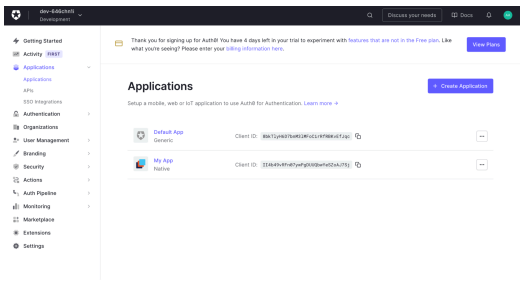
OAuth School

Authorization Code Flow for Single-Page Apps

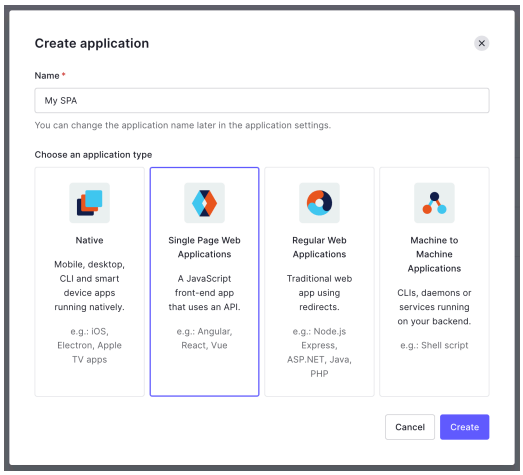
The goal of this exercise is to get an access token using the authorization code flow and PKCE as a public client. This exercise will walk you through the flow manually without writing any code. You are of course free to write code to do this instead if you'd like, but the instructions here will show you the step by step process of what's happening under the hood.

> You can reuse the client you created during the Getting Started exercise if you'd like, you don't need to make a new one here if you don't want to. Just make sure to edit the redirect URL as described below.

From the side menu of your Auth0 dashboard, click on **Applications** and choose **Applications**.

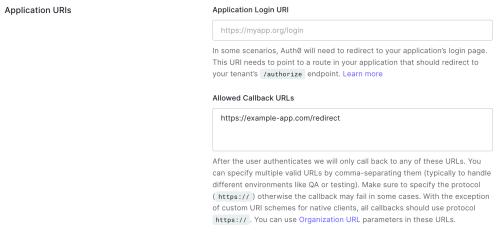


Click **Create App Integration**, then in the popup dialog, give it a name and choose **Single Page Web Applications** as the application type.



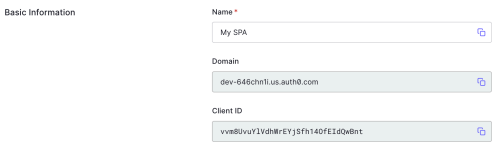
After creating the app, click **Settings** so that we can add a Sign-in redirect URL. This is where the OAuth server will send the user back to after they log in. For this exercise, we'll use a placeholder URL that will help us out.

Under Allowed Callback URLs, add `https://example-app.com/redirect` as the redirect URI for your application.



You can leave all the other values empty or with their default values. Scroll to the bottom and click **Save Changes**.

Back at the top of the Settings screen you'll see the application's client ID needed to complete the OAuth flow.



With your client ID in hand, you're ready to start the flow! To do that, you'll need to use the authorization server's authorization endpoint that you found in the Getting Started exercise. Look up the URL from your notes or copy it from the Introduction exercise.

Before you can create the complete authorization URL, you need to create the PKCE Code Verifier. Generate a random string between 43-

128 characters long. You can do this on your own, or use the button below to generate one.

Generate Random String

Code Verifier	plaintext random string

Save the Code Verifier and keep it secret, you won't need that until the end.

Next, you need to create the **Code Challenge**, which is the Base64-URL-encoded SHA256 hash of the random string you generated. You can write code to do this yourself, or you can paste your random string into the field above, and click the **Calculate Hash** button below.

Calculate Hash

Code Challenge	base64-url-encoded SHA256 hash of the code ver

You are ready to build the URL to send the user to go log in. You'll start with the authorization endpoint, and add the appropriate query string parameters describing your request.

Fill in the placeholder values with your own values. (Make sure to replace the curly brackets, those are just to indicate placeholder values.)

Authorization Request

```
https://xxxxxx.us.auth0.com/authorize?
  response_type=code&
  client_id={YOUR_CLIENT_ID}&
  state={RANDOM_STRING}&
  redirect_uri=https://example-
app.com/redirect&
  code_challenge={YOUR_CODE_CHALLENGE}&
  code_challenge_method=S256
```

Create the initial URL for the authorization request and paste it above. Once it's correct, a "Log In" button with that URL will appear below

Check Your URL

Token Response

```
{
  "token_type": "Bearer",
  ...
}
```

Use the authorization code flow to get an access token, then paste the entire token response JSON here to check your work

Check Your Response