PLAID

Plaid Income

Recommendations and helpful tips for building your income verification solution!

This guide outlines best practices and suggestions for building a user-friendly income verification solution to help you maximize conversion, automate your decisioning, and minimize fraud. We've broken it down into key considerations for a front-end and back-end implementation below.

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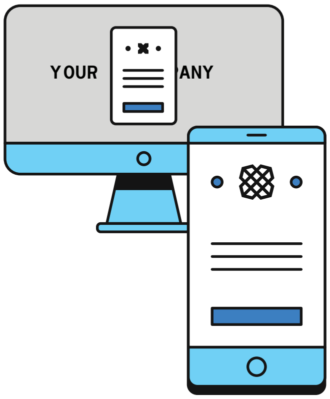


Front-end implementation

CREATE A FIRST-CLASS USER EXPERIENCE

Plaid Link is the client-side component that your users will interact with in order to verify their income using Plaid. Plaid Link will handle credential validation, multi-factor authentication, and error handling for each institution that we support. Additionally, consider the following implementation best practices to create a healthy and stable integration.

Create a user

In order to cleanly and accurately verify the income for your users over time, we leverage a user_token at Plaid. You should create a single user token to represent your end-user interacting with your application. Having a single user token allows you to send your end-user along multiple income verification methods, if needed, and access all income information for the user with a single token. You should only create one user_token per user, even if that user comes back and needs to re-verify income at a later point in time. To do so, begin the income verification process by calling the /user/create endpoint and provide any information you have about the user, for example their name, email, etc.

Choose which products to initialize

Your use case will determine which products you should leverage and initialize Link with when creating the Link token. Plaid will dynamically control institution coverage, i.e. what institutions and/or payroll providers your users can see and select in Link, based on the initialized products. Let’s break it down by each product you may consider initializing with:

Payroll Income: Allows you to instantly verify income directly from the source employer or payroll provider.

WHEN SHOULD I USE PAYROLL INCOME?
You should verify income using the payroll method if you rely on gross or net income during the decisioning process, straight from the payroll source. Additionally, if you need the data instantly or directly from the source payroll provider you will want to leverage this method. It is strongly recommended to leverage the precheck functionality via the /credit/payroll_income/precheck endpoint when using this income verification method.

WHAT USERS ARE COVERED?
Today, we cover ~80% of the United States workforce across payroll providers and gig platforms, with this number continuously growing. For full coverage of employees with a pay stub or W2, you should leverage the Document Income fallback.

Improve conversion using precheck!

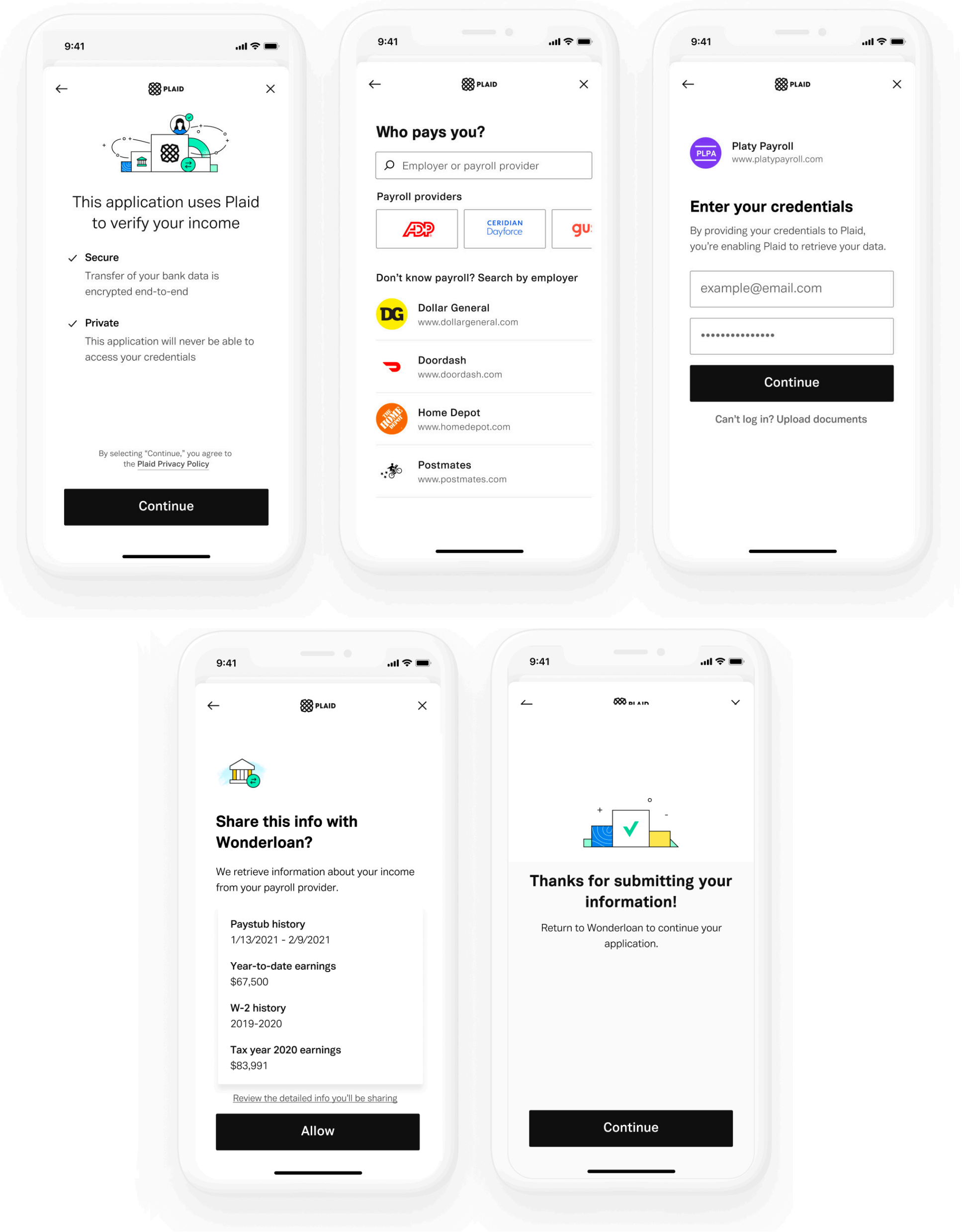
What is precheck?
Precheck leverages your past Plaid user connections or employer data to provide a simpler and shorter UX, skipping specific panes, thereby increasing conversion rates. Plaid can estimate the likelihood that a user will be covered, and be able to convert, via our payroll verification flow.

How do I use precheck?
Call the /credit/payroll_income/precheck endpoint with the given user_token and provide the required information. Specifically, make sure to include the access_tokens for any existing connections for that user. Then, when you provide that user_token in the /link/token/create call, we'll modify our Link flow to create an experience tailored to your user.

When should I use precheck?
Always! There is never a detrimental impact of using precheck. It allows you to route your users to the verification flow where they are most likely to convert and allows us to improve their experience when they are in Link.

HOW DO I INITIALIZE LINK WHEN USING PAYROLL INCOME?

To leverage the Payroll Income flow, make sure to set the income_source_types = payroll and payroll_income.flow_type = digital when you make your /link/token/create call. Also be sure to pass the user_token into the /link/token/create call as well.



This application uses Plaid to verify your income

✓ Secure
Transfer of your bank data is encrypted end-to-end

✓ Private
This application will never be able to access your credentials

By selecting "Continue," you agree to the Plaid Privacy Policy

Who pays you?

Payroll providers

Don't know payroll? Search by employer

Dollar General	www.dollargeneral.com
Doordash	www.doordash.com
Home Depot	www.homedepot.com
Postmates	www.postmates.com

Platy Payroll
www.platypayroll.com

Enter your credentials

By providing your credentials to Plaid, you're enabling Plaid to retrieve your data.

example@email.com

Can't log in? Upload documents

Share this info with Wonderloan?

We retrieve information about your income from your payroll provider.

Paystub history
1/13/2021 - 2/9/2021

Year-to-date earnings
$67,500

W-2 history
2019-2020

Tax year 2020 earnings
$83,991

Review the detailed info you'll be sharing

Thanks for submitting your information!

Return to Wonderloan to continue your application.

Plaid has 250K+ employer to payroll provider mappings so users can search in Plaid by employer or payroll provider!

Document Income: Allows you to verify a user's income automatically based on pay stubs or W2s they provide.

WHEN SHOULD I USE DOCUMENT INCOME?

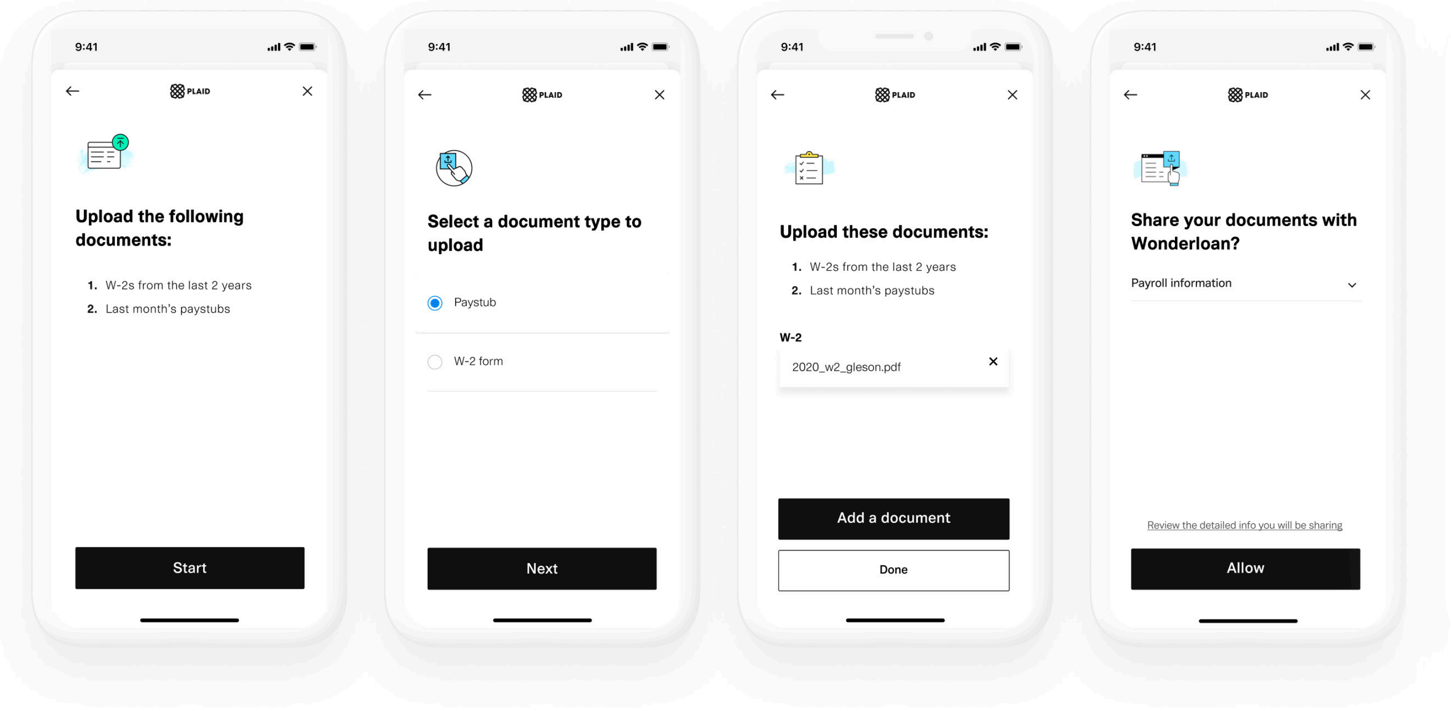
If you accept manually uploaded documents today, you should leverage the Document Income verification method. This method provides OCR capabilities to allow users to upload a document or take a photo of their pay document and have that data returned in the same JSON response as the Payroll Income flow. We provide fraud signals to reduce the likelihood of accepting fraudulent documents. Further, this can be leveraged as a fallback to the Payroll Income flow, or as a standalone experience. This data is returned in an average time of 15 minutes and can be used to automate decisioning.

WHAT USERS ARE COVERED?

Today, we support any user with a pay stub or W2. For users who may not receive these documents and have different sources of income, you should leverage the Bank Income verification method.

HOW DO I INITIALIZE LINK WHEN USING DOCUMENT INCOME?

To leverage the Document Income flow, make sure to set the income_source_type = payroll and payroll_income.flow_type = document when you make your /link/token/create call. If you want the Document Income flow as a fallback to the Payroll Income flow, make sure to specify both digital and document as the payroll_income.flow_type. Also be sure to pass the user_token into the /link/token/create call as well.



Upload the following documents:

1. W-2s from the last 2 years
2. Last month's paystubs

Select a document type to upload

● Paystub

○ W-2 form

Upload these documents:

1. W-2s from the last 2 years
2. Last month's paystubs

W-2

2020_w2_gleson.pdf ×

Share your documents with Wonderloan?

Payroll information

Review the detailed info you will be sharing

One Link, many use cases

When your users connect with Link to verify their income using the Bank Income method, you can leverage that single connection for many use cases. Be sure to listen to the onSuccess callback and log the public_token we return to you. Then, exchange the public_token for an access_token which can be used to leverage other Plaid products such as Auth and Balance for payments. For more information on how to build a payments solution, see our Account Opening + Funding guide here.

Bank Income: Identifies cash flow income based on deposits in a consumer's depository bank account.

WHEN SHOULD I USE BANK INCOME?

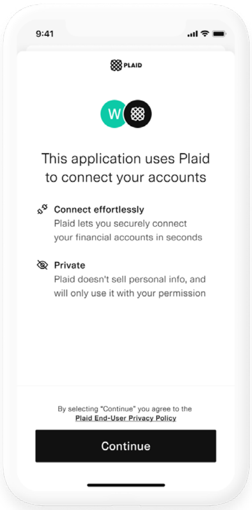
You should verify income using the Bank Income method if you leverage Net Income (or Gross Income for gig economy workers) during the decisioning process. Bank Income also works well when verifying income for users who work in the gig economy or have multiple jobs, since with one connection you can verify all income streams. Additionally, when a user verifies income using the Bank Income method, you can leverage this connection for additional use cases, such as for payments, without requiring the user to reconnect.

WHAT USERS ARE COVERED?

Since Bank Income is built on our existing industry-leading bank coverage, we support over 12K+ Financial Institutions to provide robust coverage for your users.

HOW DO I INITIALIZE LINK WHEN USING BANK INCOME?

To leverage the Bank Income flow, make sure to set the income_source_type = bank and specify the number of days_requested when you make your /link/token/create call. Also be sure to pass the user_token into the /link/token/create call as well.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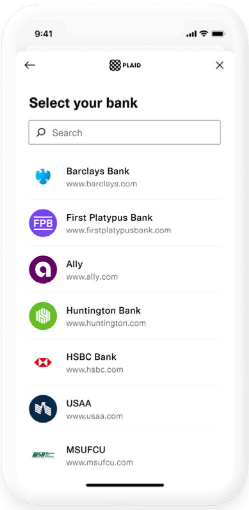
This application uses Plaid to connect your accounts

Connect effortlessly
Plaid lets you securely connect your financial accounts in seconds

Private
Plaid doesn't sell personal info, and will only use it with your permission

By selecting "Continue" you agree to the Plaid End-User Privacy Policy

Continue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PLAID

Select your bank

Search

Barclays Bank
www.barclays.com

First Platypus Bank
www.firstplatypusbank.com

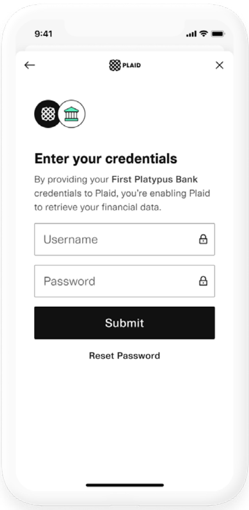
Ally
www.ally.com

Huntington Bank
www.huntington.com

HSBC Bank
www.hsbc.com

USAA
www.usaa.com

MSUFCU
www.msufcu.com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Enter your credentials

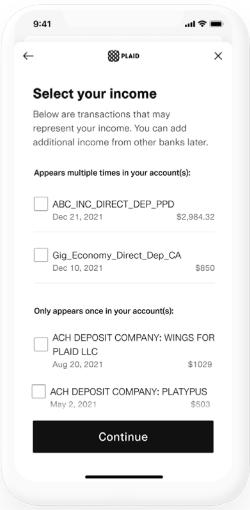
By providing your **First Platypus Bank** credentials to Plaid, you're enabling Plaid to retrieve your financial data.

Username

Password

Submit

Reset Password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Select your income

Below are transactions that may represent your income. You can add additional income from other banks later.

Appears multiple times in your account(s):

□ ABC_INC_DIRECT_DEP_PPD
Dec 21, 2021 $2,984.32

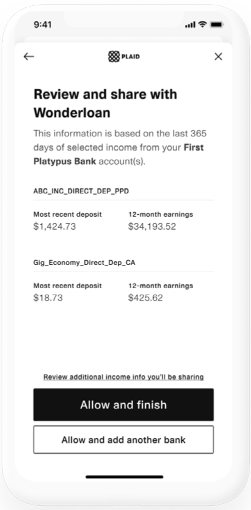
□ Gig_Economy_Direct_Dep_CA
Dec 10, 2021 $850

Only appears once in your account(s):

□ ACH DEPOSIT COMPANY: WINGS FOR PLAID LLC
Aug 20, 2021 $1029

□ ACH DEPOSIT COMPANY: PLATYPUS
May 2, 2021 $503

Continue


9:41

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Review and share with Wonderloan

This information is based on the last 365 days of selected income from your **First Platypus Bank** account(s).

ABC_INC_DIRECT_DEP_PPD

Most recent deposit	12-month earnings
$1,424.73	$34,193.52

Gig_Economy_Direct_Dep_CA

Most recent deposit	12-month earnings
$18.73	$425.62

Review additional income info you'll be sharing

Allow and finish

Allow and add another bank

With Bank Income, users can link multiple bank connections within the same Link session (see "Allow and add another bank" option on the "Review and share income" pane above).

Smartly route your users

Just like you, we want your users to convert. To do so, we want to put them in the flow where they're most likely to successfully verify their income. There are a few approaches we recommend to create a user friendly income solution:

1. **Prepare your users**
   Regardless of what flow you send a user through, let them know what you expect them to do before you launch Link. If you're asking them to upload a document, prepare them to do so. If you're asking them to verify using Payroll or Bank Income, make sure they know whether they're expected to connect their bank account or payroll provider.

2. **Leverage precheck**
   Our precheck endpoint response will indicate the confidence that your users will convert via the Payroll Income flow. If the response from this endpoint is low, consider sending the user through an alternate verification flow such as Document or Bank Income where they're more likely to convert.

3. **Dynamically route users**
   Leverage what you know about your user to send them to the flow where they have the best chance to convert. For example, if your user is a full-time, W2 employee, you may want to give them the option of verifying their income using the Payroll Income flow first. Meanwhile, if they do freelance/contract work, are self employed, or use a 1099, you may want to put them through the Bank Income flow.

Creating a link_token

To follow the recommendations above, it is important to launch Link with the correct experience for each user. Please see the below specifications needed for your /link/token/create call for Payroll, Document, and Bank Income.

Payroll Income: Products should be set to **`income_verification`**, income_source_types to **`payroll`** and flow_types should be set to **`digital`** to enable the digital Payroll flow.

Document Income: Products should be set to **`income_verification`**, income_source_types to **`payroll`** and flow_types should be set to **`document`** to enable the document upload flow.

Bank Income: Products should be set to **`income_verification`** and income_source_types set to **`bank`**.

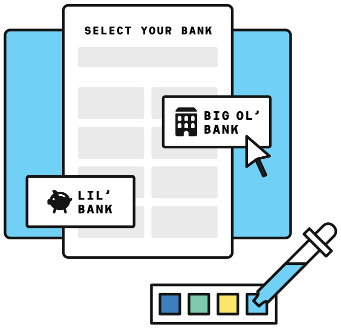
Note: Both “digital” and “document” can be passed on the /link/token/create call to enable a waterfall flow for Payroll and Document Income, as seen below.

Payroll & Document Income

```
{
 “client_id”: “{{client_id}}”,
 “secret”: “{{secret}}”,
 “user_token”: “user-token-123”
 “user”: {
   “client_user_id”: “client-user-id-123”,
},
 “products”: [
   “income_verification”
 ],
 “webhook”: “https://webhook.com”,
 “client_name”: “Name of App”,
 “country_codes”: [“US”],
 “language”: “en”,
 “income_verification”: {
   // Specifies the source of the income data: “bank” or
“payroll”
   “income_source_types”: [“payroll”],
   // Specifies the inputs for the payroll based income
flow(s)
   “payroll_income”: {
     // Specifies the type(s) of income verification:
     // - digital allows a user to connect to a payroll
     //   provider
     // - document allows a user to upload payroll documents
     //   e.g. a pay stub or W-2
     “flow_types”: [
       “digital”,
       “document”
    ]
   }
 }
}
```

Bank Income

```
{
 “client_id”: “{{client_id}}”,
 “secret”: “{{secret}}”,
 “user_token”: “user-token-123”
 “user”: {
   “client_user_id”: “client-user-id-123”,
 },
 “products”: [
   “income_verification”
 ],
 “webhook”: “https://webhook.com”,
 “client_name”: “Name of App”,
 “country_codes”: [“US”],
 “language”: “en”,
 “income_verification”: {
   // Specifies the source of the income data: “bank” or
“payroll”
   “income_source_types”: [“bank”],
   // Specifies inputs needed for bank based income flow
   “bank_income”: {
     “days_requested”: 365,
     “stated_income_sources”: [{
       “employer”: “abc”,
       “category”: “SALARY”,
       “pay_per_cycle”: 1000,
       “pay_annual”: 24000,
       “pay_type”: “NET”,
       “pay_frequency”: “SEMI_MONTHLY”
     } ]
   }
 }
}
```



Customize Link in dashboard

Plaid enables you to customize certain visual aspects of your app's interactions with Link via the customization pane in the dashboard. For the income verification use case, consider customizing Link in the following ways:

Customize the 'Consent' screen.

Select whether to feature a combination of your branding and Plaid's or just Plaid's. Also, review how your name is displayed on the screen.

Enable 'Select Account' screen for Bank Income.

This allows you to understand which account your user prefers to use for lending decisioning. We recommend configuring the Account Select pane to the "Enabled for multiple accounts" or "Enabled for all accounts" view behavior.

Configure the 'Document Upload' screen for Document Income.

Determine what documents you want to ask your users to upload. This will impact the copy users see when they upload a document.

Ensure OAuth coverage (for Bank Income)

This section is only applicable for Bank connections and can be ignored if you are implementing Payroll or Document Income only.

In order to ensure secure, stable, and consistent API access in the financial ecosystem, more and more Financial Institutions are moving to an OAuth flow. In order to access all OAuth institutions, there are a few steps you must consider to make sure your users can leverage OAuth:

1. Complete your Application profile in the dashboard. This is used in the OAuth flow.

2. Configure your redirect URI and add it to the developer Dashboard. Your redirect URI must be HTTPS. If you are using Link on IOS, you will need to configure an Apple App Association file and if you are using Android you'll need to define an Android package name.

3. Provide your redirect URI in the /link/token/create call. This will tell Plaid where to return control back to your application after a user completes the bank's OAuth flow.

4. Re-launch Link. Make sure to persist the user state and re-launch Link using the same Link token with the provided received redirect URI.

Utilize callbacks

Callbacks provide a way for us to let you know what happens in Link. We provide onSuccess, onExit, onResult, and onEvent callbacks. We highly recommend listening to all of these callbacks. Here are a couple ways you can use them for your income verification use case:

- Capture metadata from callbacks to aid in debugging and triaging issues, such as the link_session_id or the request_id.
- Build an onExit flow for users if they exit Link before successfully connecting. This can create a better user experience and help conversion.
- Leverage the institution section of the onSuccess callback to understand which payroll provider your user connected to to verify their income. If it is blank, the user uploaded a document to verify their income.
- If using Bank Income: Listen for the bankIncomeInsightsCompleted event from the onEvent callback, which will let you know that your user has successfully completed the entire Bank Income flow.
- If using Bank Income Multi-Link experience: Listen to the onResult callback to understand when your user has connected their account successfully. This is most important if you're planning to use that bank connection for other Plaid products, as we'll return the public_token here.

Additional notes

Leverage Plaid SDKs

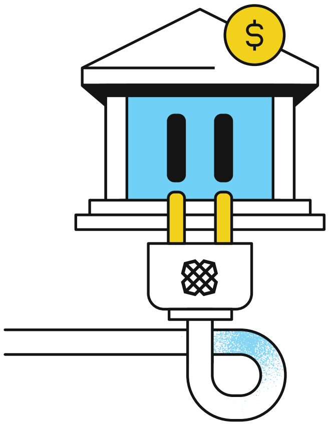
The Plaid Link SDK is a quick way to integrate your app with Link with updated features pushed regularly. We have SDK support for iOS, Android, and React Native integrations.

Follow our Link best practices

Our Link best practices guide contains a very helpful checklist for confirming your integration follows our guidelines. Keep in mind some of these may be more applicable when leveraging financial institution connections.

Prepare for Item deduplication

To avoid user confusion and prevent double-billing, make sure you have logic in place to check that you're not linking the same Item twice. This is more applicable for the Bank Income flow.



Back-end implementation

EFFECTIVELY LEVERAGE PLAID DATA

Handle Plaid tokens

Plaid uses several tokens to securely communicate over API and execute the data exchanges. The following diagram shows the basic token exchange structure:

Income + Document Payroll verification flow

1 Make a request to create a user_token via the /user/create endpoint and store the persistent token. The user_token will be needed to create link_tokens and make product requests.

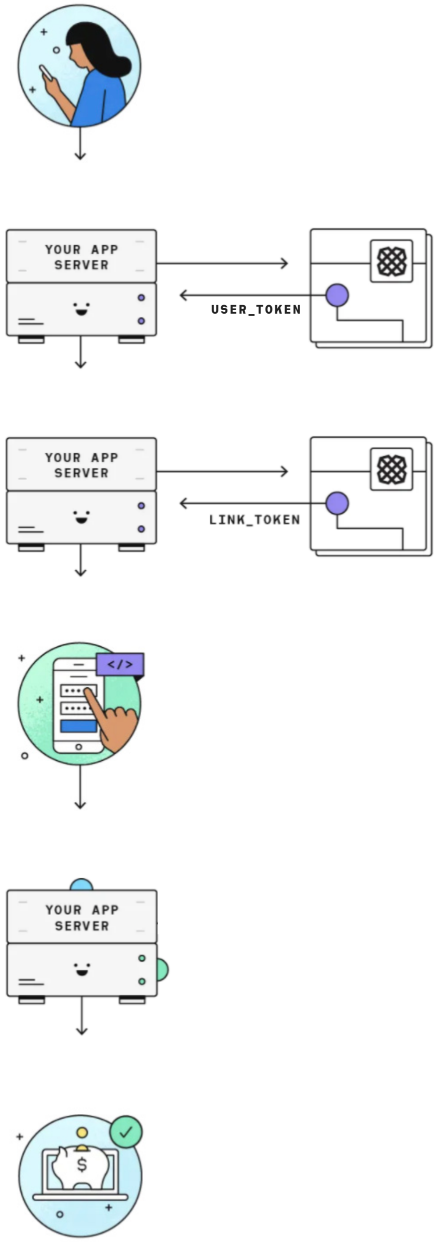
For Payroll Income, call the /credit/payroll_income/precheck endpoint for your user and provide any supplementary employer information. This will allow us to smart-route your user.

2 Make a request to create a link_token via the /link/token/create endpoint, be sure to pass the user_token in the request and set products = income_verification with income_source_types=payroll.

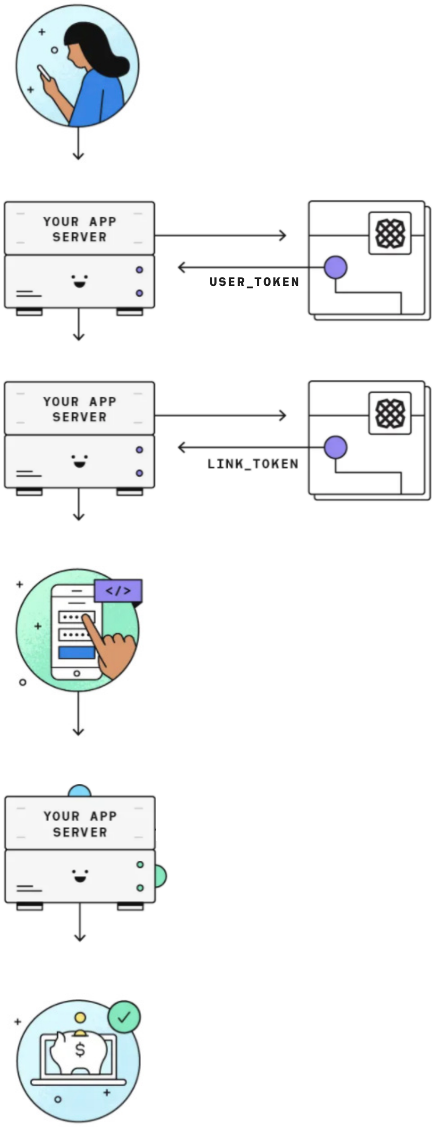
3 Use the link_token to open Link for your user. Listen for the onSuccess callback, which will let you know that your user has successfully connected their account or uploaded a document.

4 Await the income webhook informing you that the data is ready. This is especially important for the document flow.

5 Start calling product endpoints using the user_token.



Bank Income flow



1 Make a request to create a user_token via the /user/create endpoint and store the persistent token. The user_token will be needed to create link_tokens and make products requests.

2 Make a request to create a link_token via the /link/token/create endpoint, be sure to pass the user_token in the request and set products = income_verification with incocme_source_types = bank.

3 Use the link_token to open Link for your user. Listen for the BANK_INCOME_INSIGHTS_COMPLETED callback, which will let you know that your user has successfully connected their account.

To utilize additional products like Auth and Balance alongside Bank Income, please be sure to listen for the onSuccess callback for the public_token and exchange the public_token for an access_token.

4 Leverage the user_token to call the /credit/bank_income/get endpoint.

5 Utilize the data returned from the structured JSON.

Please note that a client_id, user_token and secret are required for all Income API requests. Access_tokens are required if you plan to use other products like Auth in addition to the Income products.

Creating a user via /user/create

This endpoint is utilized for creating a user_token, which is a required field for the /link/token/create calls and retrieval endpoints for all Income products.
The credit endpoints will then allow you to view the underlying Items associated with the user.

RESPONSE FIELD(S)

- **`user_token`** and **`user_id`**
- Save in a secure datastore, as it's used to access income data and identify webhooks.

REQUEST FIELD(S)

- The **`client_user_id`** is a required field and should be unique for each **`/user/create`** call.
- Other optional fields that can be passed on the **`/user/create`** call include information about the user that may offer enhanced functionality when those fields are passed. These fields include the user's **`given_name, email_address, home_address,`** etc.

Improve conversion via /credit/payroll_income/precheck

This endpoint is used to streamline the account linking process. By providing either the employer name, address, or existing Plaid access_tokens for the user, Plaid will attempt to identify the payroll provider and drop the user directly onto the login page.

RESPONSE FIELD(S)

- The confidence that Plaid can support the user in the Payroll Income flow instead of requiring a manual pay stub upload. One of the following:

  "HIGH"
  It is very likely that this user can use the Payroll Income flow.

  "LOW"
  It is unlikely that this user can use the Payroll Income flow.

  "UNKNOWN"
  It was not possible to determine if the user is supportable with the information passed.

  Possible values: HIGH, LOW, UNKNOWN

REQUEST FIELD(S)

- Details about the user's employer should be passed here if it is known as well as **`access_tokens`** (for previously linked accounts). This would include details like (employer) **`name / address`**, (user) **`tax_id`**, etc.

Retrieve Payroll & Document Income data via /credit/payroll_income/get

This endpoint returns data either retrieved from the payroll provider or as uploaded by the end user through the Document flow.

RESPONSE FIELD(S)

- This endpoint returns granular pay stub, w2 and taxform information for all accounts connected by the user. This will give you key data such as **gross_earnings, net_pay, total** deductions, pay period **start_date** and **end_date, distribution_breakdown** and tax information.

REQUEST FIELD(S)

- **user_token**

Retrieve Bank Income data via /credit/bank_income/get

This endpoint returns data retrieved from the Bank Income flow.

RESPONSE FIELD(S)

- This endpoint returns Bank Income insights with the data from the financial institution where the user receives income.
- The owners object includes identity information for the bank account connected, such as name, phone, email, and address.
- The **bank_income_summary** object includes the depository income summary by total and by income source that was received during a specified time period. Data fields include: **total_amount** (of income across all income sources), **historical_summary**, and more.
- The **bank_income_sources** object which breaks out recurring and non-recurring depository income sources. Data fields for a specific income source include: **income_description, income_category, start_date, end_date, pay_frequency, total_amount** (total income for the given date range), **historical_summary**, and more.

REQUEST FIELD(S)

- Along with the **user_token,** you can choose to also pass **count**, which is the number of Bank Income reports you'd like to be fetched.

Establish webhooks

Plaid uses webhooks to send programmatic updates about your user's Items. Webhooks are configured via the webhook parameter of /link/token/create when adding an Item. The URL must be in the standard format of http(s)://(www.)domain.com/. For your use case, here are a couple things we recommend you use webhooks for:

FOR PAYROLL & DOCUMENT INCOME

- Listen for the VERIFICATION_STATUS_PROCESSING_COMPLETE webhook notification for Document Income to let you know when the data is ready to be accessed.
- Data for the Payroll Income flow should be ready immediately after successful completion of the Link session. In rare cases, the data may not be available immediately. You will see an error describing why the data is not available when you call the endpoint and we will inform you via a webhook when the data is ready to be accessed.

FOR BANK INCOME:

- The data will be ready from the Bank Income connection immediately when the user completes Link so there is no need to wait for a webhook to call the /credit/bank_income/get endpoint.
- When a user adds a new account you will receive a NEW_ACCOUNTS_AVAILABLE webhook. A user can select or deselect accounts through Link when you implement Account Select v2 in Update Mode.
- Listen for when the Item has entered an Error state. This can be used as an indication to put the user through Link in Update Mode to return the Item to a healthy state.

plaid.com

Plaid powers the digital finance solutions that enable millions of people to live healthier financial lives. Trusted by 6,000+ of the world's leading companies and connected to 12,000+ financial institutions across the US, Canada, UK, and Europe, Plaid's mission is to unlock financial freedom for everyone.

Ready to build the future of digital finance? Reach out to our sales team at info@plaid.com.