Envestnet | Yodlee FastLink for Open Banking

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Contents

1 Overview

With Envestnet | Yodlee® FastLink, consumers can securely link accounts from financial institutions from around the world—including checking, savings, credit cards, investments, mortgage, and more, in seconds.

Whether on a desktop, tablet, or mobile device, FastLink makes it easy for consumers to view and manage their finances in one place. Users have access to the most comprehensive list of institutions around the world. And with help tools along the way, the onboarding process couldn't be easier.

The behavioral UI design guides users through identifying, verifying and linking accounts in a secure process. FastLink supports linking using credentials, multifactor authentication, and now credential-less US Open Banking connections as well.

U.S. Open Banking will provide users with a new way to link accounts while managing their account access and authentication directly with the financial institution.

Illustrated below are three U.S. Open Banking user flows enabled by FastLink:

- Add flow – User is linking their accounts for the first time
- Migration flow – User is updating their previously added accounts for a given financial institution to a new Open Banking connection method
- Migration flow with multiple logins – User has previously added accounts under more than one login for a given financial institution (e.g., accounts for a household) and is updating to new Open Banking connection method.

2 Add Flow

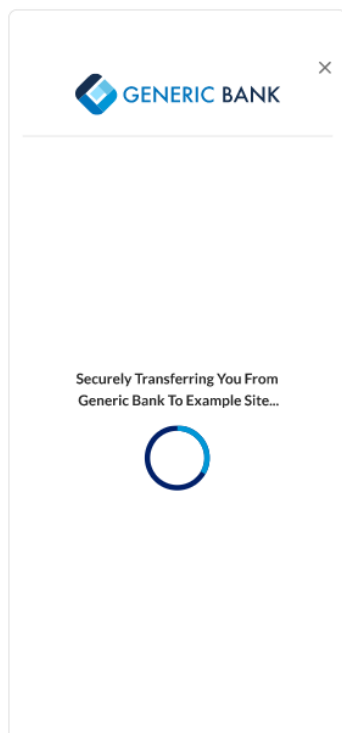User is linking their accounts for the first time.

- A user launches FastLink to link their accounts and selects a financial institution from the list of popular sites, or searches to find and select a different site.
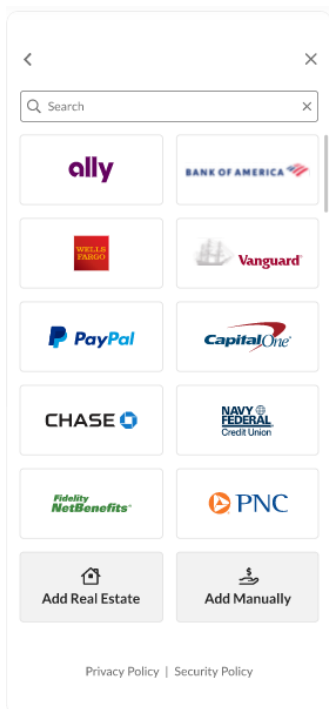
- After selecting a financial institution, the user is presented with an informational screen. This gives transparency to the user about what data will be retrieved with their permission. The user selects 'Continue.'
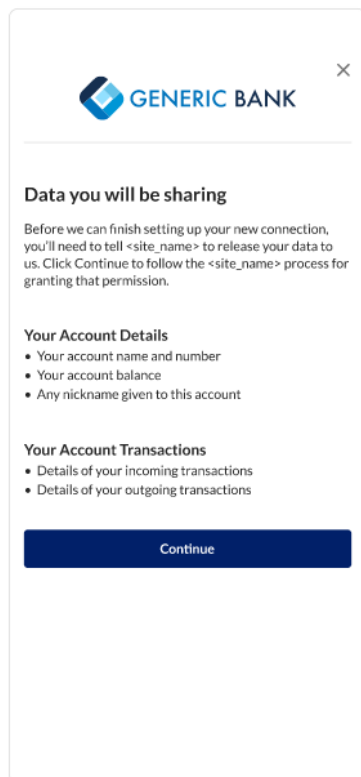
- An interstitial page shows the user that they are being securely redirected to the financial institution site.

- On the financial institution's site, the user will then enter their credentials, select their accounts and agree to the financial institution's terms.

- Next, the user is returned back to FastLink. The accounts selected on the institution's site are displayed with the updated data.

3 Migration Flow

User is updating their previously added accounts for a given financial institution to a new Open Banking connection method.

- A user launches FastLink in Edit Credentials mode to update a specified provider site.
- The user is shown the list of accounts that have previously been added for the financial institution and is prompted to update the connection.
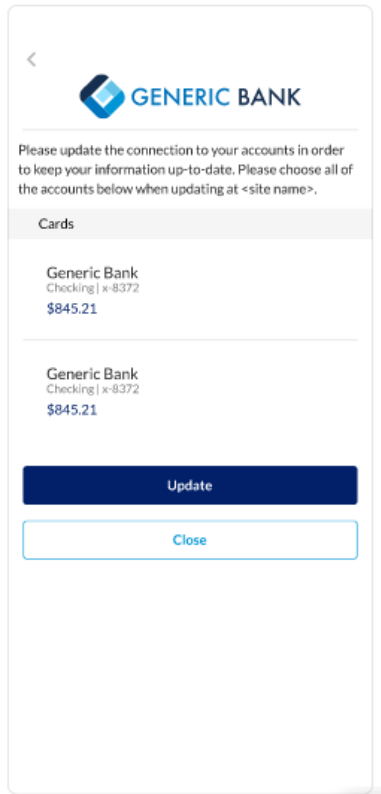
- The user is presented with the informational screen that gives transparency to the user about what data will be retrieved with their permission. The user selects 'Continue.' (same as previous)
- An interstitial page shows the user that they are being securely redirected to the financial institution site. (same as previous)
- On the financial institution's site, the user will then enter their credentials, select their accounts and agree to the financial institution's terms. (same as previous)
- Next, the user is returned back to FastLink. The accounts selected on the institution's site are displayed with the updated data. (same as previous)

4 Migration Flow with Multiple Logins

User has previously added accounts under more than one login for a given financial institution (e.g., accounts for a household) and is updating to new Open Banking connection method.

- A user launches FastLink in Add Account mode and selects a site to be added.

- The user has previously added accounts for the selected institution with different logins. The user is shown the list of existing logins and has the choice of editing one (Edit flow) or adding a new one (Add flow).
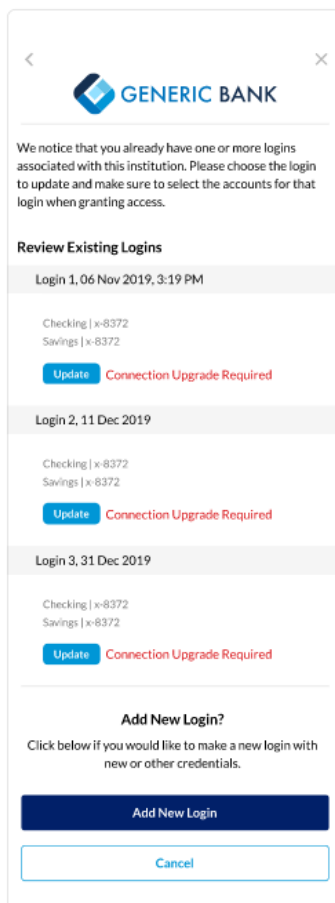
- The user is presented with the informational screen that gives transparency to the user about what data will be retrieved with their permission. The user selects 'Continue.' (same as previous)
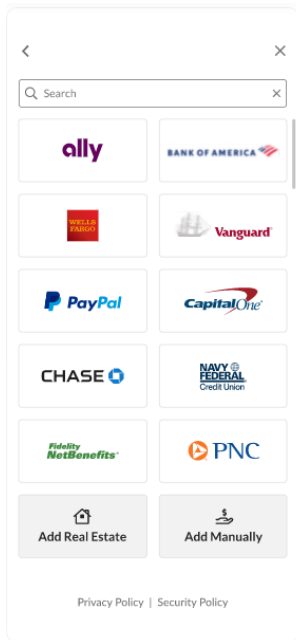- An interstitial page shows the user that they are being securely redirected to the financial institution site. (same as previous)
- On the financial institution's site, the user will then enter their credentials, select their accounts and agree to the financial institution's terms. (same as previous)
- Next, the user is returned back to FastLink. The accounts selected on the institution's site are displayed with the updated data. (same as previous)

5 Additional Considerations for using FastLink with Open Banking

5.1 Mobile Implementations

In the Open Banking flow described above, the Financial Institution login form opens as a separate window with redirection from FastLink. For native mobile implementations, the implementation should be able to handle the redirection and return. Example code below for React Native.

1. Submit the form to invoke FastLink in React Native web view.
2. Pass extra params in URL encoded format for invoking mobile flow and receiving post messages.

```
isMobile: true
deviceType: "android/ios"
fwType: "reactnative"
locationurl: "FastLink URL"
```

3. For Open Banking integration, listen to post message event type "LAUNCH_BROWSER" and open the URL passed in payload in a new window.

```
onMessage = ({nativeEvent: {event} = {}}) => {
    if (event.type === "LAUNCH_BROWSER") {
        Linking.openURL(event.data.url);
    }
}
```

Once the user finishes account addition, the browser will invoke deep linking flow with the URL. Listen to deep linking flow with URL "ydl://backtoframework". This should be done in native code for all the OS types.

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5.2 Sync API Data Handling

Some clients consume Yodlee data through sync APIs. As part of the Open Banking rollout, the current `providerId` will change to a new oAuth `providerId`. Also, in a small percentage of migration scenarios, the `providerAccountId` of an existing account can change after the rollout. Clients should validate that they will be able to successfully update the new provider and `providerAccountId` as provided in the API response.

5.3 Dataset Additional Statuses

In case of Open Banking related failures, Yodlee will return the dataset additional statuses listed in the table below along with the list of current additional statuses. The client applications should handle these new errors.

Provider Account Status	Dataset Additional Status	Description	FastLink Message
FAILED	CONSENT_REQUIRED	User has not yet provided consent on Open Banking provider site. Display an entry point into the edit flow and instruct the user to provide consent to access the account information.	**Title**: Consent Needed **Message**: You have not given consent to access account information at <SITE NAME>. Click Update to give your permission
FAILED	CONSENT_EXPIRED	User's Open Banking consent has expired, display an entry point into edit flow with instructions to provide consent to access the account information.	**Title**: Consent Expired **Message**: The consent you provided to access account information at <SITE NAME> has expired. Click Renew to restore permission.
FAILED	CONSENT_REVOKED	User has revoked consent to access the account information through Open Banking. Display an entry point into edit flow and instruct the user to provide consent to access the account information.	**Title**: Consent Not Available **Message**: The consent you provided to access account information at <SITE NAME> is no longer available or has been revoked. Click Renew to restore permission

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Provider Account Status	Dataset Additional Status	Description	FastLink Message
FAILED	INCORRECT_OAUTH_TOKEN	Yodlee failed to log in to the Open Banking provider site due to a technical issue while obtaining the OAuth access token. Display an entry point into edit flow and instruct the user to provide consent to access the account information.	**Title**: Technical Error **Message**: We're unable to link your account at this time. Please try again later.
IN_PROGRESS	MIGRATION_IN_PROGRESS	Rollout is in progress. Not an error, intermediate state.	Intermediate status/ no corresponding error message

5.4 API Restrictions

Once a given user has started the migration process, changes should not be made to their accounts until the migration has completed. Clients should not call the data APIs below when the provider account (and/or accounts) `oauthMigrationStatus` attribute is equal to `IN_PROGRESS`:

API Name	Method & Route
Delete Account	DELETE /accounts/{accountId}
Update Account	PUT /accounts/{accountId}
Update Provider Account	PUT /providerAccounts/{providerAccountId}

If the above API calls are invoked while rollout is in progress, the below error is thrown by API.

```
{
    "errorCode": "Y868",
    "errorMessage": "No action is allowed, as the data is being migrated to the
      Open Banking provider",
    "referenceCode": "i1594827165486S10J167R"
}
```

Note: `IN_PROGRESS` is a transient status that only appears during the migration. In most cases the migration takes less than a minute.

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