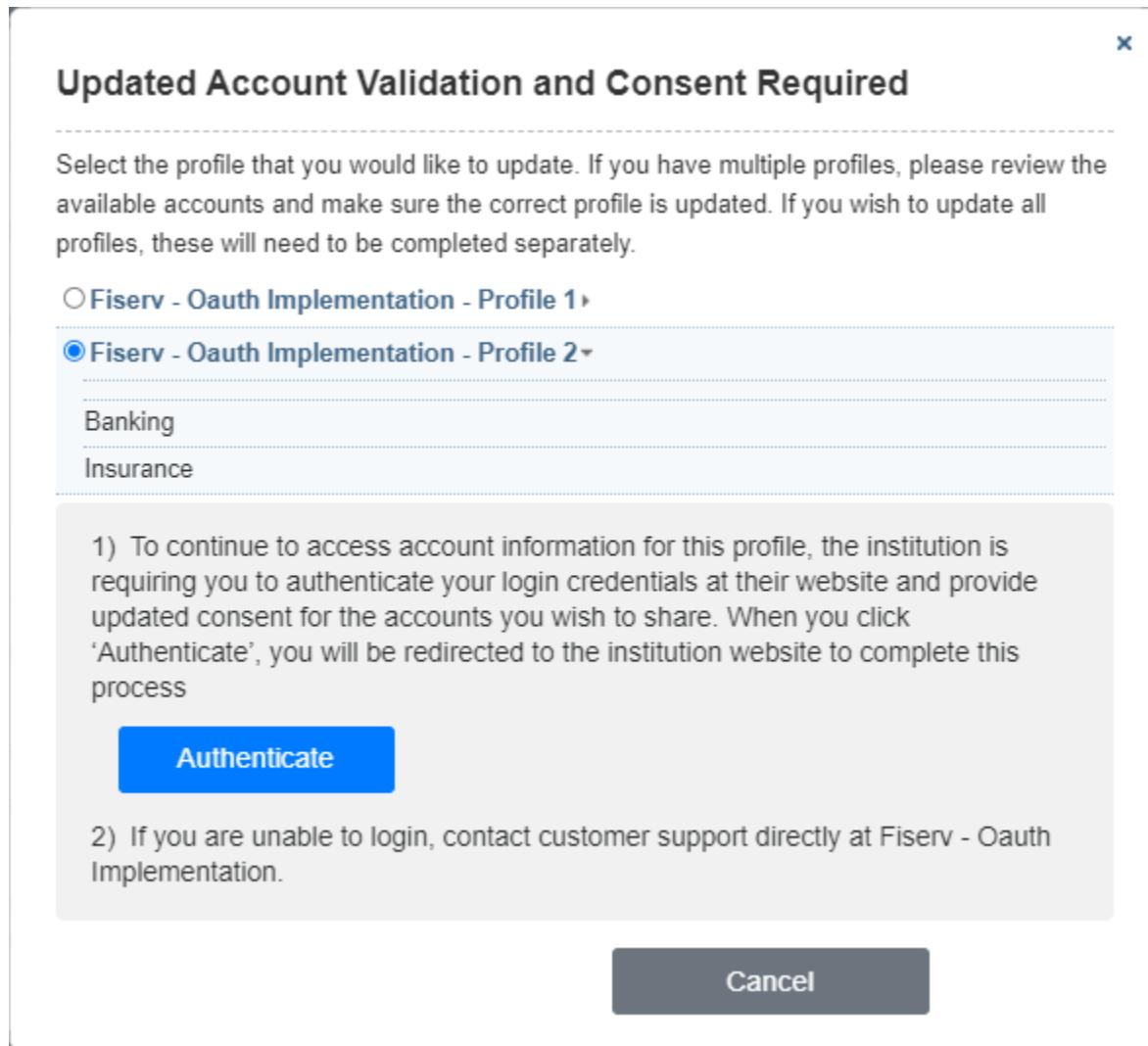
A user with multiple profiles under an institution selects the profile to migrate from a list.

Add Accounts Screen – User with multiple profile under an institution:



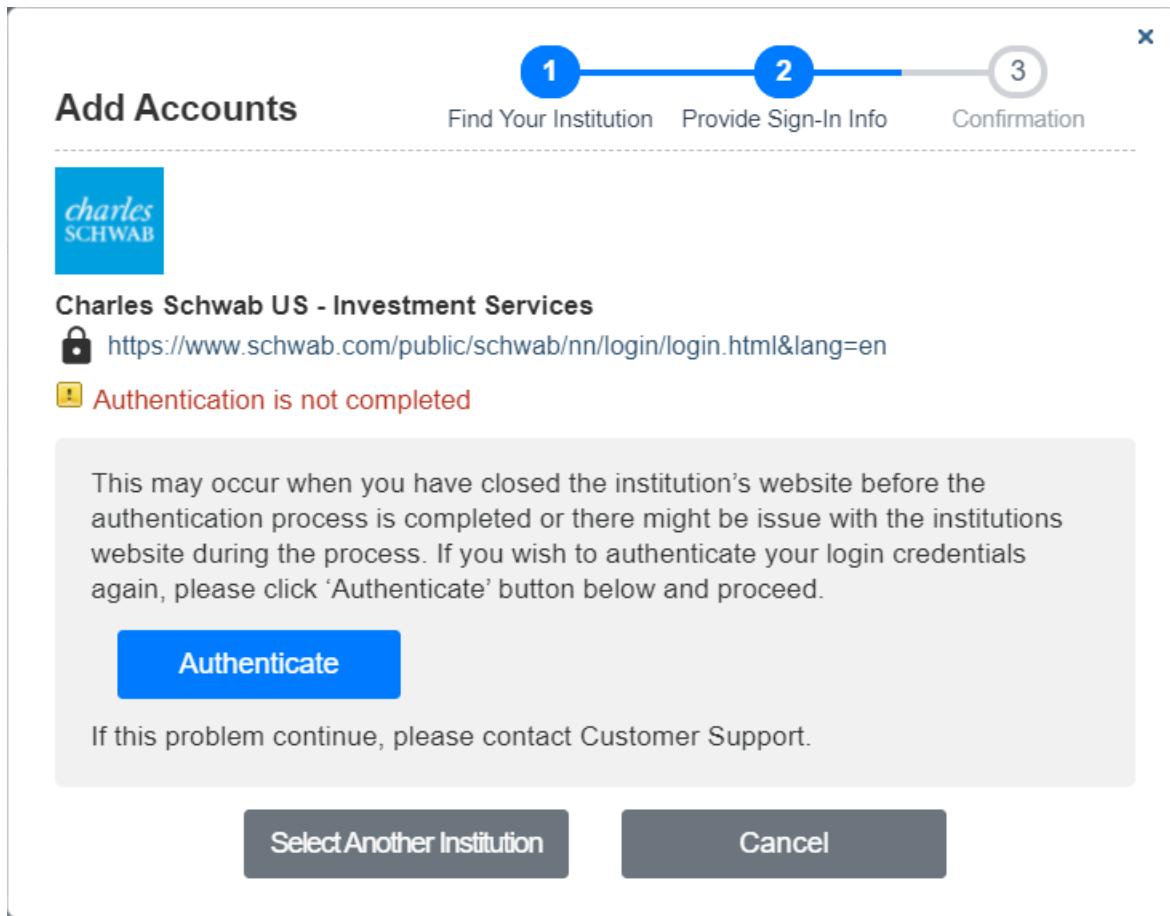
After selecting a profile on the previous screen, the accounts added under that profile appears. This is to help the user confirm the correct profile selection and to list all the existing accounts in AllData so that the user can be sure to choose all the same accounts in the account selection screen on the FI-hosted website. If the user fails to choose an existing account, the institution will not return that account information to Fiserv in their API and account updates will fail.

Add Accounts Screen – Verify underlying accounts and reconfirm the profile for migration



If an issue occurs during the OAuth workflow process, the following message appears to prompt the user to re-initiate the authentication process.

Add Accounts Screen – Failure scenario in OAuth workflow



Fiserv enters into individual agreements with financial institutions to move them to the OAuth model. An institution may provide a threshold period to support both standard and OAuth workflows, allowing existing users to migrate to the OAuth model. After the deadline, user profiles that have not migrated to OAuth will be marked with the 312 error code and suspended for update. Suspended users must migrate their profiles immediately to update their accounts again.

Error 312 – OAuth Implementation:

Alert Details

 **Fiserv - OAuth Implementation**

1) Due to an updated connection process with Fiserv - OAuth Implementation, this institution requires all existing users to re-confirm their consent to share data with this application. When you select "Authenticate" below, you will be redirected to a site hosted by this institution where you will validate your identity, select the accounts you wish to share, and confirm consent.

Note: By providing this consent, you are agreeing to share data with the selected application. Data to be shared may include account details including balances and transactions, as well as account information such as account number, routing number and account owner names.

Authenticate

2) If you are unable to authenticate, contact customer support directly at Fiserv - OAuth Implementation

Cancel

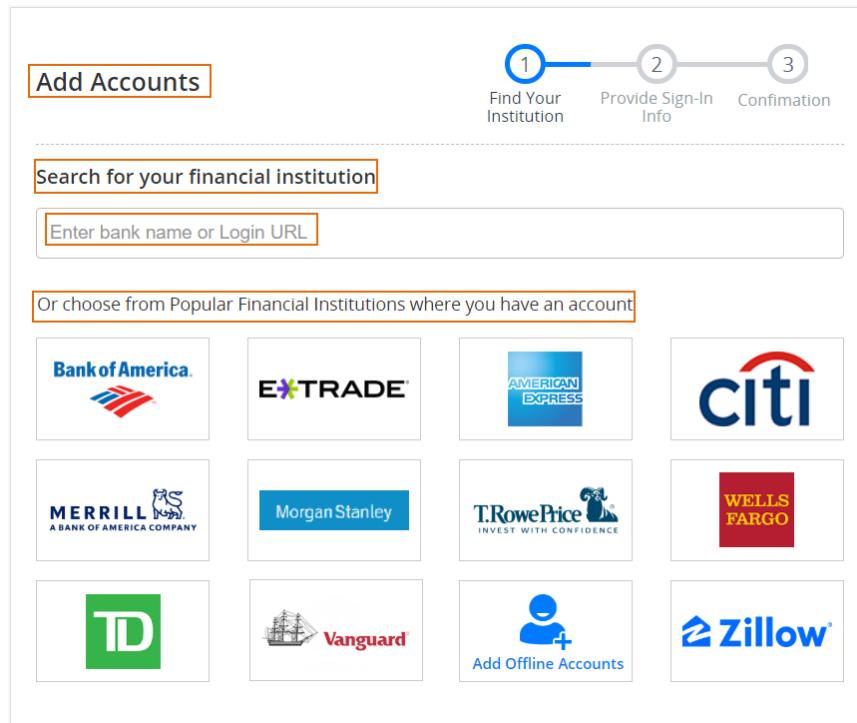
Error Ref: 312 - 1869493

Text Configurations via Resource Bundles

AllData widgets use resource bundles to persist most of the text that users see in the widget screens. This allows partners to customize the language and content to meet their business requirements. The following section identifies the configurable text in the primary screens in the Add Accounts widget.

Initial screen

Initial screen – Pre-search labels:



The following table provides the labels and default values for configurable elements of the initial screen.

#	Label	Default value
1	Widget title	Add Accounts
2	Search for your FI	Search for your financial institution:
3	FI search suggestion	Enter Bank or Login URL
4	Popular FI Select	Or Choose from Popular Financial Institutions where you have an account.

Login Credentials screen

Login Credentials screen:

The screenshot shows a step-by-step process for adding accounts. At the top, there is a header with the title "Add Accounts" and a progress bar consisting of three circles labeled 1, 2, and 3, corresponding to the steps: "Find Your Institution", "Provide Sign-In Info", and "Confirmation".

The main area displays a selected institution, "Bank of America", with its logo and URL "https://www.bankurlgoeshere.com". Below this, there is a text input field for "Enter your credentials for this institution" and two password fields: "FI Login" and "FI Password".

At the bottom, there are two buttons: "Select Another Institution" and a large blue "Next" button.

Login Credentials screen – Access failure:

Add Accounts

 **CashEdge Bank**

! The login credentials for this institution's website may be incorrect.

Login to the [CashEdge Bank](#) website and check for the following:

1) If you are able to login, re-enter the same credentials below.

FI Login

FI Password

2) If you are unable to login, contact customer support directly at [CashEdge Bank](#)

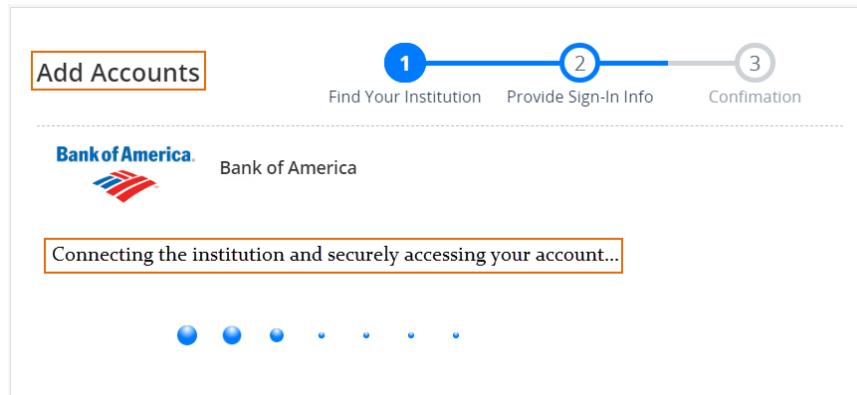
[Select Another Institution](#) [Next](#)

The following table provides the labels and default values for the configurable elements of the Login Credentials screen.

#	Label	Default value
5	Widget title	Add Accounts
6	Enter your credentials	Enter your credentials for this institution
7	Primary message	The login credentials for this institution's website may be incorrect.
8	Instructions	Login to <FI name> website and check for the following:
9	Step 1	If you are able to login, please re-enter the same credentials below:
10	Step 2	If you unable to login, contact customer support directly at <Institution Name>.

Retrieval screen

Retrieval screen:



The following table provides the labels and default values for the configurable elements of the Retrieval screen.

#	Label	Default value
11	Widget title	Add Accounts
12	Connecting and retrieval assurance message	Connecting the institution and securely accessing your account...

Account Confirmation screen

Account Confirmation screen:

The screenshot shows a step-by-step process for adding accounts. Step 1: Find Your Institution (Bank of America selected). Step 2: Provide Sign-In Info. Step 3: Confirmation. The main area displays a list of accounts for Bank of America:

Account Type	Balance
401 (k) Account - B <small>NEW</small>	\$ 336,558
Brokerage Account <small>NEW</small>	\$ 20,646
Credit Card Account <small>NEW</small>	\$ 6,493
Savings Account <small>NEW</small>	\$ 6,000

To continue adding more accounts, click Add More Accounts.

Add More Accounts **Close**

The following table provides the labels and default values for the configurable elements of the Account Confirmation screen.

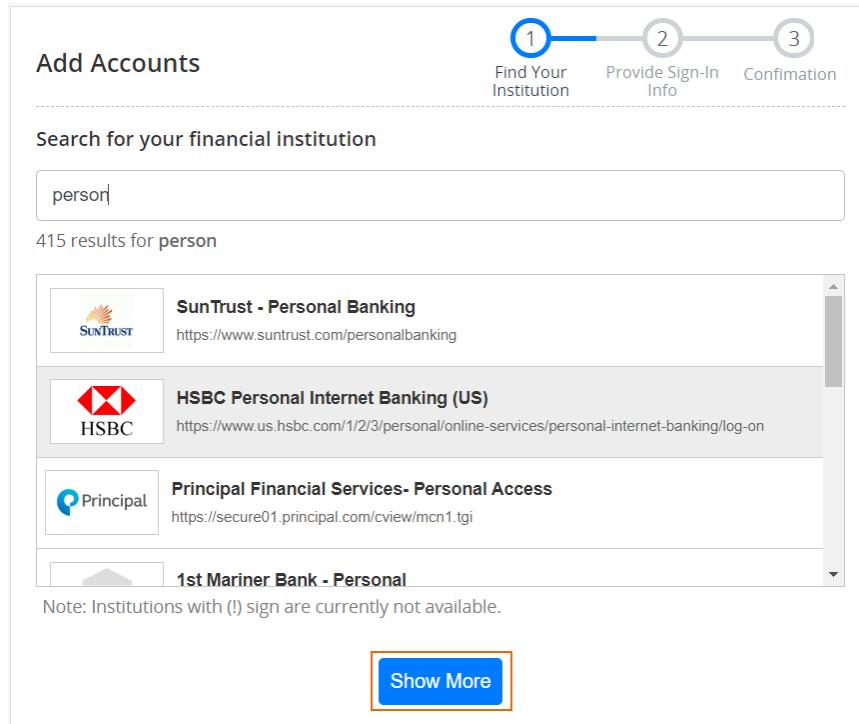
#	Label	Default value
13	Widget title	Add Accounts
14	Added Accounts	List of all account that have been added for this institution.
15	Continue adding more accounts	To continue adding more accounts, click Add more Accounts.

Button Label Configuration

The labels on each button that is available in the Add Account widget are configurable, with a default value. Details for each label and their default value are as follows:

Initial screen

Initial screen:



The following table provides the description and default label of the button on the Search Results screen.

#	Description	Default label
16	Show More button	Show More

Login Credentials screen

Login Credentials screen:

The screenshot shows the 'Add Accounts' screen with the 'Find Your Institution' step highlighted. The process consists of three steps: 1. Find Your Institution, 2. Provide Sign-In Info, and 3. Confirmation. The 'Find Your Institution' step is currently active, showing the Bank of America logo and URL (<https://www.bankurlgoeshere.com>). Below this, there are fields for 'FI Login' and 'FI Password'. At the bottom, there are two buttons: 'Select Another Institution' (grayed out) and 'Next' (highlighted with a blue border).

The following table provides the descriptions and default labels for the buttons on the Login Credentials screen.

#	Description	Default label
17	Select Another FI button	Select Another Institution
18	Next button	Next
19	Submit button	Submit

Account Confirmation screen

Account Confirmation screen:

The screenshot shows the 'Add Accounts' screen for Bank of America. At the top, there is a progress bar with three steps: 1. Find Your Institution (highlighted in blue), 2. Provide Sign-In Info, and 3. Confirmation. Below the progress bar, the Bank of America logo is displayed. A list of accounts is shown, including a 401(k) account, a brokerage account, a credit card account, and a savings account. Each account entry includes the account type, a 'NEW' badge, and its balance. At the bottom, there are two buttons: 'Add More Accounts' and 'Close'.

#	Description	Default label
20	Add More Accounts button	Add More Accounts
21	Close button	Close

The following table provides the descriptions and default labels for the buttons on the Account Confirmation screen.

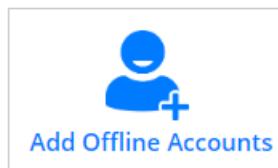
#	Description	Default label
20	Add More Accounts button	Add More Accounts
21	Close button	Close

Offline Account Link

On the initial screen of the Add Accounts widget, there is an option in the popular institutions called **+Add Offline Accounts**. The URL to which this button points is configurable. The property may be passed to the Fiserv application via a pre-configured property or via a parameter in SSO (refer to the [Integration Approaches section](#) for more information).

The content displayed in the Add Accounts screen to access the +Add Offline Account functionality is also configurable.

+Add Offline Accounts logo:



If the property is not set, the **+Add Offline Accounts** link will direct to the native offline account functionality. If the property is set to a partner-specified URL, the link will open the URL within the widget frame.

Add Offline Accounts native functionality:

Add Offline Account

If you have an asset or liability that does not have online access (Auto, Jewelry, Real Estate, etc...), add that as Offline account here.

Select the type of offline account to add:

Auto/Boat

Enter a name for the offline account:

Enter an amount value for the offline account:

Go Back

Next

The native Add Offline Account screen lets users select an account type from a predefined selection list, provide a name for the account, and enter a value amount.

Zillow (Zestimate®)

Zillow is the leading real estate marketplace dedicated to empowering consumers with data, inspiration, and knowledge around the place they call home. The “Zestimate” home valuation model is Zillow’s estimate of a home’s market value. The Zestimate incorporates public and user-submitted data, and considers home facts, location, and market conditions.

Fiserv has built the capability to aggregate Zestimate property values from Zillow with property information shared by users. To obtain the property value, Fiserv and Zillow have agreed to brand Zillow as the information provider wherever the Zillow FI and Zestimate information appear. Partners who wish to enable Zillow as an option in the Add Accounts widget should do the Zillow branding in their UI when displaying the Zillow FI information.

Include the following in the partner UI when displaying the Zillow (Zestimate) information.

- Zillow logo:
http://www.zillow.com/widgets/GetVersionedResource.htm?path=/static/logos/Zillowlogo_150x40.gif
- Zillow “Terms of Use” link: <http://www.zillow.com/corp/Terms.htm>
- “What’s a Zestimate” link: <http://www.zillow.com/zestimate/>

Zillow branding in UI (sample):

The screenshot shows a Zillow Zestimate page for a house located at 3220 Georgia Ave S, Saint Louis Park, MN, 55426. The page header says "ACCOUNT" and "Zillow (Zestimate)". The address is listed as "house". The Zestimate value is \$279,805.00, with a link to the full property details. The Zillow logo is present. The Zillow footer notice reads: "Zillow, Inc., 2006-2016. Use is subject to Terms of Use. What's a Zestimate?" and "PROVIDED BY Zillow".

Zillow property information submission screen:

The screenshot shows a form titled "Add Real Estate". At the top is the Zillow logo and URL. Below it is a placeholder text: "Enter your property information for Zillow (Zestimate)". The form consists of several input fields: "Property Name" (text input), "Property Street" (text input), "Property City" (text input), "Property State" (dropdown menu set to "Alabama"), and "Property Zip Code" (text input). At the bottom are two buttons: "Go Back" (grey) and "Next" (blue).

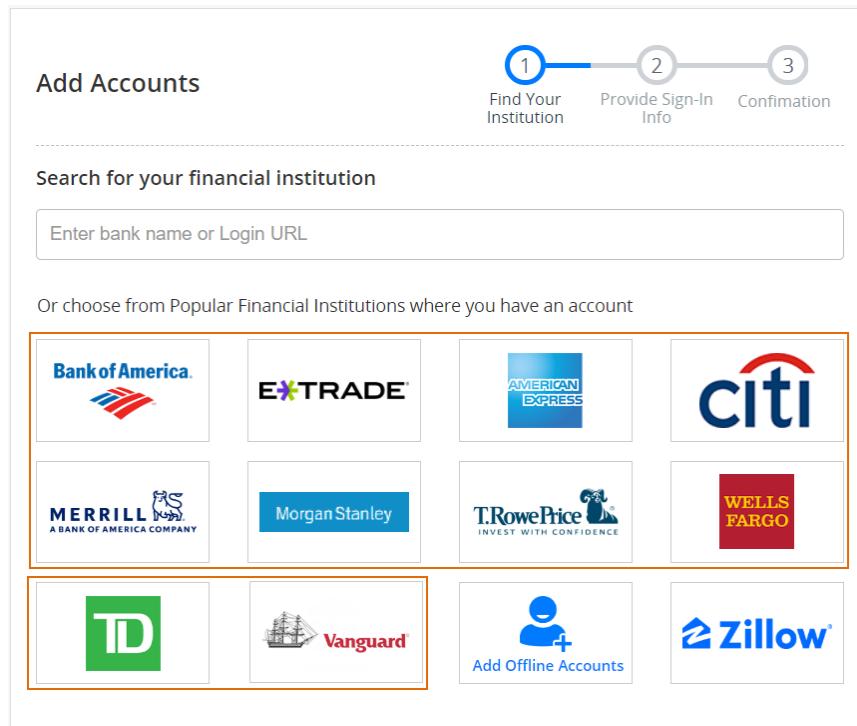
FI List

Partners can define the financial institutions that are available for users to add in the Add Accounts widget. If an FI is blocked, it will not appear in any search results and cannot be added to the partner's home. Partners should work with the Fiserv Professional Services team to get a full list of FIs that are supported and determine which ones to allow/block to meet their business requirements.

Popular Financial Institutions List

Partners can configure the FIs that appear as popular institutions represented by their logos in the initial Add Accounts screen. Additionally, partners may choose whether to display twelve popular FI logos or ten logos plus an **Add Offline Accounts** button and a **Zillow** button on the initial screen of the widget. Clicking an institution logo in the popular institutions list takes the user to the corresponding credential submission screen.

Popular financial institutions list:



The popular institutions list is configurable but will display a default list if not configured by the partner.

FI Popularity Index

Partners can configure their own FI popularity ranking list by assigning popularity index values to the financial institutions that they would like to display more prominently in the Add Accounts widget search results screen. When showing search results, the FIs with the ten highest popularity index values among the complete search results will display above any other matching FIs.

Partners can assign index values to make certain financial institutions rank more prominently in search results in the Add Accounts widget

Account Type Whitelist

The Add Accounts widget allows the partner to select the types of accounts to allow users to add within their home. The partner selects the account types, extended account types, and instrument values to be included in an account type whitelist that will define the accounts that are supported within their home.

During the add accounts process, if an account is auto-classified to an account type and extended account type value that is not included in the home's account type whitelist, the process will ignore the account and not add it to the service.

Account types available to be included in account type whitelist:

Account category	Account type	Account type whitelist
Banking	Certificate of Deposit	
	Cash Management	
	Checking	
	Money Market	
	Savings	
Bill	Billing	
	Landline Phone	
	Streaming Media	
	Mobile Phone	
	Internet	
	Cable/Satellite TV	
Education savings	529 / Education Savings	
Insurance	Annuity	
	Term Life	
	Universal Life	
	Whole Life	
	GIC/Term Investment (GIC)	
Investment	Brokerage	
Other liabilities	Credit Card	
	Loan	
	Auto Loan	
	Investment Loan	
	Student Loan	
	Line of Credit	
	Other Liability	
Mortgage and home equity loans	Mortgage	
	Home Equity Loan	
Retirement	401 (k)	
	403 (b)	
	457	
	Deferred Comp Plan	
	KEOGH	
	Pension	
	Profit Sharing Plan	
	IRA	
	IRA – Roth	
	IRA – Rollover	
	IRA – Sep	
	IRA – Simple	

Additionally, only account types that are included in the Account Type whitelist for the partner will display in the account type dropdown boxes that display in the following screens: account classification screen (Add Accounts widget), account classification error (Alerts screen), account management screen (Account Management widget).

Account Type Name Lookup Table

The Add Accounts widget includes Account Type Name lookup feature that allows the partner to rename the account types that are supported within the home. The partner can use the following list to rename account types according to their requirements.

Sample Account Type Name lookup:

Account category	Fiserv account type name	Partner account type name
Banking	Certificate of Deposit	
	Cash Management	
	Checking	
	Money Market	
	Savings	
Bill	Billing	
	Landline Phone	
	Streaming Media	
	Mobile Phone	
	Internet	
	Cable/Satellite TV	
Education savings	529 / Education Savings	
Insurance	Annuity	
	Term Life	
	Universal Life	
	Whole Life	
	GIC/Term Investment (GIC)	
Investment	Brokerage	
Other liabilities	Credit Card	
	Loan	
	Auto Loan	
	Investment Loan	
	Student Loan	
	Line of Credit	
	Other Liability	
Mortgage and home equity loans	Mortgage	
	Home Equity Loan	
Retirement	401 (k)	
	403 (b)	
	457	

Account category	Fiserv account type name	Partner account type name
	Deferred Comp Plan	
	KEOGH	
	Pension	
	Profit Sharing Plan	
	IRA	
	IRA – Roth	
	IRA – Rollover	
	IRA – Sep	

When account type names are displayed on the user interface, the Account Type Name lookup table is used to identify the correct names to display for each partner.

If an account type is not on the account type whitelist for a partner, it will not display at all, regardless of the value in the Account Type Name lookup table.

FI Request

The Add Accounts widget includes a configurable option to allow a user to request adding a new FI to the service, meaning an institution that Fiserv does not currently support. During this process Fiserv will develop scripts to access the new FI. This feature is only available if the partner has discussed and agreed to the process as part of the contract with Fiserv.

When this option is enabled, the FI request message appears in the Add Account widget screen after the user's search for an FI returns no matches. A link directs the user to a request form to submit the FI name and URL.

The following areas of the FI Request screen are customizable:

- “Search for your financial institution” label
- Search result message beneath text box
- Body contents

No Search Results Found Message with New FI Request Enabled:

Add Accounts

Search for your financial institution

corril

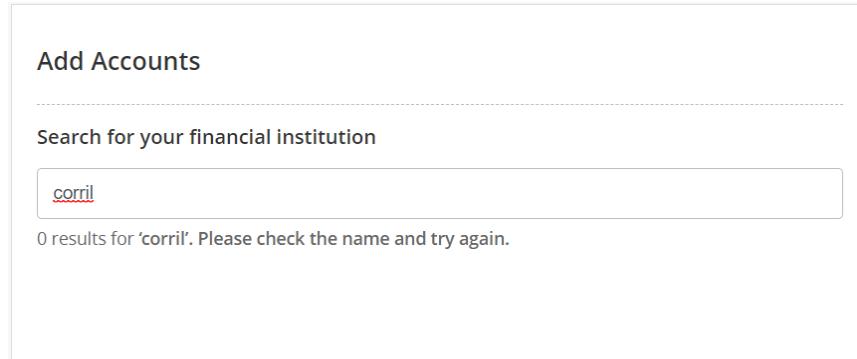
0 results for 'corril'. Please check the name and try again.

If you do not find your institution, select this option to

+ Request a new institution support

If the FI Request option is not enabled for the partner, the **Request a new institution support** button does not appear when there are no search results.

No Search Results Found Message without FI Request Enabled:



Add Account Screens CSS Definition

Primary CSS Classes

The following table provides an inventory of the primary CSS classes that control the look and formatting of the Add Accounts widget screens:

#	CSS class	Description	CSS parameter and default value
1	Background color	This parameter controls the background color that obscures the main screen when the Add Accounts screen overlays are activated.	.wrapper { background: #fff; margin: 15px 0; }
2	Widget screen header	This parameter controls the font style of the main header of the Add Accounts screen overlays.	h1.main { font-size: 20px; font-weight: 600; line-height: 28px; align-items: center; display: flex; color: #333; margin-bottom: 5px; }
3	Gray color button	This parameter controls the color of the button on the Add Accounts screen.	.btn-secondary { color: #fff; background-color: #6c757d; border-color: #6c757d; }
4	Blue color button	This parameter controls the color of the button on the Add Accounts screen.	.btn-primary { color: #fff; background-color: #007bff; border-color: #007bff; }

#	CSS class	Description	CSS parameter and default value
5	Error header	This parameter controls the font style of the error header on the Add Accounts screen.	.alert_redtext { background:url(..../images/icons/alerts.png) no-repeat 5px 0px; font-size:1.15em; color:#b83320; padding:5px 0 10px 40px; margin:8px 0px; font-weight:bold }
6	Content background	This parameter controls the content background.	.accSelect { background: #f1f1f1; font-size: 14px; padding: 15px 20px 5px 20px; border-radius: 5px; -webkit-border-radius: 5px; /* Safari 3-4, iOS 1-3.2, Android 1.6- */ -moz-border-radius: px; /* Firefox 1-3.6 */ }
7	Links	This parameter controls the font style of the links (for example, offline account, FI URL, and popular FI links).	a {color: #007bff; text-decoration: none; background-color: transparent; }
8	Search results message	This parameter controls the panel that displays below the search field.	.resultCount { margin: 5px 0 0 0; color: #666; }
9	Validation error message	This parameter controls the panel that displays when there are field level validation errors.	.iceMsgsError, .warningtip { list-style: none; color: #000000; background-color: #fcc5c5; padding: 0.75rem 1.25rem; margin-bottom: 1rem; border: 1px solid #e02020; border-radius: 0.25rem; display: block; }

Images

All images and material icons in the Add Accounts widget are configurable. The URLs where each of the images are retrieved from are configured in the Widget CSS file.

#	Default image	Description	CSS parameter and default values	Default size
1		Large alert icon	<pre>.alert_redtext{background:url(..../images/icons/alerts.png) no-repeat 5px 0px; font-size:1.15em; color:#b83320; padding:0px 0px 10px 40px; margin:8px 0px; font-weight: normal; }</pre>	23x23
2		Eye icon	<pre>.eyeIcon { background: #fff; border: 1px solid #bebebe; cursor: pointer; border-left: 0px; }</pre>	
3		Lock icon	<pre>.urlLink { display: flex; line-height: 24px; margin-bottom: 15px; }</pre>	
4		Close window icon	<pre>.cboxClose{float:right; background:url(..../images/celightbox/button_close.png) top right no-repeat; width:8px; height:8px;display:block;margin:-10px -10px;_margin:5px;cursor: pointer;}</pre>	10x10

Widget Configuration Parameters

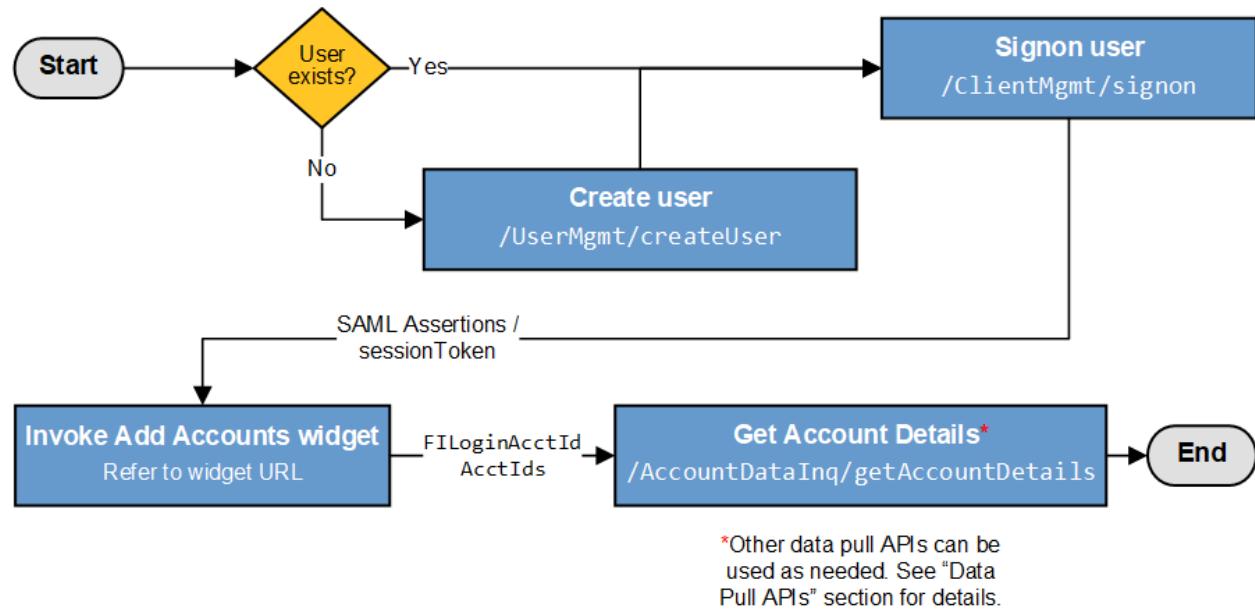
The following table provides the possible functionalities configuration which partners can enable or disable in their implementation.

Parameter name	Description	Accepted values	Default
CSSURL	Partner preferred URL for widget specific CSS. This URL is appended at the end of all CE CSS files so that partners can define only the styles they want to override.		
DisplayCloseIcon	Displays Close icon on the page	True, False	True
AddOfflineAccountLink	Displays the "Add Offline Account" logo link under popular financial institution list	True, False	True
EnableZillow	Displays the "Zillow" logo link under popular financial institution list	True, False	False
EnableAccountClassification	Displays the account classification page	True, False	True
EnableAccountConfirmation	Displays page for the user to confirm adding all accounts	True, False	True
IncludeClassifiedAccounts	Includes the all the added accounts (True). Displays only the accounts with classification errors (False) on the Account Classification page	True, False	True
EnableFIRequest	Displays "Request a new institutions support" button in case the search results do not return any FI	True, False	False

Widget Invocation

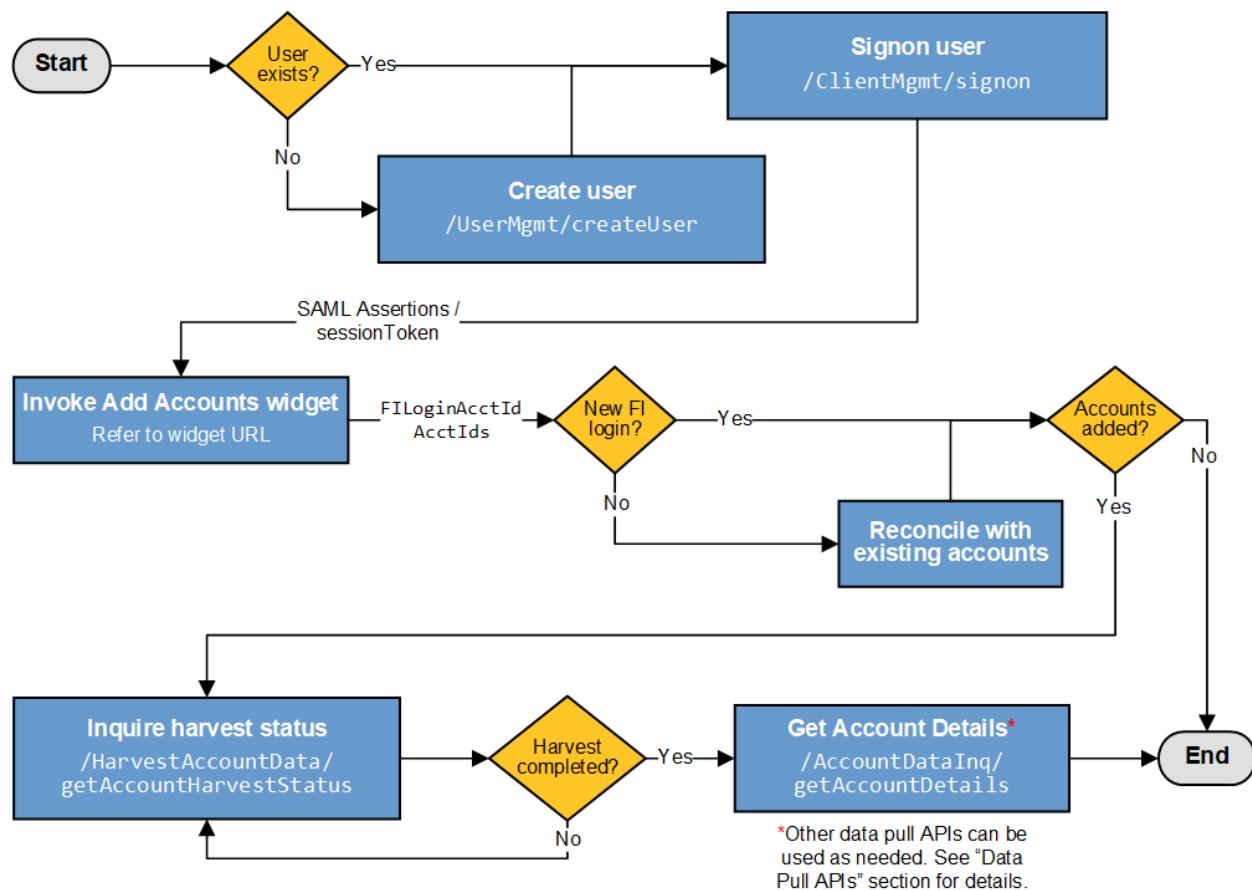
The following process diagram explains the web services APIs the partner needs to call before and after the invocation of the Add Accounts widget.

Default Add Accounts widget invocation process:



By default, the Add Accounts widget displays an Account Classification and Confirmation page. If your implementation disables this page and is configured in such a way that Add Accounts returns control back to you after accounts are pulled from the FI, use the following flow where you need to confirm whether the harvesting was successful and whether detailed harvesting for retrieving account details is complete.

Add Accounts Widget Invocation Process when Account Add Confirmation is not configured:



Widget URL

Access the Add Account widget in the partner integration environment with the following URL.

<Domain URL>PFM_UI/widgets/base/addaccounts/addAccountsWidget.iface

...with the mandatory POST parameter “sessionToken=<sessionToken>” and any optional parameters required for the scenario

The partner integration team provides the production URL.

- **Parameters required for invocation:** The required parameters for Add Accounts widget are **sessionToken** and **return_url**. It is recommended that you send the **keepalive_url** and **error_url**.
- **Parameters on return:** Add Accounts widget will invoke **return_url**, with **FILoginAcctId** and **AcctId** parameters.
- **Error conditions:** Add Accounts widget handles any harvesting errors in interactive manner unless the user closes the widget prematurely.

Data Pull APIs

By default, when the Add Accounts widget has completed its flow successfully, the harvesting engine would have completed pulling relevant account information for all the added accounts. This includes account summary information, transactions, and any investment positions. This harvested data is made available through data pull APIs such as *HarvestDataInq/getAccountDetails*. Refer to the AllData Web Services API Specifications Guide provided for more details.

If the Account Classification and Confirmation screens are disabled, the widget returns control back when it finds some accounts at the FI. Then a back-end process starts harvesting the newly added accounts for more details. It is recommended that you keep polling the harvest status using *getAccountUpdateSummary / AccountUpdateSummaryRq* API until the harvesting is complete, and then invoke the data pull APIs. The *getAccountUpdateSummary / AccountUpdateSummaryRq* API uses this request ID to pull information about ongoing harvest run. You can use Fiserv provided user ID as input parameter for the *getAccountUpdateSummary / AccountUpdateSummaryRq* API.

Web service name	Update status check
Resource URL	<FiservWSUrl>/AccountDataInq/getAccountUpdateSummary
Description	This API is used to get the account refresh status after the accounts are added using add accounts widget
Swagger Link	getAccountUpdateSummary

Frequently Asked Questions

The following are some frequently asked questions on how the Add Accounts widget works.

1. What information is sent back on **return_url**?

Add Accounts widget invokes **return_url** after its processing is complete and sends the newly added login account ID at the FI (**FILoginAcctId**) as well as account IDs for all the accounts added in this widget session. These accounts are listed in comma-separated values with param **AcctId**.

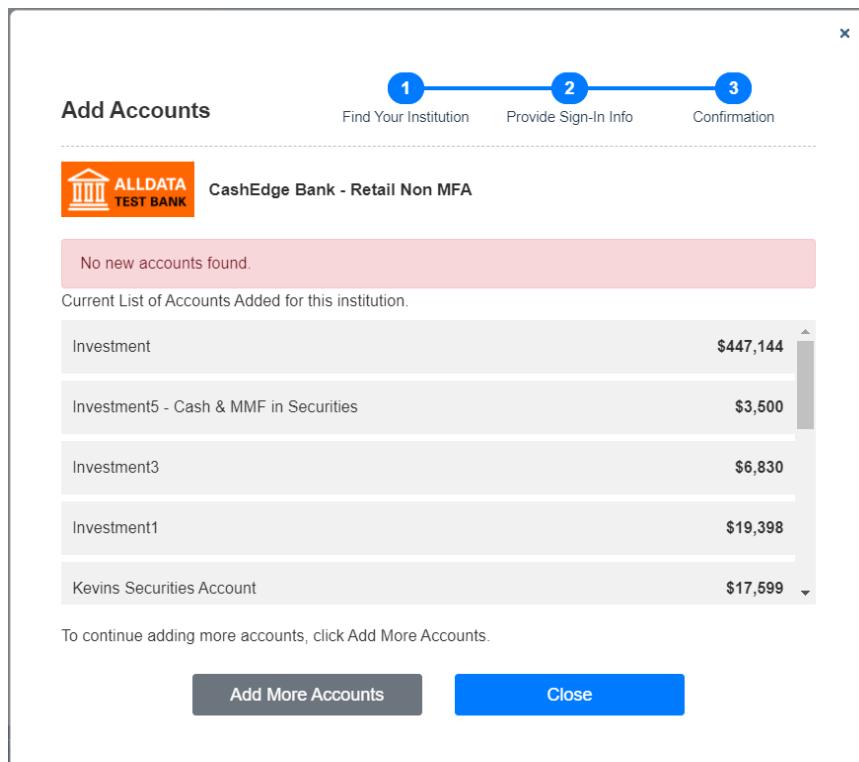
2. What happens if the user selects an FI that is already registered and gives the same credentials?

The Add Accounts widget recognizes that this set of credentials for the chosen FI is already stored and initiates the Add More Accounts process. A harvesting attempt is made to find more accounts at the FI that can be added for aggregation. Any newfound accounts will be added using a similarly configured process as the original request, such as taking into account specific screens enabled using home-level configuration parameters. If the **return_url** parameter exists, it will be invoked with the corresponding **FILoginAcctId** and a comma-separated list of all accounts.

3. What happens if the user chooses an FI that is already registered, provides same user credentials, and there are no new accounts found?

- If the **return_url** parameter exists, it is invoked with existing **FILoginAcctId** and existing **AcctIds**.
- If **return_url** is not set, the Add Accounts widget shows a message that no new accounts were found.

Message when no new accounts found:



4. What error conditions are possible?

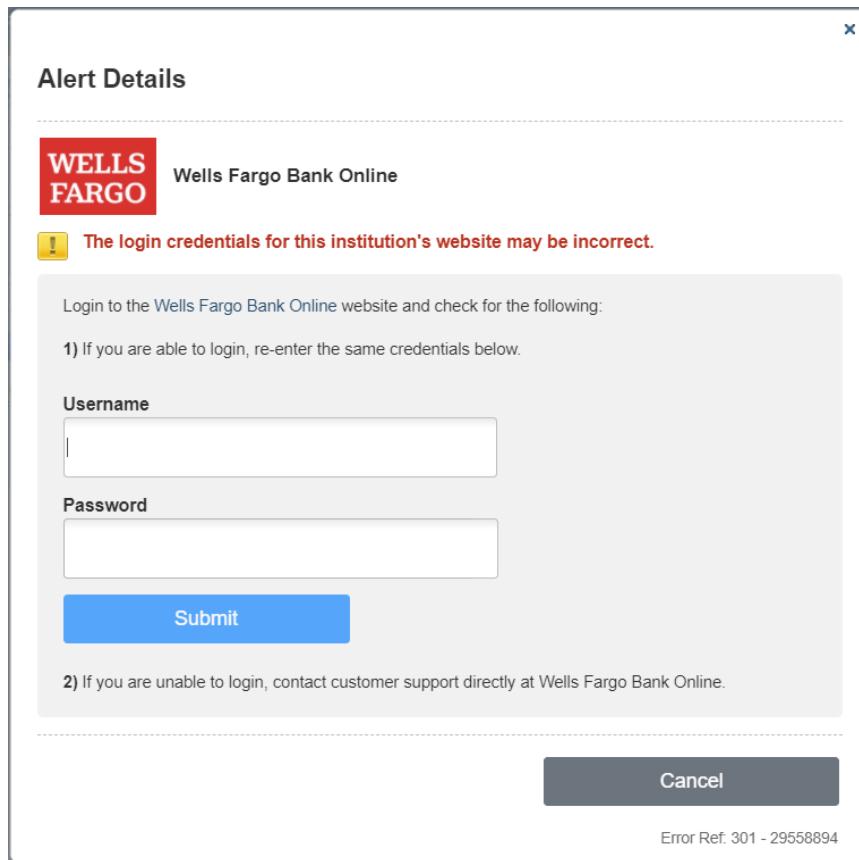
The Add Accounts widget handles any harvesting errors interactively unless the user closes the widget prematurely. In such a case, there may be harvesting errors that will be made available through the data pull APIs. If the user chooses same FI and provides same user ID, the Add Accounts widget resumes previous attempt and presents the existing error to the user.

Alert Resolution Widget

Alert Resolution Widget Overview

The Alert Resolution widget allows partners to take advantage of a library of screens that walk users through errors they may encounter during the account harvesting process. If an account is in error, the Alert Resolution widget will identify the correct alert resolution screens to display for the corresponding account. The widget screens will inform the user of the issue preventing aggregation from functioning correctly and guide the user through any steps required to resolve the error. Refer to [Appendix A – Harvesting Alert Error Resolution Screens](#) for error content and workflows.

Alert Resolution widget:



Alert Resolution Widget Integration Options

Partners have multiple options for exposing the Alert Resolution widget screens to their users:

Integrated to the Account Management widget – In addition to other maintenance functionality that is included in the Account Management widget (like deleting FIs/accounts, adding more accounts, and so on), the Alert Resolution widget is integrated directly into the Account Management widget. From the Account Management widget, the user will see the accounts that are in error state and launch the Alert Resolution widget to address the error.

Alert Resolution widget through Account Management widget:

The screenshot shows a list of accounts under the 'ACCOUNTS' tab. Each account entry includes the provider name, last updated time, and a summary of the alert status. A 'Resolve' button is present in each row.

Provider	Last Updated	Summary	Action
ING Retirement	24 Days Ago	INVESTMENT ALERT: Roth IRA Rollover	Resolve
Vanguard	1 Week Ago	INVESTMENT ALERT: Investment5416	View Details
MORGAN STANLEY SMITH BARNEY	14 Hours Ago	INVESTMENT ALERT: Managed Account5416	
AMERICAN EXPRESS	Up To Date	INVESTMENT ALERT: Platinum Card1244	

Integrated to the Alerts Listing widget – The Alert Listing widget provides an inventory of accounts that are associated with outstanding alerts. From the Alert Listing widget, users can access the corresponding Alert Resolution widget to address the errors.

Alert Resolution widget through Alert Listing widget:

The screenshot shows a list of alerts under the 'ALERTS' tab. Each alert entry includes the provider, alert type, description, date, and a 'Resolve' button.

Provider	Type	Description	Date	Action
ING Retirement	Login Failure Alert		11/12/2010	Resolve
American Funds Investments	Website Attention Required		11/25/2010	Resolve

Integrate Alert Resolution widget – The Alert Resolution widget can be embedded and launched directly from the appropriate locations on partner application screens at the account level. Partners wishing to use their own account listing screens may choose to identify outstanding alerts in their own screens.

Alert Resolution widget through partner UI:

The screenshot shows a section titled 'Assets' with a sub-section for 'PNC Assets'. Below this, there is a callout box for a 'Joint Checking' account, which is marked as having an alert (indicated by a red exclamation mark). An 'Edit' button is located in the top right corner of the callout box.

When a user attempts to resolve the alert, the partner application will call the Alert Resolution widget URL and provide the necessary identifiers for the respective account (**FILoginAcctId** and/or **AcctId**). The Alert Resolution widget will identify the associated error and display the necessary screens to resolve it.

Alert Resolution Screens CSS Definition

Primary CSS Classes

The following table provides an inventory of the primary CSS classes that control the look and formatting of the Alert Resolution widget screens:

#	CSS class	Description	CSS parameter and default value
1	Background color	This parameter controls the background color that obscures the main screen when the Add Accounts screen overlays are activated.	<pre>.wrapper { background: #ffff; margin: 15px 0; }</pre>
2	Widget screen header	This parameter controls the font style of the main header of the Add Accounts screen overlays	<pre>h1.main { font-size: 20px; font-weight: 600; line-height: 28px; align-items: center; display: flex; color: #333; margin-bottom: 5px; }</pre>
3	Grey color button	This parameter controls the color of the button Add Accounts screen	<pre>.btn-secondary { color: #fff; background-color: #6c757d; border-color: #6c757d; }</pre>
4	Blue color button	This parameter controls the color of the button in Add Accounts screen	<pre>.btn-primary { color: #fff; background-color: #007bff; border-color: #007bff; }</pre>
5	Error header	This parameter controls the font style of the Error Header in Add Accounts Screen	<pre>.alert_redtext { background:url(..../images/icons/alerts.png) no-repeat 5px 0px; font-size:1.15em; color:#b83320; padding:5px 0 10px 40px; margin:8px 0px; font-weight:bold }</pre>

Images

All images and icons in the Alert Resolution widget are configurable. The URLs where each of the images are retrieved from are configured in the Widget CSS file.

#	Default image	Description	CSS parameter and default values	Default size
1		Large alert icon	.alert_redtext{background:url(..../images/icons/alerts.png) no-repeat 5px 0px; font-size:1.15em; color:#b83320; padding:0px 0px 10px 40px; margin:8px 0px; font-weight:normal; }	23x23
2		Eye icon	.eyeIcon { background: #fff; border: 1px solid #bebebe; cursor: pointer; border-left: 0px; }	
3		Lock icon	.urlLink { display: flex; line-height: 24px; margin-bottom: 15px; }	
4		Close window icon	.cboxClose{float:right; background:url(..../images/celightbox/button_close.png) top right no-repeat; width:8px; height:8px;display:block;margin:-10px -10px;_margin:5px;cursor: pointer;}	10x10

Text Configuration via Resource Bundles

AllData widgets use resource bundles to persist most of the text that is displayed to users in the widget screens. This allows partners to customize the language and content to meet their business requirements. The following section describes the configurable text in the screens used by the Error Resolution widget.

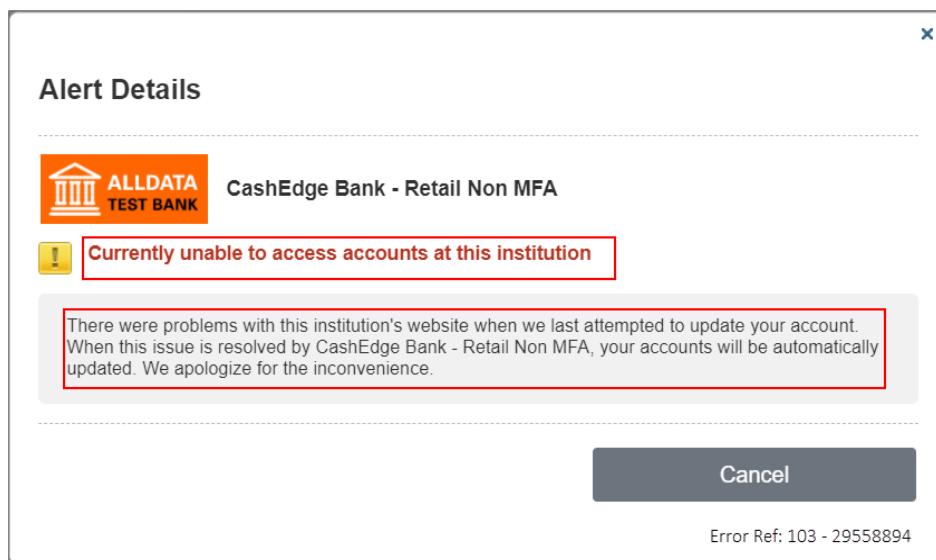
Error Resolution widget screens have two basic formats: Either no user action is required, or the user can choose an action.

1. No user action required

Partners can customize the following elements:

- Error message text based on error code
- Body content

[Error Resolution widget customization screen:](#)

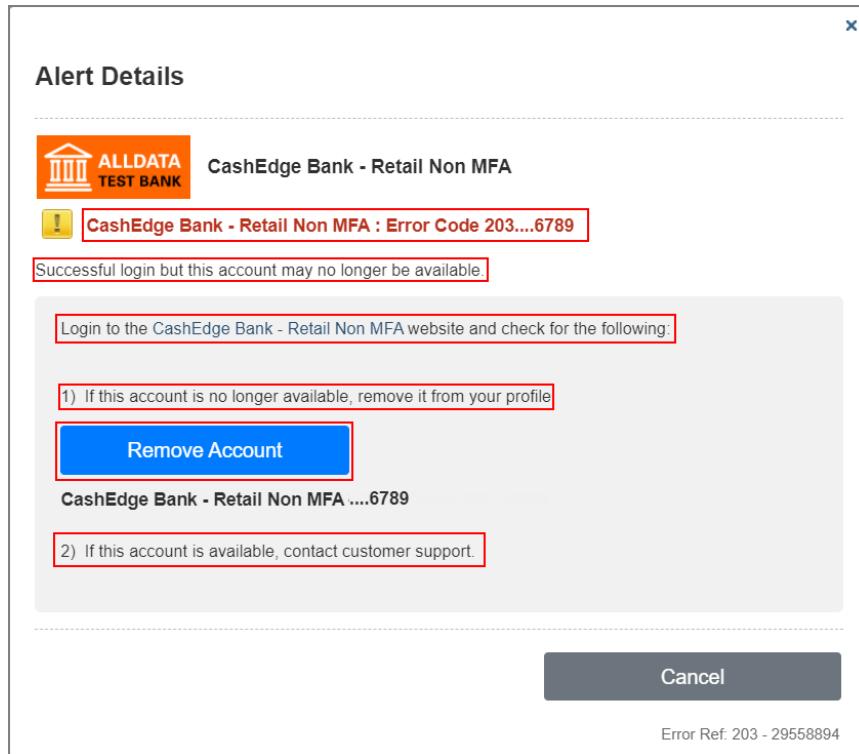


2. The user can choose an action

Partners can customize the following elements:

- Error message text based on error code
- Subheading text
- Text for options
- Text guiding the user to customer support and customer support link
- Enable/disable **Remove Account** button
- Label and style of **Cancel** button

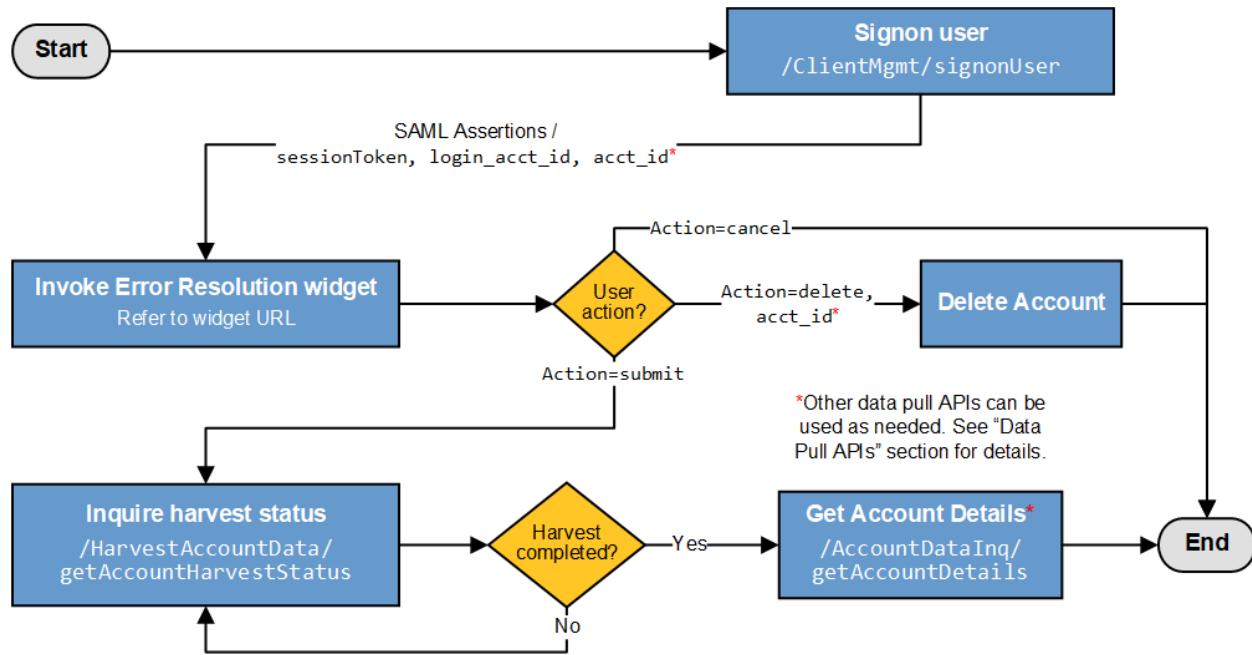
Error Resolution widget customization screen:



Widget Invocation

The following process diagram explains the web services APIs the partner calls before and after the invocation of the Error Resolution widget.

Error Resolution widget invocation process diagram:



Widget URL

The Alert Resolution widget can be accessed using following URL for the partner integration environment. The production URL will be provided later by the partner integration team.

Alert Resolution widget URL for partner integration environment is:

<Domain URL>PFM_UI/widgets/base/addaccounts/alerts/resolveAlertWidget iface

...with the mandatory POST parameter “sessionToken=<sessionToken>” and any optional parameters for the scenario

- Parameters required for invocation:** For Error Resolution widget apart from **sessionToken**, the other required parameters are **login_acct_id** and/or **acct_id**. When both these parameters are sent, the widget first looks at account level errors and if there are none, it uses the **login_acct_id** to check for errors present at that level. Invoking this widget also requires the **return_url** parameter. It is recommended that you send the **keepalive_url** and **error_url**.
- Parameters on return:** The Error Resolution widget will invoke **return_url** with action parameter that will indicate whether the user merely cancelled out of the widget or did take some action to mitigate the error. The possible values are “Cancel,” “Deleted,” and “Submit.” If the error resolution results in adding accounts to the **login_acct_id**, the newly added **acct_ids** are returned as list of comma-separated values along with the **login_acct_id**.

- **Error conditions:** In case there are processing errors, the Error Resolution widget invokes **error_url** sent on the request. If **error_url** is absent, the Error Resolution widget displays a message for the user. The possible error conditions are as follows.
 - **Missing Required Parameters:** The invocation request does not have the required parameters present. Error code 500
 - **No Errors Found:** There are no harvesting errors present for the accounts provided at this time. Error code 510
 - **System Error:** There was a processing error or invalid parameters were sent. Error code 520

Data Pull APIs

There are multiple outcomes of an Error Resolution widget invocation:

1. The user chose to cancel out of widget or there was no user action possible for the error condition. In this case, the **action** parameter will have value “Cancel” and no further action is required from the partner. If the error persists beyond stated resolution time, you may have to contact Fiserv customer service.
2. The user chose to act on the error by deleting the account. In this case, the **action** parameter will have value “Deleted.” The partner is expected to use data pull APIs to sync up the accounts for that user.
3. The user chose to provide additional information to resolve the error. In this case the **action** parameter will have value “Submit.” The partner is expected to poll for completion of harvesting by checking the harvest status using *getAccountHarvestStatus* / AccountHarvestStsInqRq API and then using data pull APIs to find out if the error resolution was successful.

Frequently Asked Questions

The following are some of the frequently asked questions about how the Add Accounts widget works.

1. What information is sent back on **return_url**?

The Error Resolution widget invokes **return_url** after its processing is complete with the **action** parameter. If the error resolution results in adding more accounts, the newly added account IDs are sent as a list of comma-separated values with **AcctId** parameter along with the **FILoginAcctId**.

2. When is harvesting triggered in the Error Resolution flow?

The following error codes trigger a harvesting update when resolved: 300, 301, 302, 303, 304, 307, and 201 (if the user chooses to match up the accounts retrieved from FI). This harvested data is made available through data pull APIs. Please refer to the AllData XML/Web Services Specifications Guide provided for more details.

On the similar lines to that of Add Accounts flow, it is recommended that you keep polling the harvest status using *getAccountHarvestStatus / AccountHarvestStsInqRq* API until the harvesting is complete before invoking the data pull APIs. The **FILoginAcctId** of the newly added login account is sent back as a parameter to the **return_url**. The *getAccountHarvestStatus / AccountHarvestStsInqRq* API uses this **FILoginAcctId** to pull information about the ongoing harvest run.

3. When does the Error Resolution widget invoke the Add More Accounts flow?

If the user had stopped the Add Accounts flow with FI login-level harvesting errors, there will be no child accounts present for that parent FI login account. If the user tries to resolve such a harvesting error, the harvesting update gets triggered as if the user is trying to add more accounts from that FI. The newly added accounts information will be sent back on the **return_url** as discussed in question 2.

4. How do we know if the error was resolved successfully?

When the user submits the information such as new credentials, to resolve the error, the Error Resolution widget notes that and triggers backend harvesting. The success of that attempt cannot be known until harvesting completes. We recommend that you keep polling the status for harvest completion and check the information using data pull APIs.

5. Could there be multiple errors with the same account?

It is possible that there are multiple errors or even errors at multiple levels: FI level, FI login account level, and account level. Resolving errors at high levels in the hierarchy (such as by our scripting team) may uncover other errors. After an error resolution action is taken, you should use data pull APIs to check for further errors.

Account Management Widget

Ordering FIs/Accounts

The Account Management widget provides a list screen of the FIs (parent CFIs) and accounts (child CFIs) that are associated with the user. The Account Management widget allows the user to add more, edit, delete, and resolve alerts for FIs/accounts. Upon completion of a session, Fiserv recommends that the partner retrieve all the active accounts for the user since the user can modify multiple accounts belonging to multiple parent FIs in a given session.

The Account Management widget groups accounts by associated FI (parent CFI). The FIs will generally be listed alphabetically. If an FI has multiple accounts (child CFIs), the accounts will be listed alphabetically below the FI. There are exceptions to the standard sorting order:

- Any institutions/accounts with harvesting errors appear at the top of the widget.
- If there are host accounts at the partner FI, it will be promoted to the top of the Account Management widget, below harvesting errors and above external accounts.
- If there are offline accounts, those FIs/accounts will be listed last.

Account Management widget:

The screenshot shows a list of accounts categorized into four main sections: 1. FIs with Harvesting Errors, 2. Host FI, 3. External FIs, and 4. Offline Accounts. The 'FIs with Harvesting Errors' section contains two items: 'ING Retirement' (24 Days Ago) and 'Vanguard' (1 Week Ago). The 'Host FI' section contains 'MORGAN STANLEY SMITH BARNEY' (14 Hours Ago). The 'External FIs' section contains 'AMERICAN EXPRESS' (Up To Date), 'CAPITAL ONE' (26 Mins Ago), and 'CHASE BANK' (Up To Date). The 'Offline Accounts' section contains 'Vacation Home' (\$600,000).

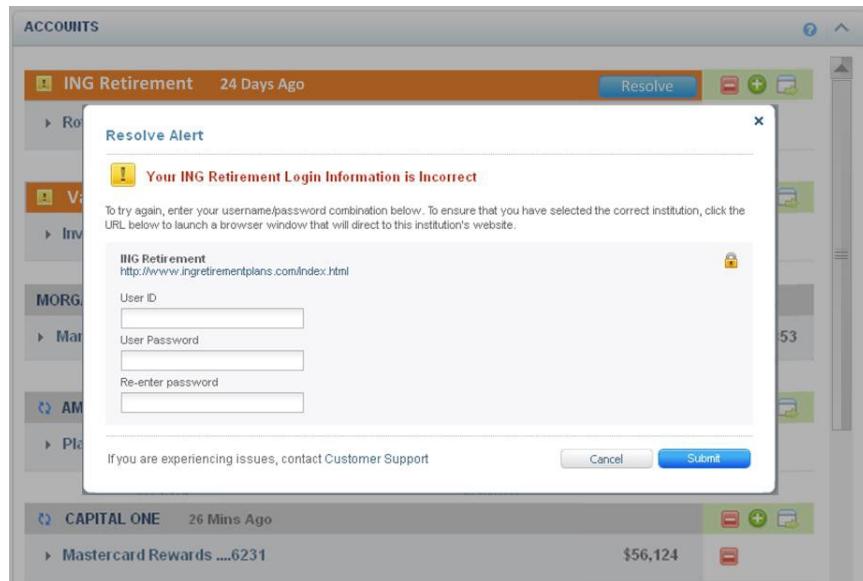
Category	Account	Last Update	Balance	Action Buttons
1. FIs with Harvesting Errors	ING Retirement	24 Days Ago		Resolve Print Add Details
	Roth IRA Rollover		\$275,231	Print
2. Host FI	Vanguard	1 Week Ago		View Details Print Add Details
	Investment5416		\$1,512,354	Print
3. External FIs	MORGAN STANLEY SMITH BARNEY	14 Hours Ago		
	Managed Account5416		\$610,853	
4. Offline Accounts	AMERICAN EXPRESS	Up To Date		Print Add Details
	Platinum Card1244		\$12,354	Print
3. External FIs	CAPITAL ONE	26 Mins Ago		Print Add Details
	Mastercard Rewards6231		\$56,124	Print
4. Offline Accounts	CHASE BANK	Up To Date		Print Add Details
	Savings4351		\$73,002	Print
OFFLINE ACCOUNTS				
Vacation Home \$600,000 Print				

Resolve Alerts

Users can access the appropriate harvesting alert resolution screens from the Account Management widget. When an account has a harvesting alert, the FI is ordered ahead of other FIs, the FI row displays a different color to differentiate it. A **Resolve** button is displayed in the associated FI row of the Account Management widget if the harvesting error has occurred at parent CFI level and if the error has occurred at account level, the **Resolve** button is placed at the account level.

When the **Resolve** button is clicked, a corresponding alert resolution screen displays as an overlay.

Resolve Alerts Screen – Account Management widget:



For information on the content and flow of the alert resolution screens, see [Appendix A – Alert Resolution Screens](#).

For alerts that the user can resolve, the action button is labeled “Resolve.” For other alerts, which require Fiserv or FI intervention to resolve, the button label is “View Details.”

After the user follows the necessary instructions in the Resolve Alert panel and clicks **Submit**, if another harvest is required to validate the resolution, the Resolve Alert panel vanishes, and a progress bar appears in place of the **Resolve** button. The progress bar displays until the harvest is complete.

Resolve Alerts progress bar:



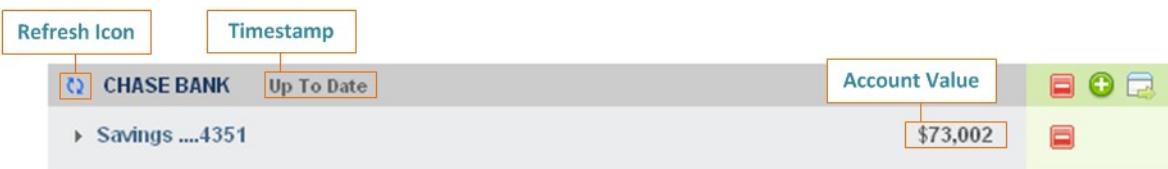
After the harvest completes, if the alert is resolved, a confirmation message displays temporarily to inform the user that the alert was successfully resolved. After a few seconds, the FI row reverts to its default color and the FI is re-ordered to its usual alphabetic place relative to the other FIs.

Resolve Alerts Confirmation message:



Manual Account Update

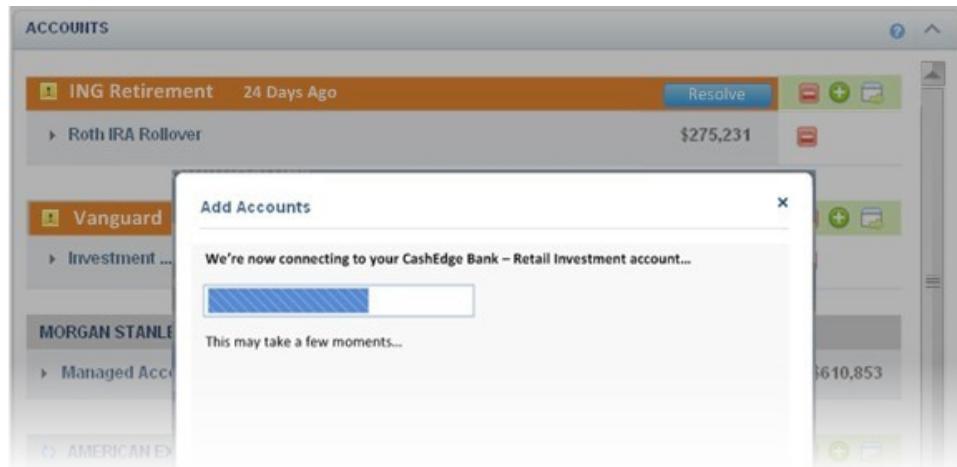
External accounts that do not have harvesting alerts associated with them allow the user to manual initiate a harvest to retrieve the latest account data. A refresh icon is displayed next to the FI name that allows the user to initiate the manual account update. When the update is underway, the refresh icon animates to indicate that it is processing. Once the update completes, the latest account balance is displayed for the associated accounts and the timestamp in the FI row is updated accordingly.



Add More Accounts

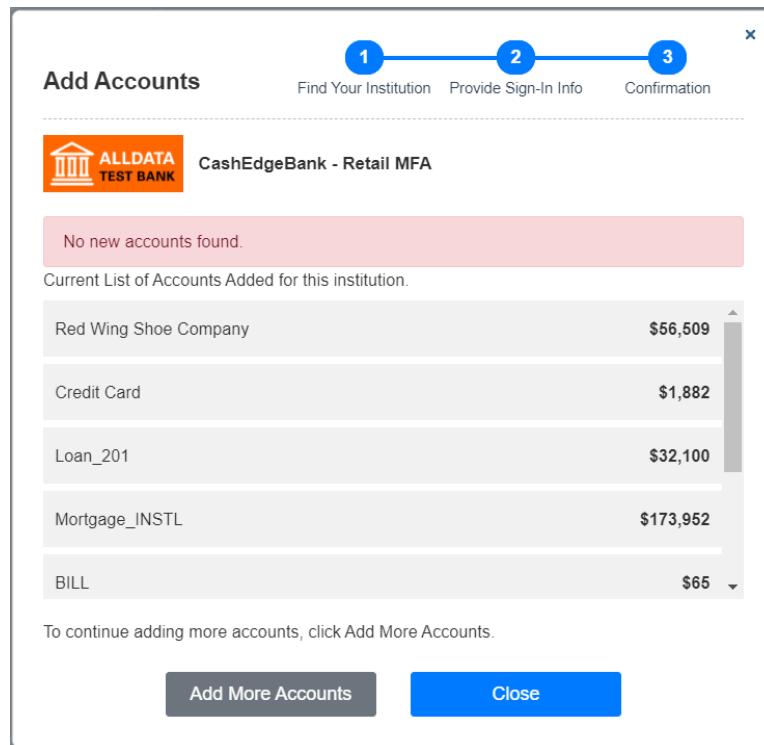
The Add More Accounts button initiates the process to identify additional accounts (child CFIs) with the previously submitted login credentials at a financial institution (parent CFI). The Add Accounts widget displays an overlay screen showing the progress of the harvest attempt.

Add More Accounts progress screen:



If additional accounts are identified, they are automatically added to the user's profile. If none are identified, a message indicates this in the user's list of current accounts.

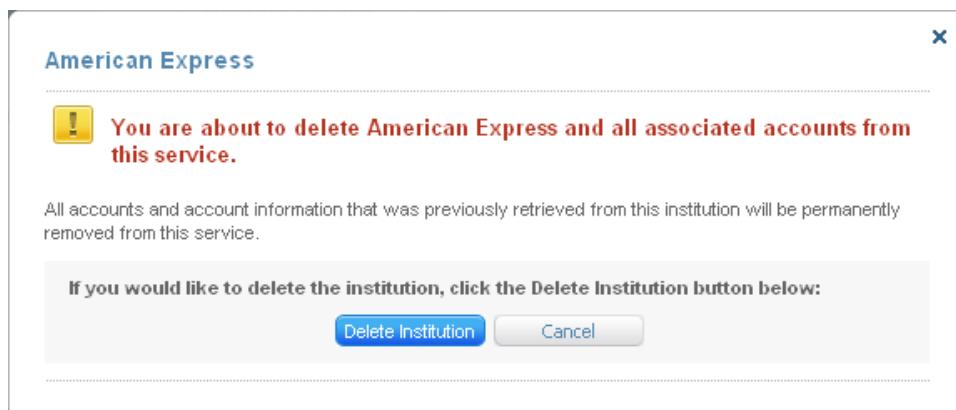
Add More Accounts message screen:



Delete FI/Accounts

For each parent CFI, a “delete institution” button  is available that allows the user to remove the institution and all associated accounts. After clicking the button, a confirmation button appears that allows the user to confirm or cancel the action.

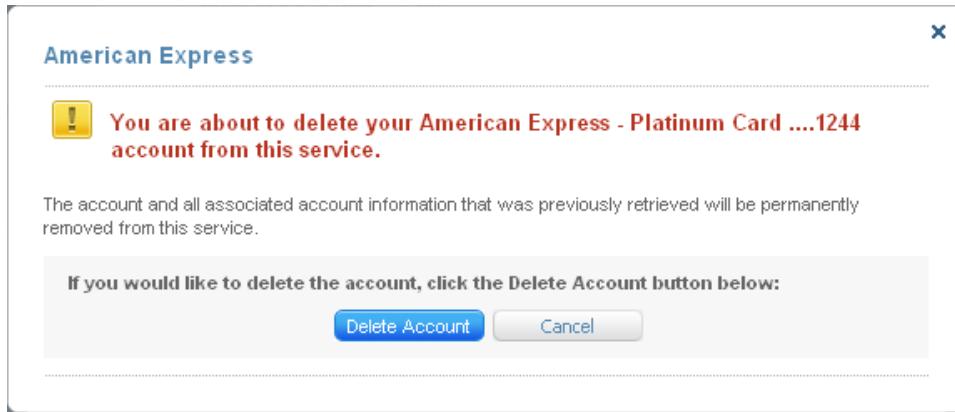
Delete institution confirmation message:



Delete Account

For each child CFI, a “delete account” button  is available that allows the user to remove the account from the parent CFI and no additional child CFIs. After clicking the button, a confirmation button appears that allows the user to confirm or cancel the action.

Delete account confirmation message:



Log in to FI Site

For each parent CFI, there is a “log in to financial institution” button  that launches another browser tab/window and navigate to the selected financial institutions login screen so that the user can submit their credentials to log in to the FI site.

Editable Account Attributes

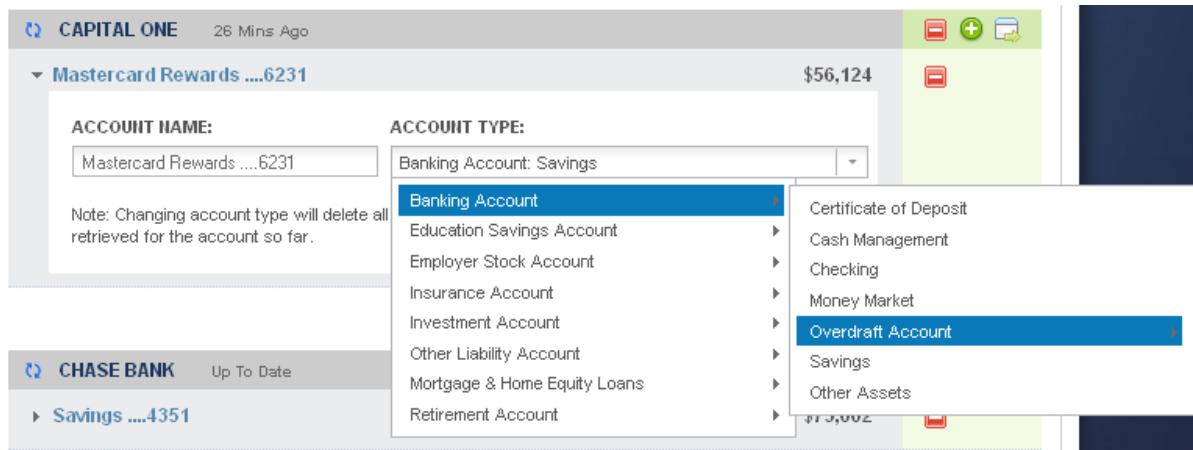
Managed account entries are not editable. The account name, account type, and amount are imported to the AllData database via batch/API.

Managed account entry in Accounts module:

MORGAN STANLEY SMITH BARNEY	14 Hours Ago
▼ Managed Account5416	\$610,853
ACCOUNT NAME:	ACCOUNT TYPE:
Managed Account5416	Investment

Users can edit the nicknames and account types of their held away accounts. A “refresh” button is also available. Account types use the Account Type Name lookup to identify partner-defined account type names for the accounts.

Held Away account entry in Accounts module:



Users can edit the account nickname, change asset type, modify the amount value, and delete offline accounts.

Offline Accounts:

The screenshot shows the 'OFFLINE INSTITUTIONS' section with a 'Vacation Home' account. The 'OFFLINE ACCOUNT NAME:' field contains 'Vacation Home'. The 'OFFLINE ACCOUNT TYPE:' dropdown menu is open, showing 'Real Estate' as the selected option. The 'AMOUNT VALUE:' field contains '\$150,000.00'. At the bottom, there are 'Hide Account', 'Cancel', and 'Save' buttons.

Configurable Dimensions

The Account Management widget includes configurable dimensions for partners to select the desired width and height for the widget. If the content does not fit within the allotted dimensions, scroll bars appear automatically.

Account Management widget with vertical scroll:

The screenshot displays the 'ACCOUNTS' section of the Fiserv Account Management Widget. It lists several accounts from different financial institutions, each with a summary, creation date, and a set of actions. The accounts shown are:

- ING Retirement (24 Days Ago) - Roth IRA Rollover: \$275,231
- Vanguard (1 Week Ago) - Investment5416: \$1,512,354
- MORGAN STANLEY SMITH BARNEY (14 Hours Ago) - Managed Account5416: \$610,853
- AMERICAN EXPRESS (Up To Date) - Platinum Card1244: \$12,354
- CAPITAL ONE (26 Mins Ago) - Mastercard Rewards6231: \$56,124
- CHASE BANK (Up To Date) - Savings4351: \$73,002
- OFFLINE ACCOUNTS - Vacation Home: \$600,000

A vertical scroll bar is visible on the right side of the widget interface.

Widget URL

Access the Account Management widget in the partner integration environment with the following URL.

<Domain URL>PFM_UI/widgets/base/accounts/accountsManagementWidget iface

...with the mandatory POST parameter “sessionToken=<sessionToken>” and any optional parameters required for the scenario

The production URL will be provided later by the partner integration team.

Your Progress Widget

Your Progress Widget Overview

The Your Progress widget acts as a prompt to encourage the user to add accounts to their profile. The widget tracks the number of accounts and account categories that are associated to the profile.

Your Progress widget – Incomplete:



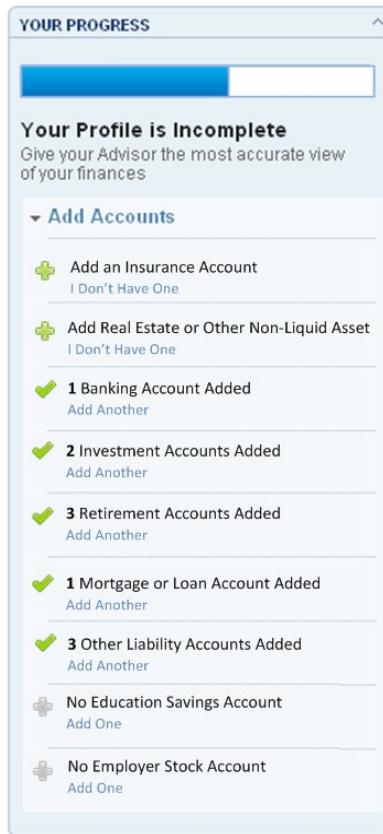
The progress bar represents the state of the user's accounts as compared to a standard definition of a complete account portfolio. The progress bar is split into ninths. As the user adds accounts (or indicates not owning that type of an account), the progress bar moves 1/9th closer to completion. When completed, the message displayed changes.

Your Progress widget – Complete:



By default, the Your Progress widget shows the progress bar for the user with the account categories collapsed. When expanded, the widget reveals the different account categories along with status of the user's accounts as compared to those account categories.

Your Progress widget – Expanded:



Account categories in the Your Progress widget have three possible states. The following table describes each state and shows the icon that indicates it.

Account category state	Icon	Description
Undetermined		Default state of the account categories. This indicates that the user has not added an account of this category and has not indicated that one is unavailable. Account categories in this state are sorted to the top of the module. Clicking the icon or the main text launches the Add Account screens. Clicking the "I Don't Have One" sub text moves the category into None state.
Added		One or more accounts have been added to the account category. Account categories in this state are sorted behind the Undetermined account categories. Clicking the "Add Another" sub text launches the Add Account screens.
None		User has indicated that they do not own accounts in this category. Progress for the user is increased as if an account has been added in this category. Account categories in this state are sorted to the bottom of the Your Progress widget. Clicking the Add One link launches the Add Account screens.

The standard profile of progress categories is configurable at the home level. A variable number of categories can be configured for a home. For each category, a variable number of extended account types or instruments can be assigned. When a user adds an account, the application identifies the extended account type or instrument of the new account to determine which category it belongs to. If an account has an extended account type and instrument type assigned, the instrument type takes precedence in determining the account category.

The following table describes the eight default categories and associated extended account types/instruments:

Account category	Account type	Account type code	Extended account type code
Banking	Certificate of Deposit	OAA	CDA
	Cash Management	DDA	CMA
	Checking	DDA	DDA
	Money Market	SDA	MMA
	Savings	SDA	SDA
Education savings	529 / Education Savings	INV	INV
Bill	Billing	BPA	BPA
	Landline Phone	BPA	LLP
	Streaming Media	BPA	SMA
	Mobile Phone	BPA	MBL
	Internet	BPA	INT
	Cable/Satellite TV	BPA	CBL
Insurance	Annuity	INS	ALI
	Term Life	INS	TLI
	Universal Life	INS	ULI
	Whole Life	INS	WLI
Investment	GIC/Term Investment (GIC)	OAA	GIC
	Brokerage	INV	INV
Other liabilities	Credit Card	CCA	CCA
	Loan	OLA	ILA
	Auto Loan	OLA	ILC
	Investment Loan	OLA	ILI
	Student Loan	OLA	ILS
	Line of Credit	OLA	LOC
	Other Liability	OLA	OLA
Mortgage and home equity loans	Mortgage	OLA	MLA
	Home Equity Loan	OLA	MLA
Retirement	401 (k)	INV	INV
	403 (b)	INV	INV
	457	INV	INV
	Deferred Comp Plan	INV	INV
	KEOGH	INV	INV
	Pension	INV	INV
	Profit Sharing Plan	INV	INV
	IRA	INV	INV
	IRA – Roth	INV	INV
	IRA – Rollover	INV	INV
	IRA – Sep	INV	INV
	IRA – Simple	INV	INV

After the appropriate category is identified, the category in the Your Progress widget is updated to reflect the new account has been associated to the user profile.

The progress bar calculates the percentage that each category represents by dividing 100 by the number of configured categories.

The user may select “I Don’t Have One” for any account category that does not have an account associated with it. This acts as a surrogate for that account category and moves the progress bar forward. The user can still add accounts to these account categories if desired.

Text Configuration via Resource Bundles

AllData widgets use resource bundles to persist most of the text that is displayed to users in the widget screens. This allows partners to customize the language and content to meet their business requirements. All the text elements that are used in the Your Progress widget are configurable. Partners wishing to change the text for any of the elements can send the replacement text to the project manager to include them in the partner home’s resource bundle.

CSS Definition

The CSS for Your Progress widget is the same as Add Accounts widget. The fonts and colors used in this widget can be modified using the same [CSS definitions](#) as in Add Accounts widget.

Widget URL

Access the Your Progress widget in the partner integration environment with the following URL.

<Domain URL>/PFM_UI/widgets/base/accounts/progressSnapshot iface

...with the mandatory POST parameter “sessionToken=<sessionToken>” and any optional parameters required for the scenario

The production URL will be provided later by the partner integration team.

Parameters required for invocation:

The required parameters are same as for Add Accounts widget (**sessionToken** and **return_url**) though it is recommended that you send the **keepalive_url** and **error_url**.

This widget is typically embedded within the application page, such as a dashboard, and does not come with ways to close it or log out of it.

Return Scenarios

Return URL scenarios

The following table provides details on different use case scenarios in which AllData returns control back to the partner application by calling the **return_url** that the partner shares. It includes whether the scenario has an account confirmation page and details of the parameters and parameter values sent along with **return_url**.

Widget/ implementation	Scenario	Acct conf pg?	Parameter name(s)	Parameter value(s)	Other param(s)
Add Account	When accounts are added	No	AcctId, FILoginAcctId	<account IDs>	
Add Account	After adding accounts, widget close action in confirmation page	Yes	Action	Close	
Add Account	No accounts found in FI to add	No	Action	NoNewAccountsFound	
Add Account	On Add More Accounts, all the accounts are already added and there are no new accounts in FI to add.	No	Action	NoNewAccountsAdded	
Add Account	On Add More Accounts, one or more of the user's existing accounts was not found at the FI. The user must resolve this error prior to adding more accounts.	No	Action	NoAccountsAdded	
Add Account	On passing invalid PartnerAppID (unregistered partner app ID) – primarily required when adding OAuth FIs	N/A	Action	Close	errorCode = 3005
Add Account – deep linking	When accounts are added	No	AcctId, FILoginAcctId	<account IDs>	
Add Account – deep linking	After adding accounts, closing the widget from the confirmation page	Yes	Action	Close	
Add Account – deep linking	No accounts found in FI to add	No	Action	NoNewAccountsFound	
Add Account – deep linking	On Add More Accounts, all the accounts are already added and there are no new accounts in FI to add.	No	Action	NoNewAccountsAdded	
Add Account – deep linking	On Add More Accounts, one or more of the user's existing accounts was not found at the FI. The user must resolve this error prior to adding more accounts.	No	Action	NoAccountsAdded	
Add Account – deep linking	On passing invalid FI ID in widget invocation	N/A	Action	Close	errorCode = 3001
Add Account – deep linking	On passing invalid FI account ID in widget invocation	N/A	Action	Close	errorCode = 3002
Add Account – deep linking	On passing an empty account ID and an invalid or empty FI ID in widget invocation	N/A	Action	Close	errorCode = 3001, 3002

Widget/ implementation	Scenario	Acct conf pg?	Parameter name(s)	Parameter value(s)	Other param(s)
Add Account – deep linking	When the Add process is successful and no accounts are returned – on clicking Start Over in the widget, return_url is invoked with this Action and errorCode	Yes	Action	Cancel	errorCode = 3003
Add Account – deep linking	On passing invalid PartnerAppID (unregistered partner app ID) – primarily required when adding OAuth FIs	N/A	Action	Close	errorCode = 3005
Alert Resolution	All user intervention scenarios in Resolve Alerts after taking action to resolve error and submit, such as after updating login credentials, editing MFA answers, and changing account types (Child Accounts available)	N/A	Action	Submit	
Alert Resolution	All user intervention scenarios in Resolve Alerts after taking action to resolve error and submit, such as after updating login credentials and editing MFA answers (No Child Accounts available – Add process will be initiated) After adding accounts, widget close action in confirmation page	Yes	Action	Close	
Alert Resolution	All user intervention scenarios in Resolve Alerts after taking action to resolve error and submit, such as after updating login credentials and editing MFA answers (No Child Accounts available – Add process will be initiated) When accounts are added	No	AcctId, FILoginAcctId	<account IDs>	
Alert Resolution	User clicks Select New Institution in error 306 alert.	N/A	Action	SelectNewInstitution	
Alert Resolution	On passing invalid PartnerAppID (unregistered partner app ID) – primarily required when adding OAuth FIs	N/A	Action	Close	errorCode = 3005
All widgets	On clicking Cancel or Close in any widget	N/A	Action	Cancel	

Error URL scenarios

This table provides details on error scenarios during widget invocation in which AllData redirects users to the **error_url** the partner shares, and error code details specific to each scenario in parameter values sent with the **error_url**. None of the following scenarios require additional parameters.

Widget/ implementation	Scenarios	Parameter name	Parameter value(s)	Type
All widgets	Session timeout	errorCode	3000	Error URL
All widgets / invocation	When partner passes unregistered (not whitelisted with Fiserv) domain name in css_url	errorCode	3010	Error URL
All widgets / invocation	When partner passes unregistered (not whitelisted with Fiserv) domain name in return_url	errorCode	3011	Error URL
All widgets / invocation	When partner passes unregistered (not whitelisted with Fiserv) domain name in error_url	errorCode	3012	Error URL
All widgets / invocation	When partner passes unregistered (not whitelisted with Fiserv) domain name in keepalive_url	errorCode	3013	Error URL
All widgets / invocation	When partner passes unregistered (not whitelisted with Fiserv) domain name in logout_url	errorCode	3014	Error URL
All widgets / invocation	When partner passes unregistered (not whitelisted with Fiserv) domain name in offline_url	errorCode	3015	Error URL
All widgets / invocation	When partner does not pass mandatory parameter in SSO request	errorMsg	Missing Mandatory Params: Values	Error URL
Alert Resolution widget	When the expected login_acct_id or acct_id is not passed during widget invocation	errorCode	500	Error URL
Alert Resolution widget	When passing invalid login_acct_id or acct_id during widget invocation	errorCode	510	Error URL
Alert Resolution widget	System error – When an error internal to Fiserv occurs during widget invocation	errorCode	520	Error URL

Scenarios applicable to SAML implementation

Widget/ implementation	Scenario	Parameter name	Parameter value(s)	Type
All widgets / invocation	ssoSAML param user_id is missing	errorCode	SS2	Error URL
All widgets / invocation	ssoSAML param home_id is missing	errorCode	SS39	Error URL
All widgets / invocation	ssoSAML param partner_id is missing	errorCode	SS8	Error URL
All widgets / invocation	ssoSAML param widget_id is missing	errorCode	SS40	Error URL
All widgets / invocation	ssoSAML param invocation_mode is missing	errorCode	SS41	Error URL
All widgets / invocation	ssoSAML param return_url is missing	errorCode	SS42	Error URL

Implementation Approaches

Partners have alternate approaches to integrate AllData widgets into their applications:

- **Deep linking:** Start the Add Accounts flow directly from the FI credentials submission screen.
- **Native app integration:** Deploy the responsively designed widgets within mobile web and native app implementations.

The following sections describe both approaches in detail.

Deep Linking

This approach allows partners to directly launch the Add Account widget with the login credentials submission screen for a specific FI that the user chooses, bypassing the default step of searching for the institution. This approach gives partners the flexibility to manage the FI search on their side, with more control over the institutions they wish to support for their users. Partners can pull data from supported financial institutions using the *getFinancialInstInfo* API. Please refer to the AllData Web Services Specifications Guide provided for more details. Other than bypassing the initial FI search process, the Add Accounts flow for deep linking remains the same as the default flow.

The deep linking approach requires either one of the following parameters in both SAML 2 and session token SSO options for launching the Add Accounts widget.

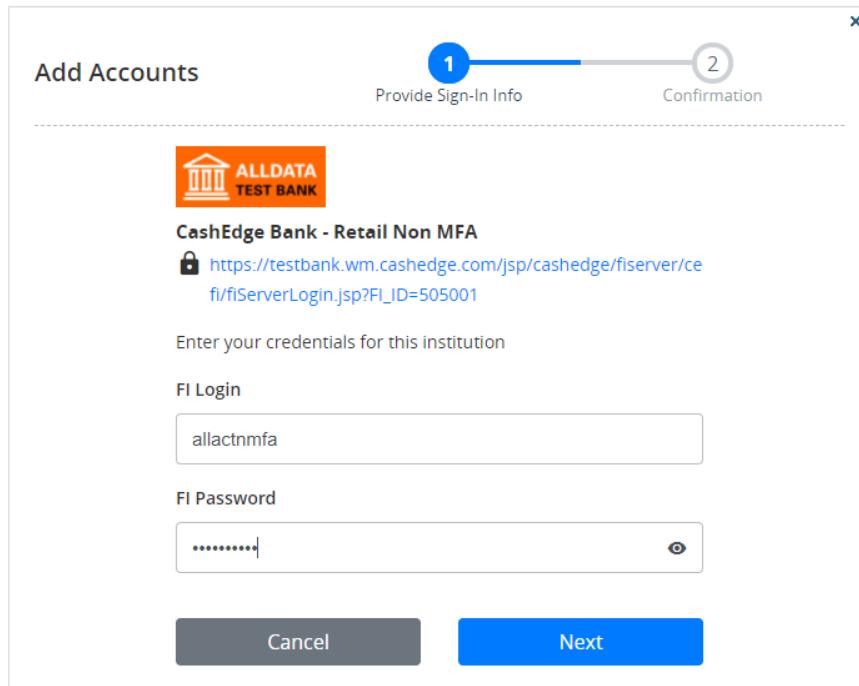
- **fi_id:** Required when initiating a fresh add attempt under an institution – This ID represents the FI the user has account with and is available when pulling the FI data using *getFinancialInstInfo* API.
- **login_acct_id:** Required for error resolution and add more accounts available from an existing institution under user profile – This ID represents the login account the user has with the financial institution. This information is available using *getAccountDetails* API.

In deep linking the following response codes are applicable to different scenarios, such as when the mandatory parameter is sent incorrectly, or missed when launching the widget.

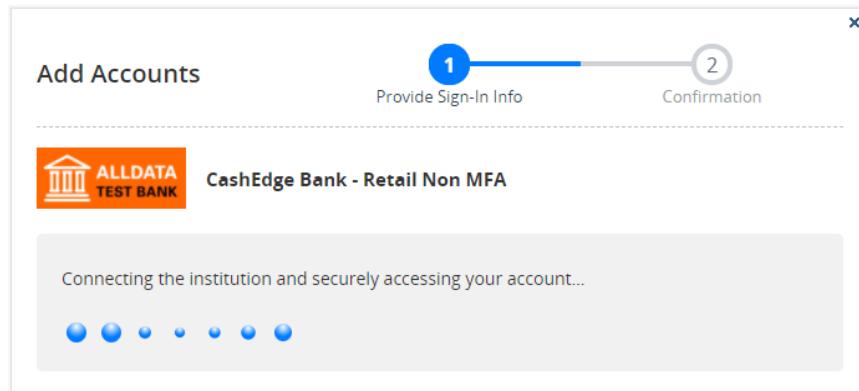
Response code	Reason
3001	Invalid financial institution ID “fi_id”
3002	Invalid login account ID “login_acct_id”
3003	When the add flow is successful without returning any account, the user can re-initiate the add flow with same FI or different FI. If this response code persists, report the issue to Fiserv.

Example screen shots of the deep linking workflow follow.

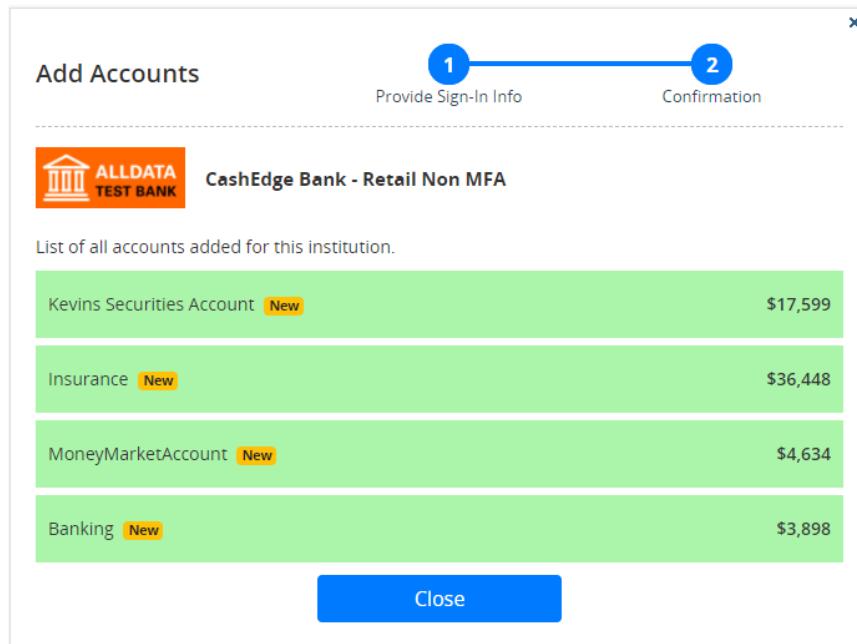
Deep linking image 1 – Enter account credentials:



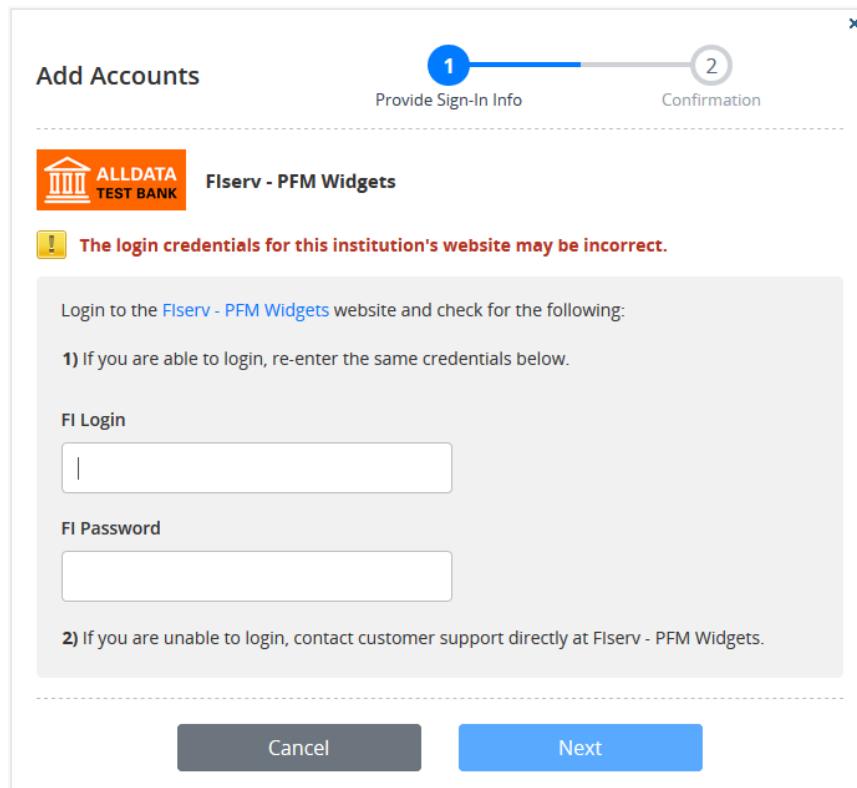
Deep linking image 2 – Progress indicator:



Deep linking image 3 – Confirmation screen:



Deep linking image 4 – Sample error scenario:

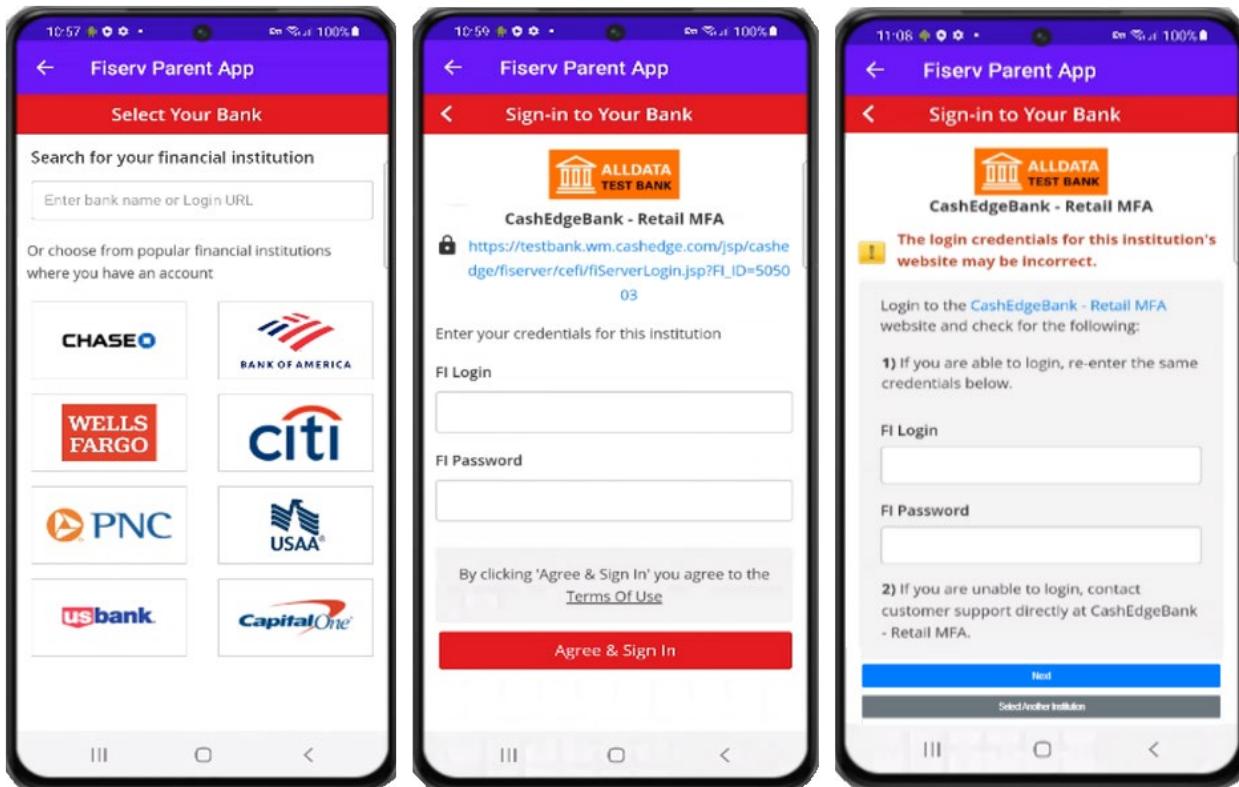


Native App Integration

AllData widgets have a responsive design for optimal display in web browsers on desktop, tablet, and mobile devices. The widgets can also be integrated into a partner's native app. With the responsive design the widgets adjust seamlessly to mobile device screens.

When integrating widgets in a native app, the parameter **host_app_type** is required to identify the type of native app implementation, passing a value of either "ios" or "android."

When identified as a native app integration, the **Cancel** and **Close** buttons in the widget will be removed and partners must manage the navigation back to their source application from the AllData widget when the user wants to close or cancel the widget.



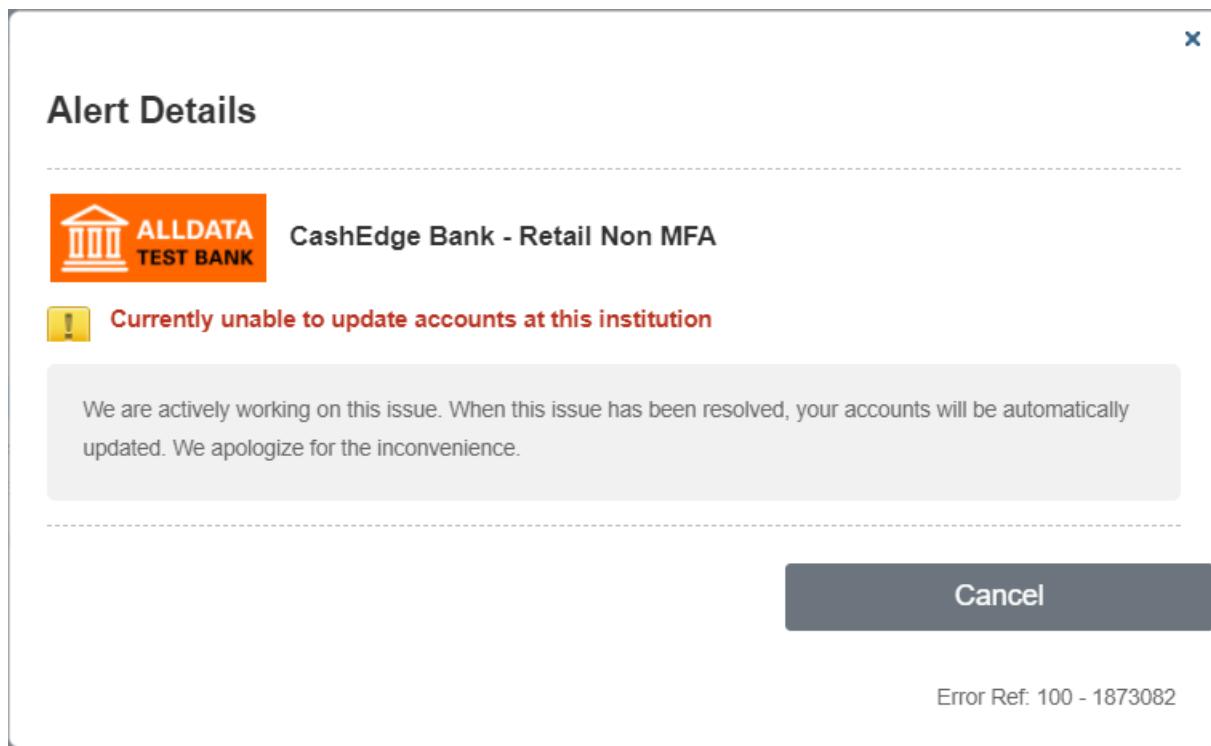
Appendix A

Harvesting Alert Error Resolution Screens

Error 100

Currently unable to update accounts at this institution

We are actively working on this issue. When this issue has been resolved, your accounts will be automatically updated. We apologize for the inconvenience.



Information alert: Fiserv will resolve the issue. After it is resolved, refreshing the account will clear the error.

Error 103

Currently unable to access accounts at this institution

There were problems with this institution's website when we last attempted to update your account. When this issue is resolved at *institution name*, your accounts will be automatically updated. We apologize for the inconvenience.

Alert Details

 **CashEdge Bank - Retail Non MFA**

 **Currently unable to access accounts at this institution**

There were problems with this institution's website when we last attempted to update your account. When this issue is resolved by CashEdge Bank - Retail Non MFA, your accounts will be automatically updated. We apologize for the inconvenience.

Cancel

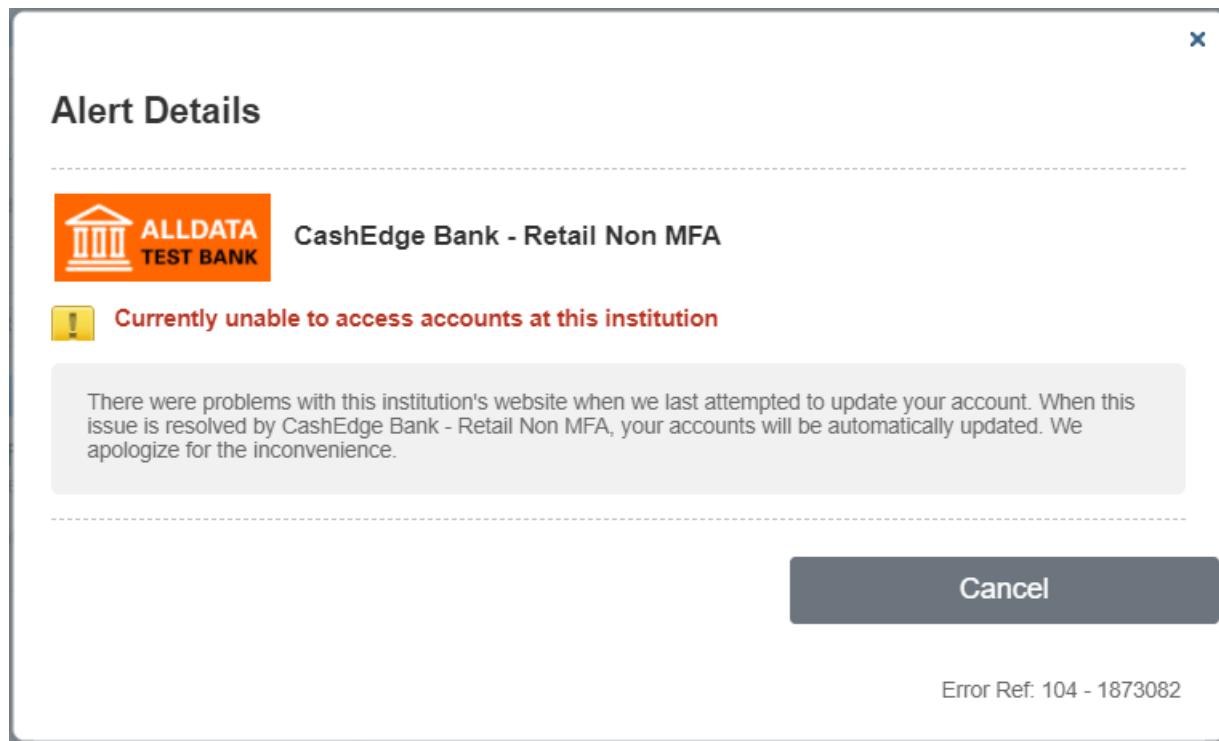
Error Ref: 103 - 29558894

Information alert: Issue with FI website

Error 104

Currently unable to access accounts at this institution

There were problems with this institution's website when we last attempted to update your account. When this issue is resolved by **institution name**, your accounts will be automatically updated. We apologize for the inconvenience.

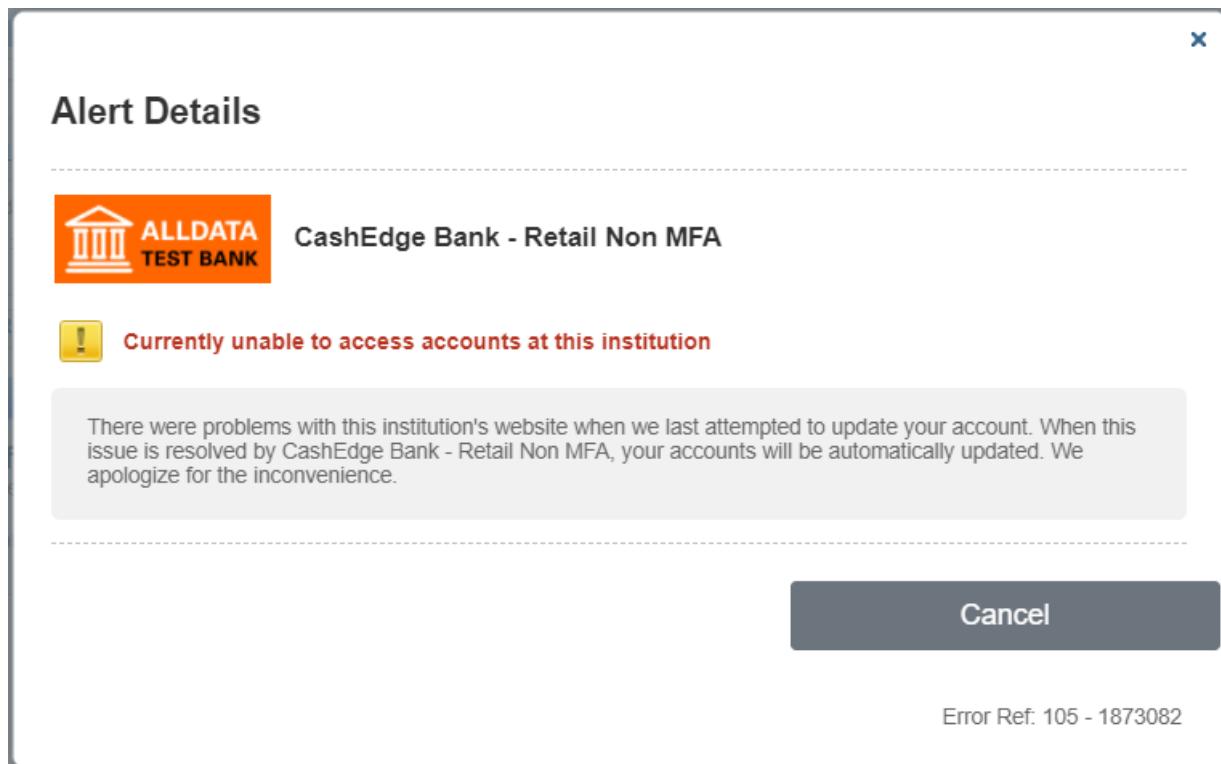


Information alert: Issue with FI website

Error 105

Currently unable to access accounts at this institution

There were problems with this institution's website when we last attempted to update your account. When this issue is resolved by *institution name*, your accounts will be automatically updated. We apologize for the inconvenience.



Information alert: Issue with FI website

Error 106

Currently unable to access accounts at this institution

There were problems with this institution's website when we last attempted to update your account. When this issue is resolved by *institution name*, your accounts will be automatically updated. We apologize for the inconvenience.

Alert Details

 **CashEdge Bank - Retail Non MFA**

! **Currently unable to access accounts at this institution**

There were problems with this institution's website when we last attempted to update your account. When this issue is resolved by CashEdge Bank - Retail Non MFA, your accounts will be automatically updated. We apologize for the inconvenience.

Cancel

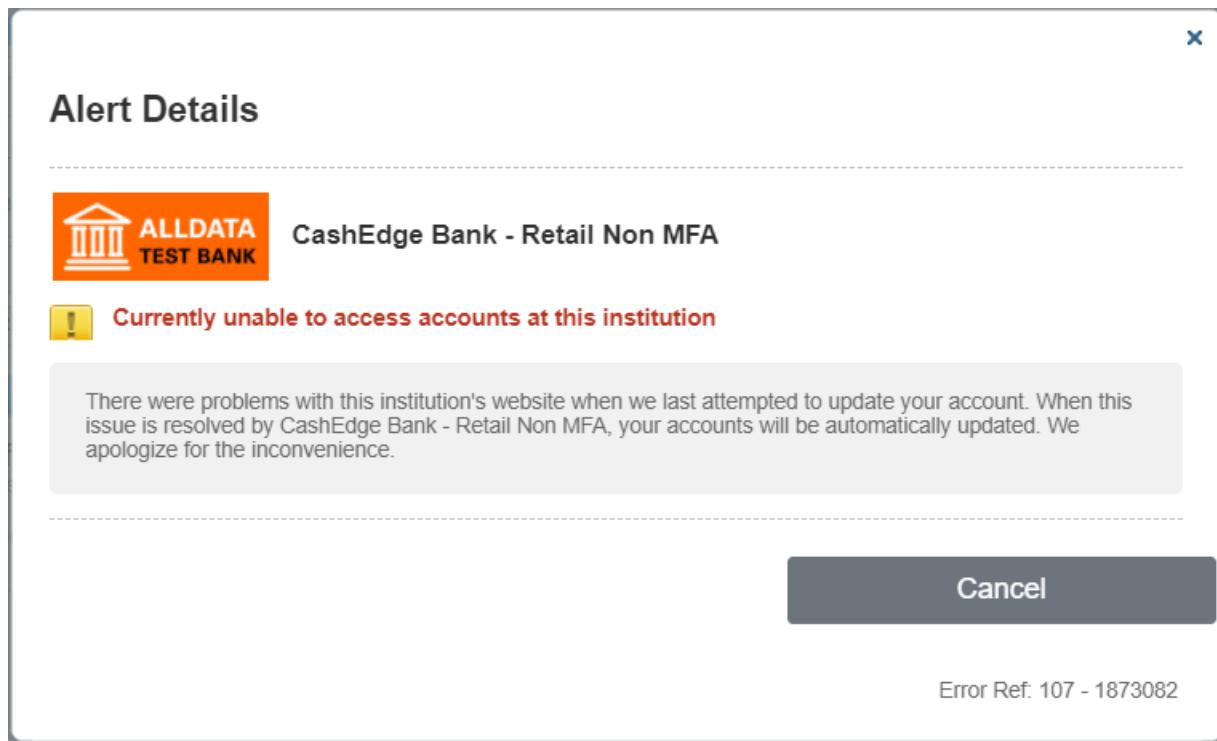
Error Ref: 106 - 1873082

Information alert: Issue with FI website

Error 107

Currently unable to access accounts at this institution

There were problems with this institution's website when we last attempted to update your account. When this issue is resolved by *institution name*, your accounts will be automatically updated. We apologize for the inconvenience.

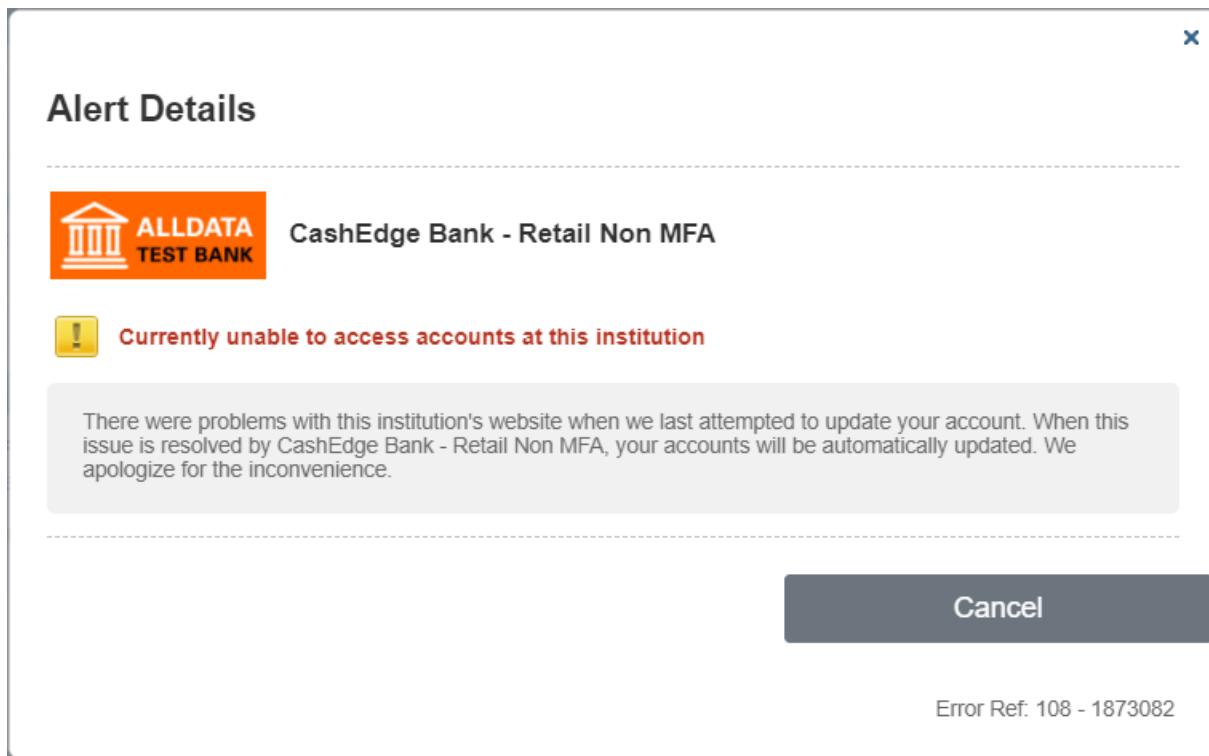


Information alert: Issue with FI website

Error 108

Currently unable to access accounts at this institution

There were problems with this institution's website when we last attempted to update your account. When this issue is resolved by *institution name*, your accounts will be automatically updated. We apologize for the inconvenience.

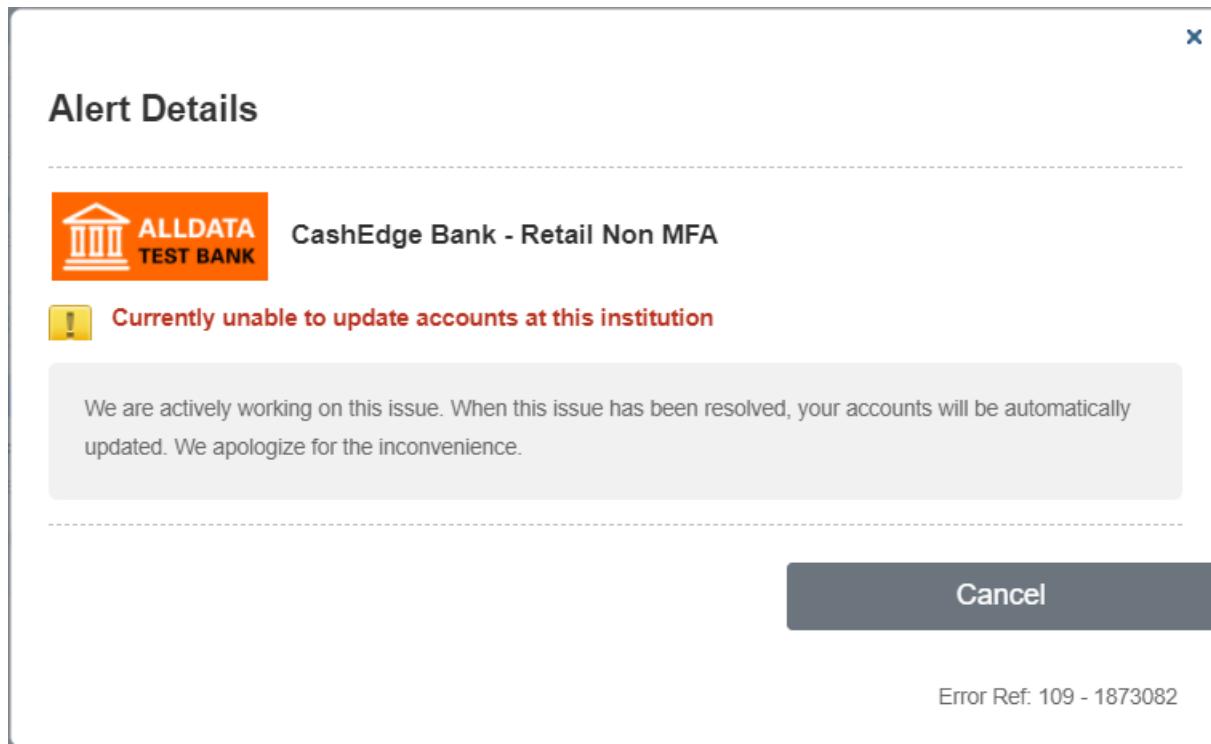


Information alert: Issue with FI website

Error 109

Currently unable to update accounts at this institution

We are actively working on this issue. When this issue has been resolved, your accounts will be automatically updated. We apologize for the inconvenience.

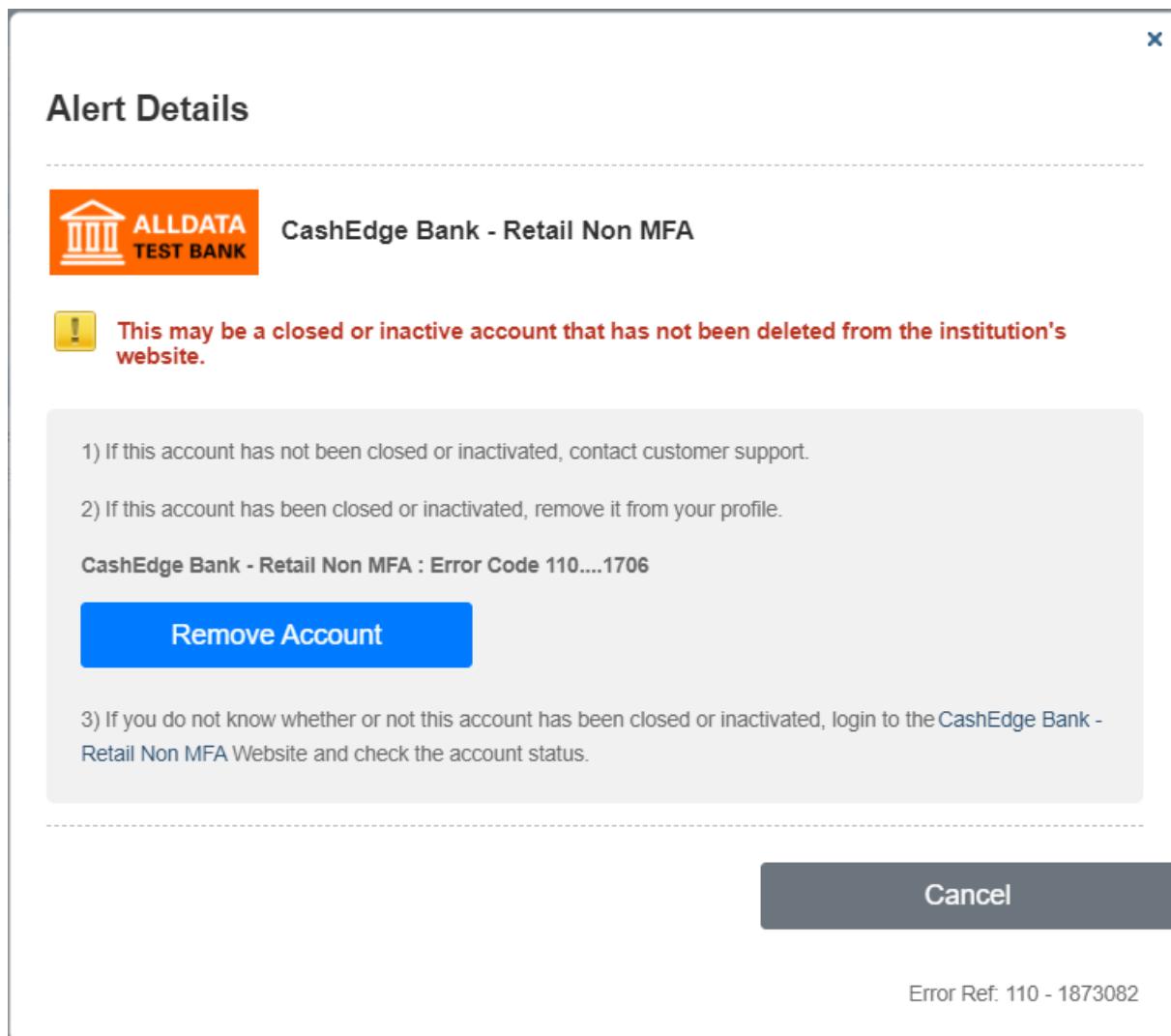


Information alert: This type of alert remains on the user interface until it is resolved by Fiserv and the account is refreshed.

Error 110

This may be a closed or inactive account that has not been deleted from the institution's website.

- 1) If this account has not been closed or inactivated, contact customer support.
- 2) If this account has been closed or inactivated, remove it from your profile.
- 3) If you do not know whether or not this account has been closed or inactivated, login to the *institution name* website and check the account status.

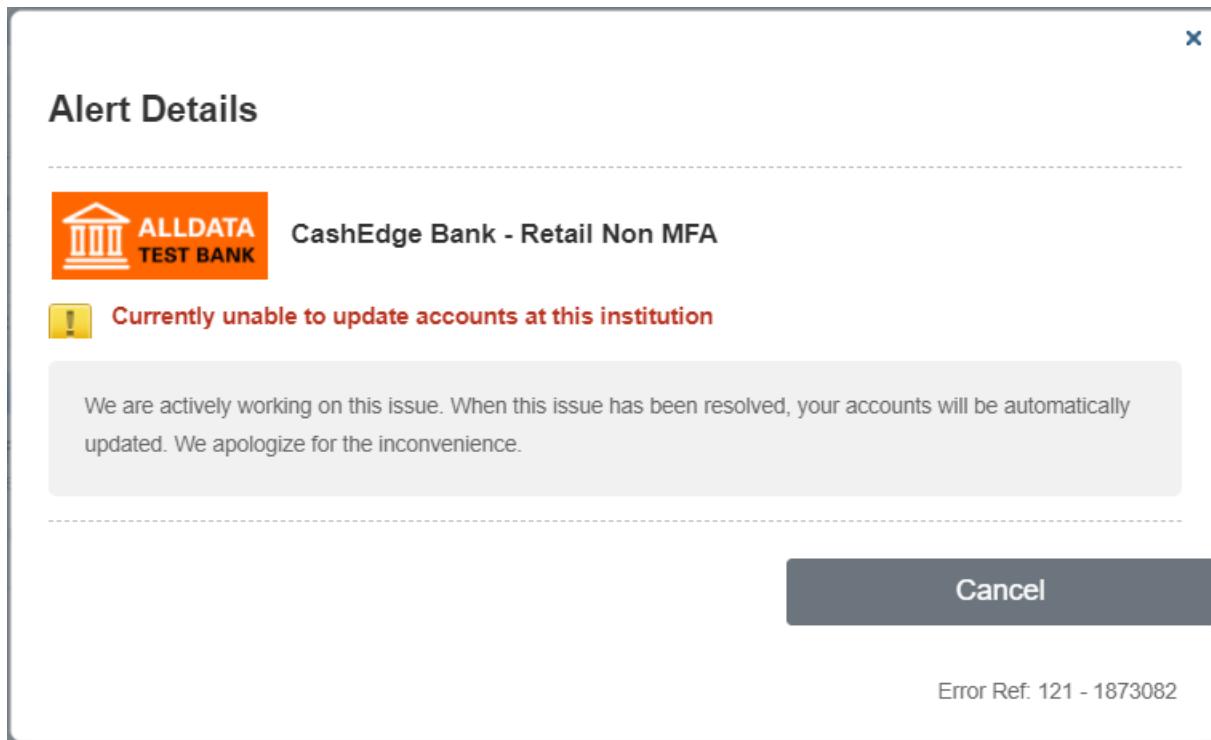


User intervention required: Clicking **Remove Account** resolves the alert by initiating the process to delete the account from the user's profile. If this is the only account associated with the credentials at the FI for the user, then the entire FI is deleted from the user's profile.

Error 121

Currently unable to update accounts at this institution

We are actively working on this issue. When this issue has been resolved, your accounts will be automatically updated. We apologize for the inconvenience.

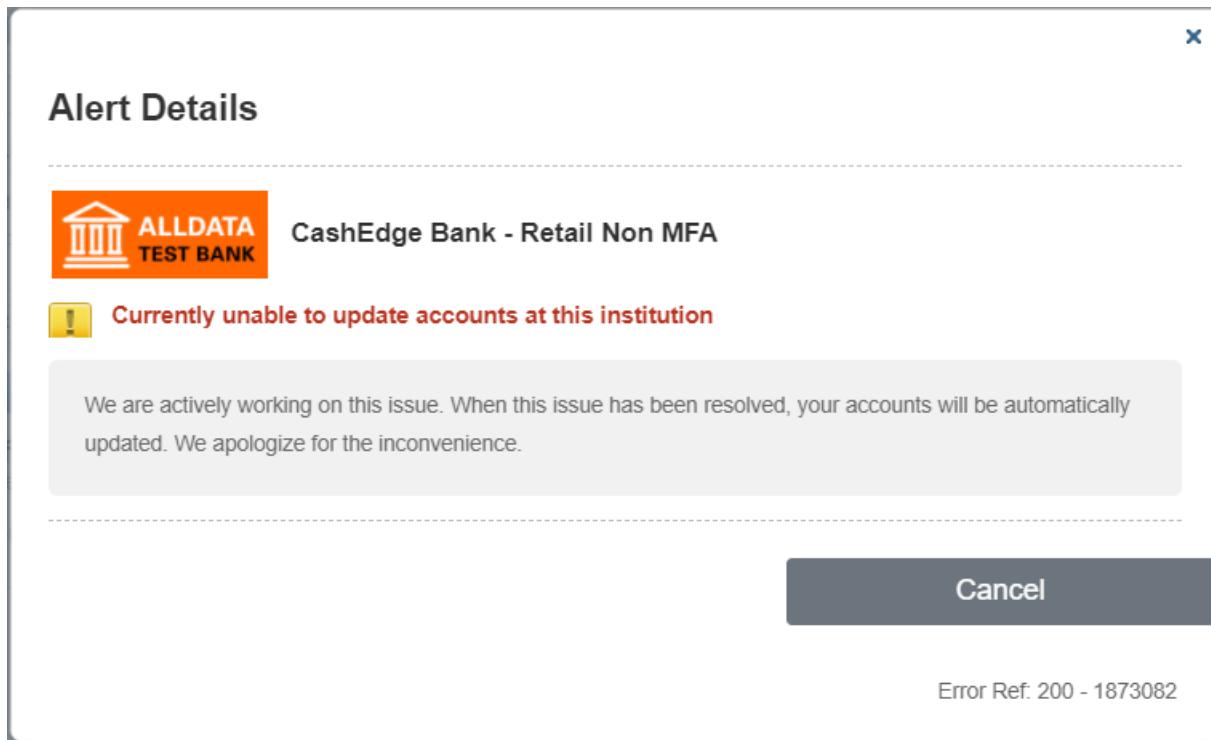


Information alert: This type of alert will remain on the user interface until Fiserv resolves the issue and the account is refreshed.

Error 200

Currently unable to update accounts at this institution

We are actively working on this issue. When this issue has been resolved, your accounts will be automatically updated. We apologize for the inconvenience.



Information alert: Fiserv will resolve the issue. After it is resolved, refreshing the account will clear the error.

Error 201

The name or number for this account may have changed or this account may no longer be available.

Login to the *institution name* website and check for the following:

- 1) If the name or number for this account has changed, click the "Match Accounts" button to select the correct account from a list of available accounts.
- 2) If this is a closed or inactive account, remove it from your profile.
- 3) If the name or number for this account has not changed and this is not a closed or inactive account, contact customer support.

Alert Details

 **CashEdge Bank - Retail Non MFA**

 **CashEdge Bank : Investment9....7890**

The name or number for this account may have changed or this account may no longer be available.

Login to the [CashEdge Bank - Retail Non MFA](#) website and check for the following:

- 1) If the name or number for this account has changed, click the "Match Accounts" button to select the correct account from a list of available accounts.

Match Accounts

CashEdge Bank : Investment9....7890

- 2) If this is a closed or inactive account, remove it from your profile.

Remove Account

CashEdge Bank : Investment9....7890

- 3) If the name or number for this account has not changed and this is not a closed or inactive account, contact customer support.

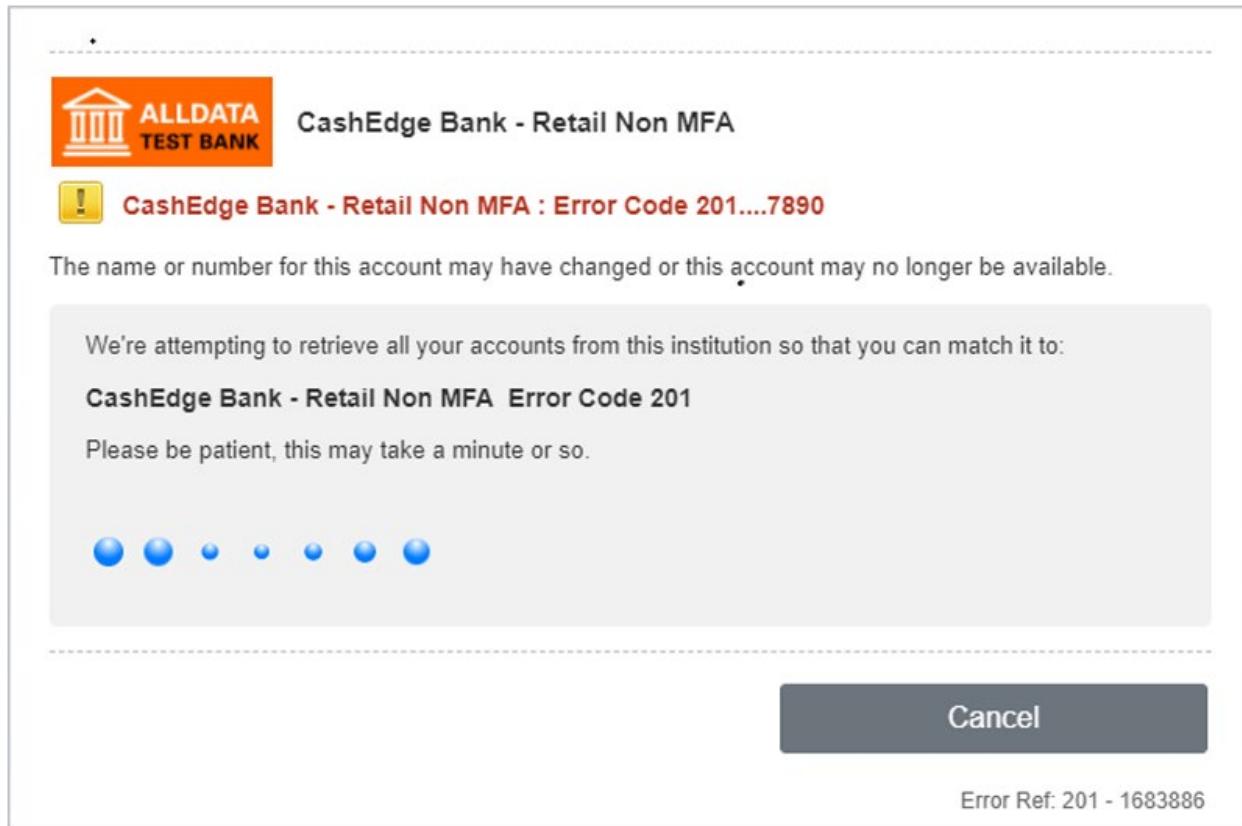
Cancel

Error Ref: 201 - 29558894

User intervention required – There are two options to resolve the 201 alert:

- Clicking **Remove Account** resolves the alert by initiating the process to delete the account from the user's profile. If this account is the only account associated with the credentials at the FI for the user, then the entire FI is deleted from the user's profile.
- Clicking **Match Accounts** resolves the alert by initiating the process to retrieve additional accounts using the credentials for the FI. A progress indicator appears on the overlay screen while the process retrieves accounts.

Error 201 – Match Accounts progress screen



The retrieved accounts appear for the user to choose from:

Error 201 – Accounts Match Up List

Alert Details

 CashEdge Bank - Retail Non MFA

! CashEdge Bank : Investment9....7890

The name or number for this account may have changed or this account may no longer be available.

Login to the CashEdge Bank - Retail Non MFA website and check for the following:

We've retrieved the following accounts from the institution site using your credentials.

- Invest9....7890
- SDBA....2135
- Trust Account....4682

Please select the account to match to CashEdge Bank - Retail Non MFA - and click Match Accounts:

Match Accounts

Cancel

Error Ref: 201 - 1683825

Clicking **Match Accounts** updates the existing account with the selected account's identifier (NickNameAtFI, NickNameAtCE, account number, and Misc fields).

If the match process does not find any new accounts, the following message appears to notify the user and the Resolve Alert box includes the option to delete the account from the user's profile.

Error 201 – No new accounts identified during Match Up process

Alert Details

 CashEdge Bank - Retail Non MFA

! CashEdge Bank - Retail Non MFA : Investment9....7890

The name or number for this account may have changed or this account may no longer be available.

We were unable to identify any new account at the institution that could match up your account.

1) If you no longer have an account at this institution, remove the account from your profile by clicking the delete account button below:

Remove Account

CashEdge Bank - Retail Non MFA Investment9

2) If this account does exist at the financial institution, this may be a temporary problem. Please try updating again later. If the problem persists, please contact customer support.

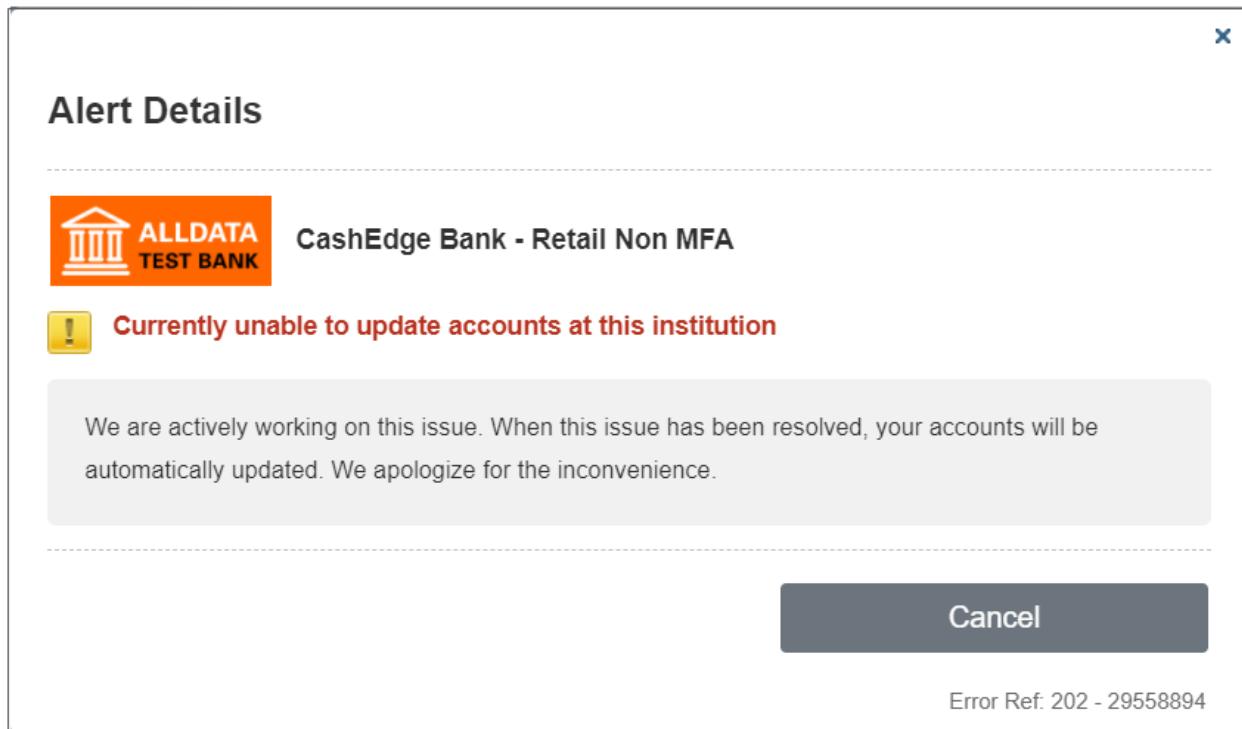
Cancel

Error Ref: 201 - 29558894

Error 202

Currently unable to update accounts at this institution

We are actively working on this issue. When this issue has been resolved, your accounts will be automatically updated. We apologize for the inconvenience.



User intervention required: This type of alert will remain on the user interface until Fiserv resolves the issue and the account is refreshed.

Error 203

Successful login but this account may no longer be available

Login to the *institution name* website and check for the following:

- 1) If this account is no longer available, remove it from your profile.
- 2) If this account is available, contact customer support.

Alert Details

 **CashEdge Bank - Retail Non MFA**

 **CashEdge Bank - Retail Non MFA : Error Code 203....6789**

Successful login but this account may no longer be available.

Login to the CashEdge Bank - Retail Non MFA website and check for the following:

1) If this account is no longer available, remove it from your profile.

Remove Account

CashEdge Bank - Retail Non MFA6789

2) If this account is available, contact customer support.

Cancel

Error Ref: 203 - 29558894

User intervention required: Clicking **Remove Account** resolves the alert by initiating the process to delete the institution from the user's profile. If this account is the only account associated with the credentials at the FI for the user, then the entire FI is deleted from the user profile.

Error 204

Successful login but this account may no longer be available

Login to the *institution name* website and check for the following:

- 1) If this account is no longer available, remove it from your profile.
- 2) If this account is available, contact customer support.

Alert Details

 **CashEdge Bank - Retail Non MFA**

! CashEdge Bank - Retail Non MFA : Investment12....

Successful login but this account may no longer be available.

Login to the [CashEdge Bank - Retail Non MFA](#) website and check for the following:

- 1) If this account is no longer available, remove it from your profile.

Remove Account

CashEdge Bank - Retail Non MFA : Investment12....

- 2) If this account is available, contact customer support.

Cancel

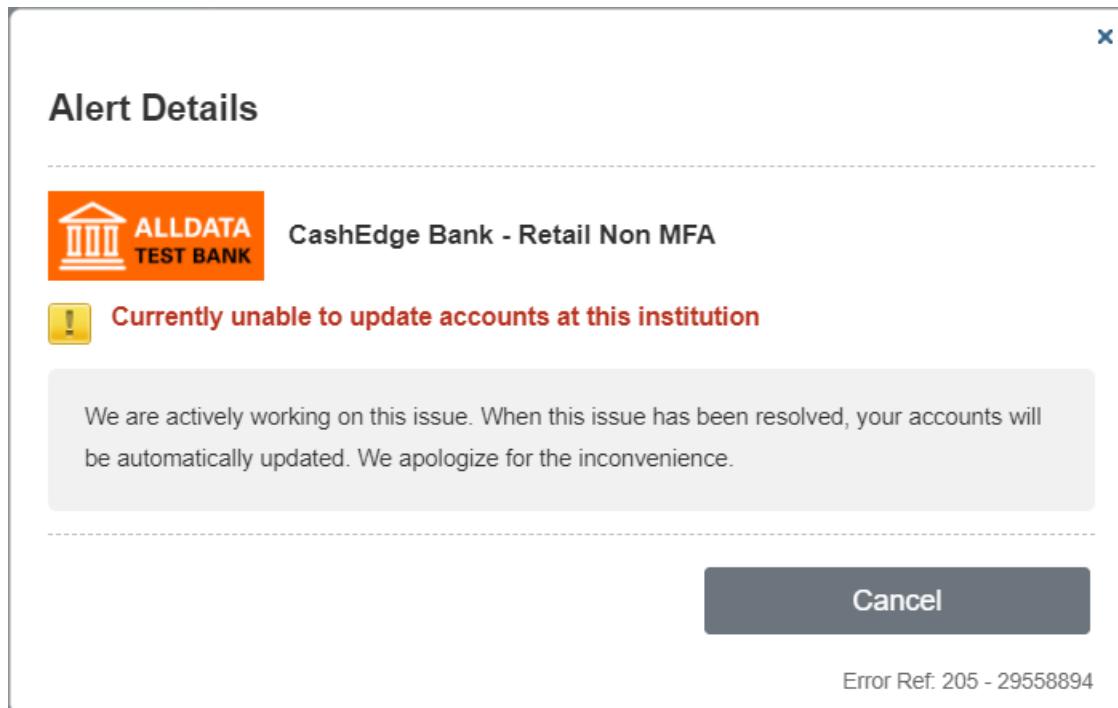
Error Ref: 204 - 1712576

User intervention required: Clicking **Remove Account** resolves the alert by initiating the process to delete the account from the user's profile. If this account is the only account associated with the credentials at the FI for the user, then the entire FI is deleted from the user profile.

Error 205

Currently unable to update accounts at this institution

We are actively working on this issue. When this issue has been resolved, your accounts will be automatically updated. We apologize for the inconvenience.

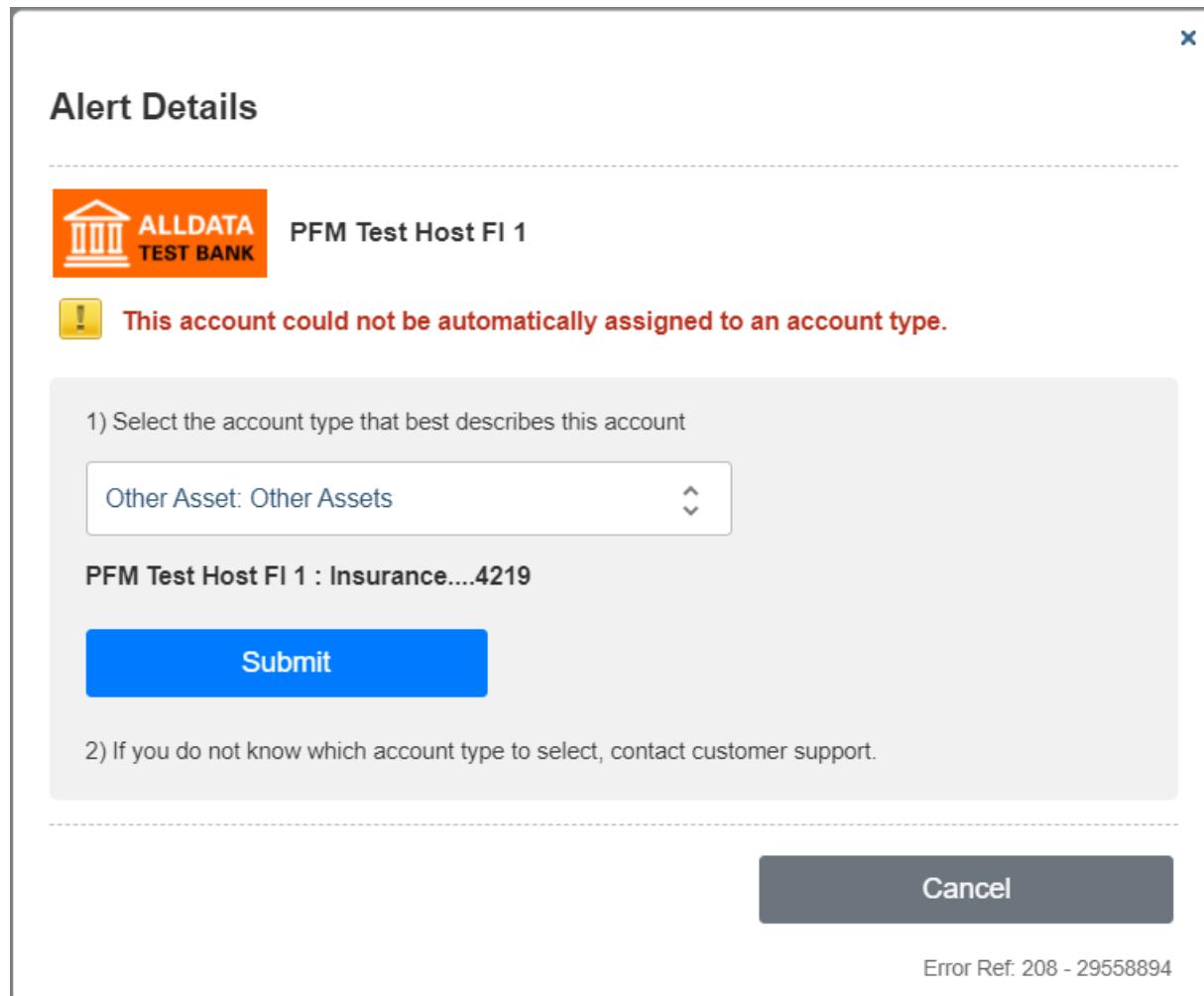


Information alert: Fiserv will resolve the issue. After it is resolved, refreshing the account will clear the error.

Error 208

This account could not be automatically assigned to an account type.

- 1) Select the account type that best describes this account.
- 2) If you do not know which account type to select, contact customer support.

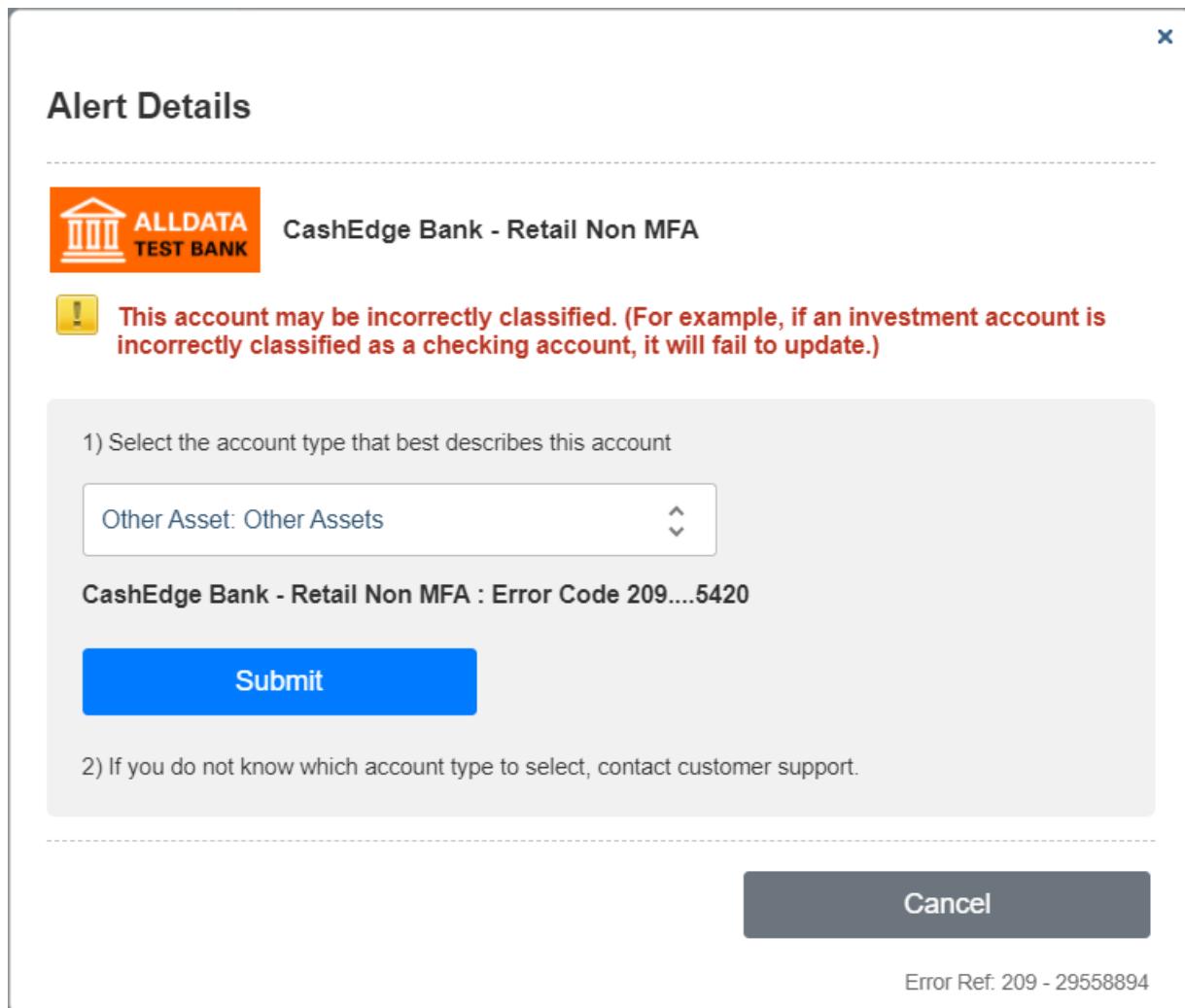


User intervention required: Clicking **Submit** saves the selected account type for the account, closes the overlay screen, and initiates an account update.

Error 209

This account may be incorrectly classified. (For example, if an investment account is incorrectly classified as a checking account, it will fail to update.)

- 1) Select the account type that best describes this account.
- 2) If you do not know which account type to select, contact customer support.



User intervention required: Clicking **Submit** saves the selected account type, closes the overlay screen, and initiates an account update.

Error 300

The login credentials for this institution's website may be incorrect.

Login to the *institution name* website and check for the following:

- 1) If you are able to login, re-enter the same credentials below.
- 2) If you are unable to login, contact customer support directly at *institution name*.

Alert Details

 **CashEdgeBank - Retail MFA**

! The login credentials for this institution's website may be incorrect.

Login to the CashEdgeBank - Retail MFA website and check for the following:

1) If you are able to login, re-enter the same credentials below.

FI Login

FI Password

Submit

2) If you are unable to login, contact customer support directly at CashEdgeBank - Retail MFA.

Cancel

Error Ref: 300 - 1873082

User intervention required: Clicking **Submit** validates and saves the credentials for the FI, then closes the overlay screen and initiates an account update.

Error 301

The login credentials for this institution's website may be incorrect.

Login to the *institution name* website and check for the following:

- 1) If you are able to login, re-enter the same credentials below.
- 2) If you are unable to login, contact customer support directly at *institution name*.

Alert Details

 **CashEdgeBank - Retail MFA**

! The login credentials for this institution's website may be incorrect.

Login to the CashEdgeBank - Retail MFA website and check for the following:

1) If you are able to login, re-enter the same credentials below.

FI Login

FI Password

Submit

2) If you are unable to login, contact customer support directly at CashEdgeBank - Retail MFA.

Cancel

Error Ref: 301 - 1873082

User intervention required: Clicking **Submit** saves the credentials for the FI, closes the overlay screen, and initiates an account update.

Error 302

This institution requires additional action on an intermediate page (such as an updated agreement or additional 30questions) in order to complete the login.

- 1) Login to the *institution name* website and follow any additional instructions.
- 2) Click on the "Update Accounts" button to update all accounts at this institution.
- 3) If your accounts still do not update, contact customer support.

Alert Details

 **CashEdge Bank - Retail Non MFA**

 This institution requires additional action on an intermediate page (such as an updated agreement or additional security questions) in order to complete the login.

1) Login to the CashEdge Bank - Retail Non MFA website and follow any additional instructions.
2) Click on the "Update Accounts" button to update all accounts at this institution.
3) If your accounts still do not update, contact customer support.

Update Accounts

Cancel

Error Ref: 302 - 29558894

User intervention required: Clicking **Update Accounts** closes the overlay screen and initiates an account update.

Error 303

Additional security question(s) are required by this institution's website in order to complete the login. You may be prompted to answer multiple questions or to answer the same question more than once.

<additional security question with input field>

Alert Details

 **CashEdgeBank - Retail MFA**

 **Additional security question(s) are required by this institution's website in order to complete the login. You may be prompted to answer multiple questions or to answer the same question more than once.**

 https://testbank.wm.cashedge.com/jsp/cashedge/fiserver/cefi/fiServerLogin.jsp?FI_ID=505003

What is your favorite sport ?

Submit

Cancel

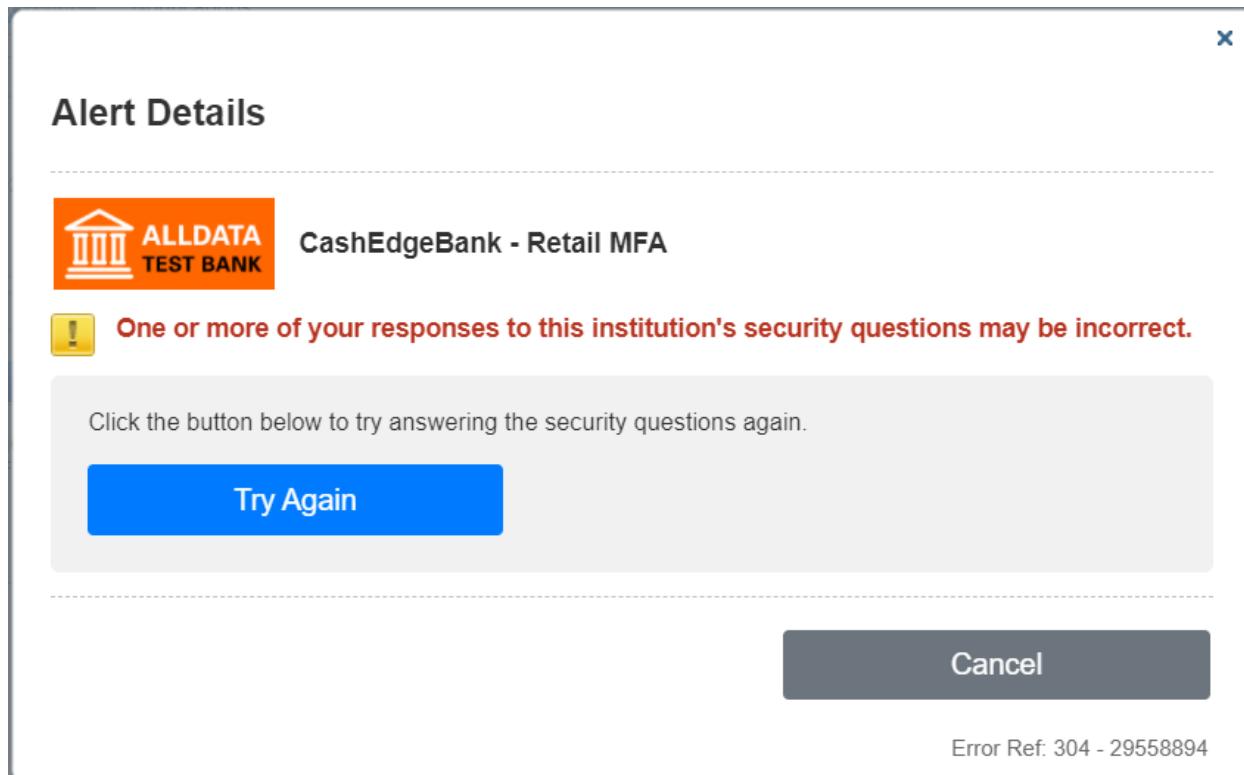
Error Ref: 303 - 29558894

User intervention required: Clicking **Submit** saves the responses to the MFA challenge question(s) and initiates an account update.

Error 304

One or more of your responses to this institution's security questions may be incorrect.

Click the button below to try answering the security questions again.



User intervention required: Clicking **Try Again** allows the user to give new answers to the MFA challenge questions. If valid, the new responses are saved, the overlay screen closes, and the account is updated.

Error 306

This may be the wrong institution website for this account.

Login to the *institution name* website and check for the following:

- 1) If you are unable to login, this may be an incorrect website. Select the correct website by clicking the button below. This will also delete any partial accounts that may have been created for this incorrect website.
- 2) If you think this is the correct website, contact customer support.

Alert Details

 **CashEdge Bank - Retail Non MFA**

! **This may be the wrong institution website for this account.**

Login to the CashEdge Bank - Retail Non MFA website and check for the following:

- 1) If you are unable to login, this may be an incorrect website. Select the correct website by clicking the button below. This will also delete any partial accounts that may have been created for this incorrect website.
- 2) If you think this is the correct website, contact customer support.

Select New institution

Cancel

Error Ref: 306 - 29558894

User intervention required: Clicking **Select New Institution** deletes the existing account and sends the user to the Add Accounts screen, where they can start the Add Accounts process from the beginning.

Error 307

This institution has locked your account.

- 1) Login to the *institution name* website and follow the instructions to unlock the account.
- 2) If you are able to unlock the account, re-enter the updated login credentials below.
- 3) If you are unable to unlock the account, contact customer support directly at *institution name*.
- 4) For all other issues, contact customer support.

The screenshot shows a modal window titled "Add Accounts". At the top, there is a navigation bar with three steps: "Find Your Institution" (step 1, highlighted in blue), "Provide Sign-In Info" (step 2, also highlighted in blue), and "Confirmation" (step 3, grayed out). Below the navigation bar, the institution "ALLDATA TEST BANK" is selected, and the name "CashEdge Bank - Retail Non MFA" is displayed. A red warning message "This institution has locked your account." is shown with an exclamation mark icon. Below the message, a list of four steps is provided. The "FI Login" and "FI Password" fields are present for entering credentials. At the bottom of the modal, there are two buttons: "Select Another Bank" and "Next".

1) Login to the CashEdge Bank - Retail Non MFA website and follow the instructions to unlock the account.

2) If you are able to unlock the account, re-enter the updated login credentials below.

3) If you are unable to unlock the account, contact customer support directly at CashEdge Bank - Retail Non MFA.

4) For all other issues, contact customer support.

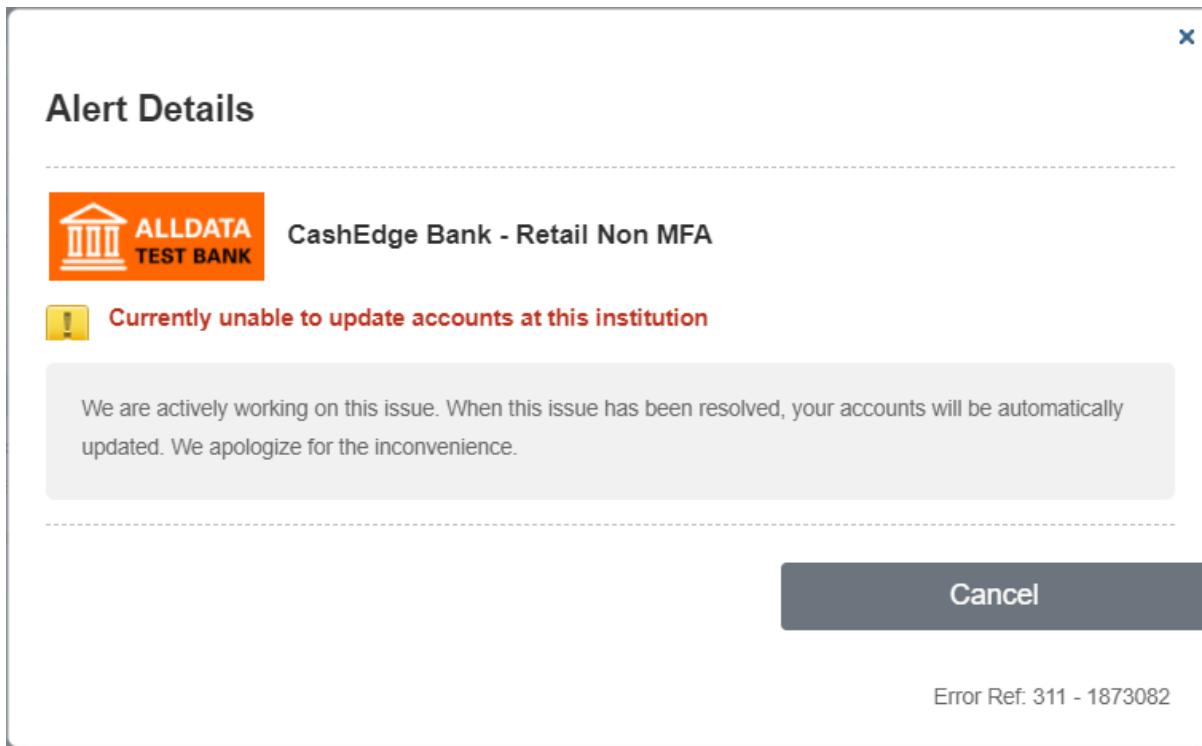
Select Another Bank Next

User intervention required: Clicking **Next** validates and saves the credentials for the FI, then closes the overlay screen and initiates an account update.

Error 311

Currently unable to update accounts at this institution

We are actively working on this issue. When this issue has been resolved, your accounts will be automatically updated. We apologize for the inconvenience.



Information alert: Fiserv will resolve the issue. After it is resolved, refreshing the account will clear the error.

Error 312

Due to an updated connection process with <FI name>, this institution requires all existing users to re-confirm their consent to share data with this application...

Alert Details

 **Fiserv - Oauth Implementation**

1) Due to an updated connection process with Fiserv - Oauth Implementation, this institution requires all existing users to re-confirm their consent to share data with this application. When you select "Authenticate" below, you will be redirected to a site hosted by this institution where you will validate your identity, select the accounts you wish to share, and confirm consent.

Note: By providing this consent, you are agreeing to share data with the selected application. Data to be shared may include account details including balances and transactions, as well as account information such as account number, routing number and account owner names.

Authenticate

2) If you are unable to authenticate, contact customer support directly at Fiserv - Oauth Implementation

Cancel

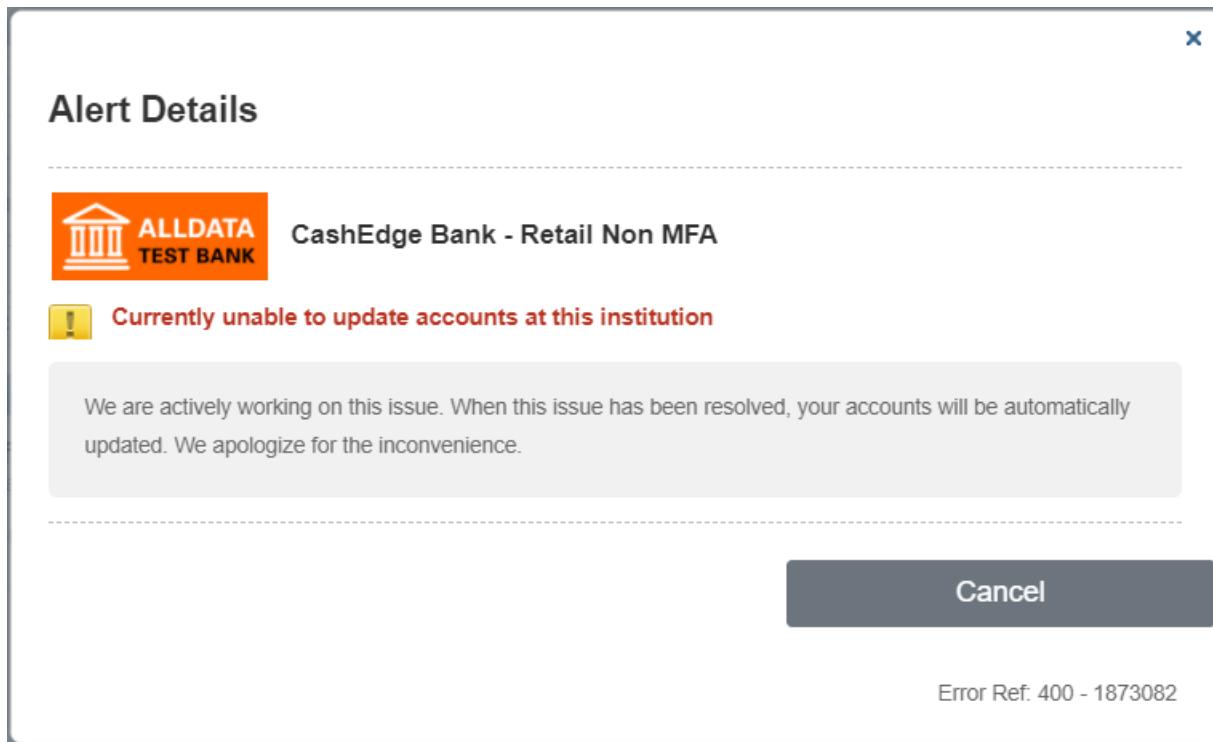
Error Ref: 312 - 1869493

User intervention required: The institution has implemented OAuth and the user's profile is suspended until it is migrated to the OA model. Clicking **Authenticate** opens the institution website where the user must authenticate their login credentials, provide updated consent for account sharing, and select the profile(s) to migrate.

Error 400

Currently unable to update accounts at this institution

We are actively working on this issue. When this issue has been resolved, your accounts will be automatically updated. We apologize for the inconvenience.

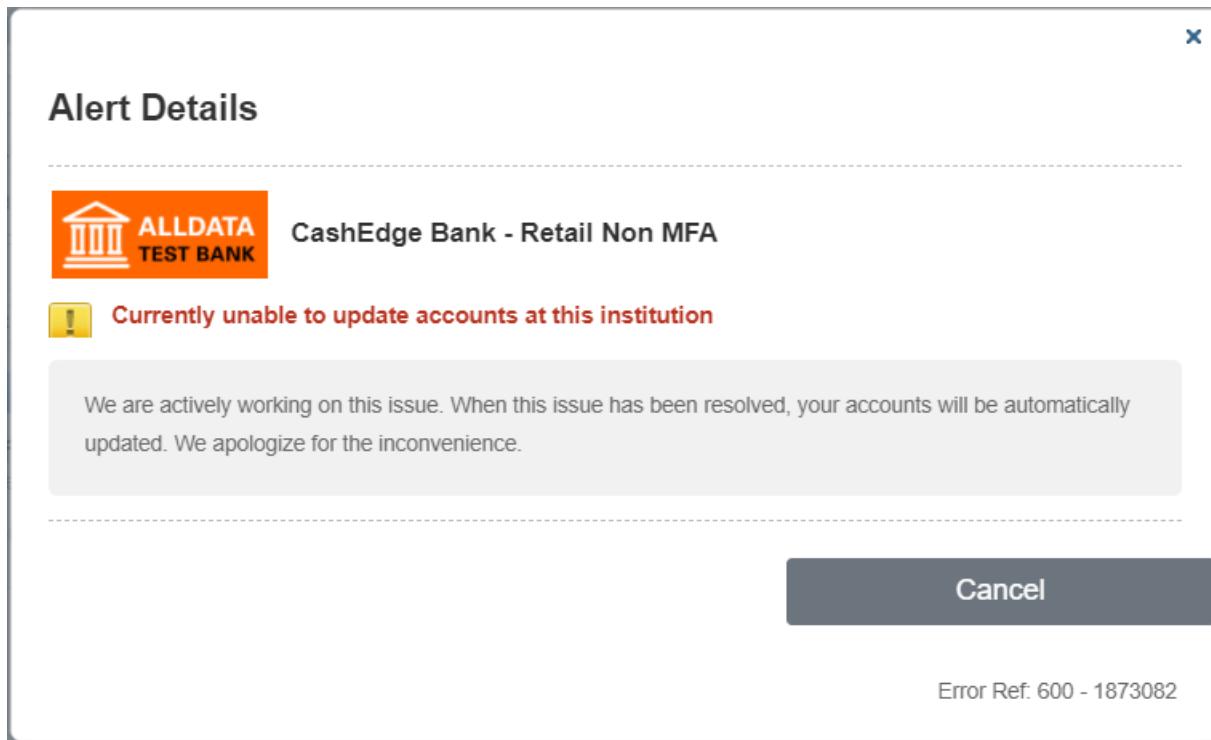


Information alert: Fiserv will resolve the issue. After it is resolved, refreshing the account will clear the error.

Error 600

Currently unable to update accounts at this institution

We are actively working on this issue. When this issue has been resolved, your accounts will be automatically updated. We apologize for the inconvenience.

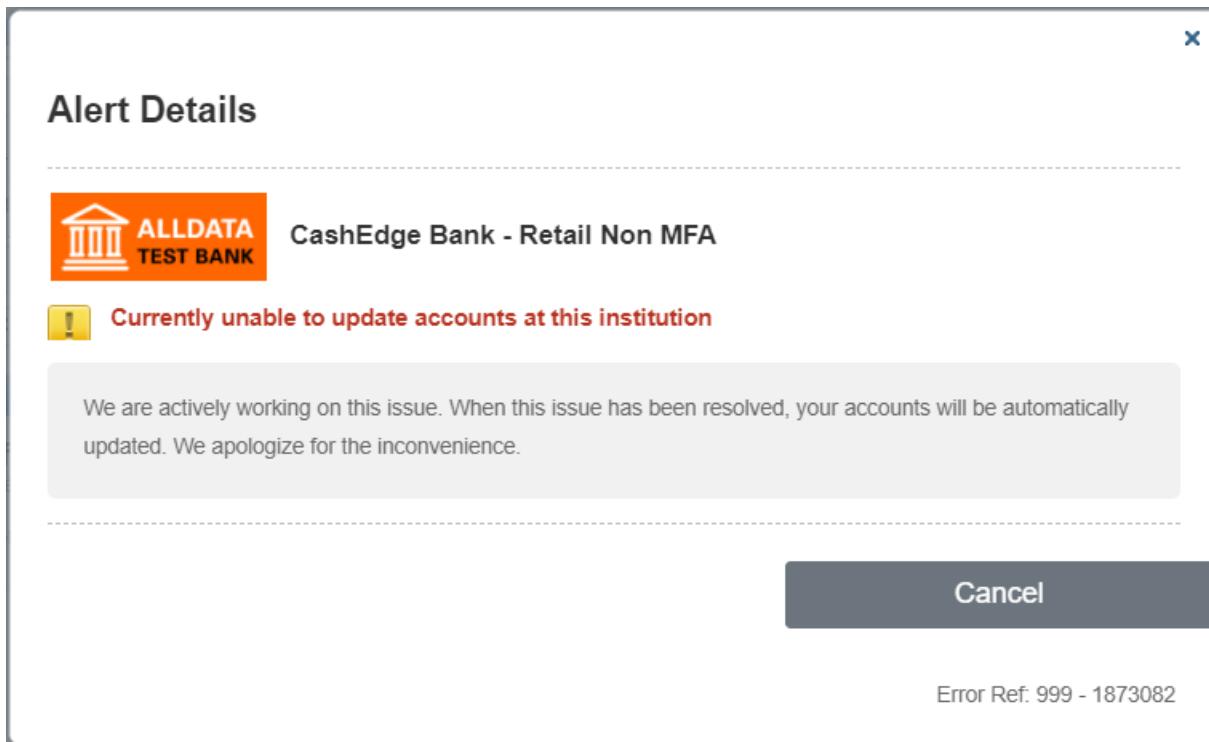


Information alert: Fiserv will resolve the issue. After it is resolved, refreshing the account will clear the error.

Error 999

Currently unable to update accounts at this institution

We are actively working on this issue. When this issue has been resolved, your accounts will be automatically updated. We apologize for the inconvenience.



Information alert: Fiserv will resolve the issue. After it is resolved, refreshing the account will clear the error.

Appendix B

Add Account Label Configuration Options

The following table lists the possible label configurations in the widgets. Partners wishing to customize widget labels can change the default values as desired.

#	Page	Object type	Name	Default value
1	Initial screen	Label	Widget title	Add Accounts
2	Initial screen	Label	Search for your FI	Search for your financial institution:
3	Initial screen	Label	Select Popular Institutions	Or choose from popular financial institutions where you have an account
4	Initial screen	Label	Note label for suspended FI	Note: Institutions with (!) sign are currently not available
5	Initial screen	Label	If FI not listed	Please check the name and try again
6	Initial screen	Label	Offline account message	If you have an asset or liability that does not have online access (real estate, auto, jewelry, etc.), click here to add an offline account
7	Initial screen	Button label	Next button	Next
8	Login Credentials screen	Label	Widget title	Add Accounts
9	Initial screen	Button label	Next button	Next
10	Login Credentials screen	Label	Widget title	Add Accounts
11	Login Credentials screen	Label	Enter your credentials	Enter your credentials for this institution
12	Login Credentials screen	Label	Login credentials error message	All fields are required. Please check your entries and try again.
13	Login Credentials screen	Label	Error message 301	The login credentials for this institution's website may be incorrect.
14	Login Credentials screen	Label	Connecting to FI site	Connecting the institution and securely accessing your account...
15	Account Classification screen	Label	Account Selection	Select the accounts from this institution that you want to connect.
16	Account Classification	Button label	Next button	Next
17	Account Confirmation screen	Label	Widget title	Add Accounts
18	Account Confirmation screen	Label	Added so far	List of all accounts added for this institution.
19	Account Confirmation screen	Label	Continue adding more accounts	To continue adding more accounts, click Add More Accounts.
20	Account Confirmation screen	Button label	Add More Accounts button	Add More Accounts