Okta integration guide: Google Cloud endpoints

November, 2017

Overview

Google Cloud Endpoints (GCE) integrates with Okta for user authentication via OAuth. You can set up Okta as a token (jwt) provider for your API, and GCE will enforce token validation in front of your API.

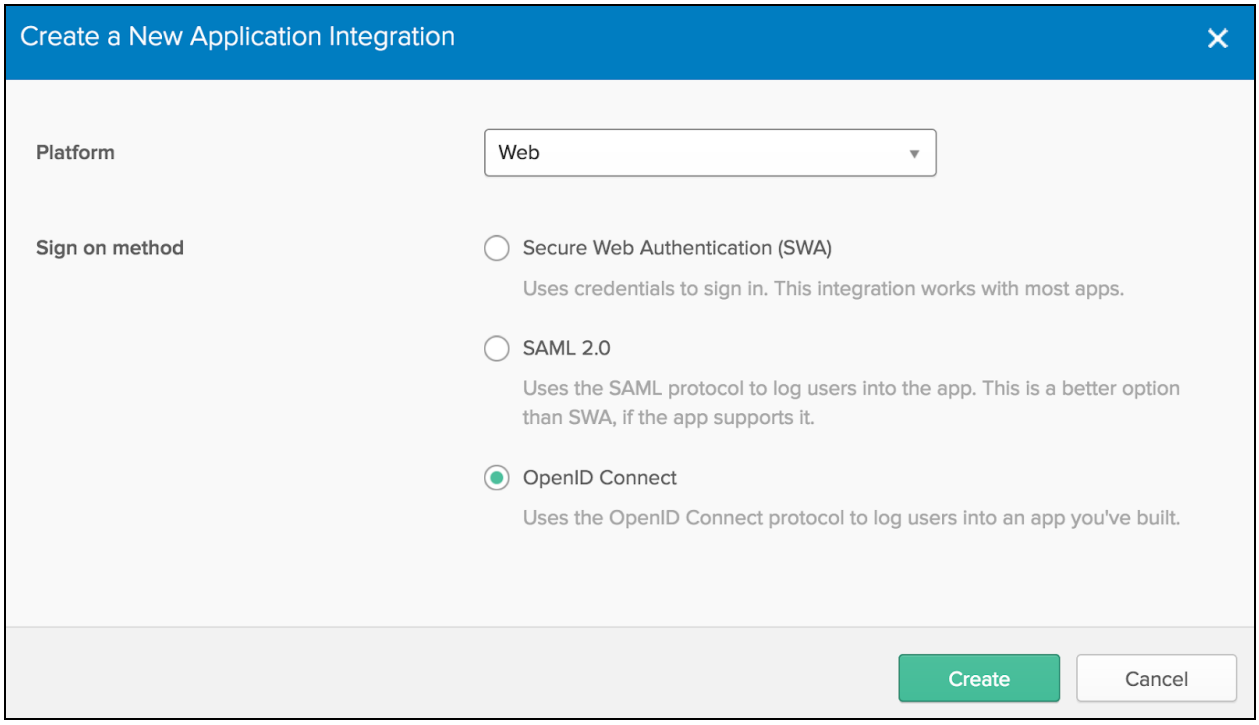
Prerequisites

- An API running on GCE. If you don't yet have one up and running, you can follow the instructions here to set up a sample API:
    - https://cloud.google.com/endpoints/docs/openapi/get-started-app-engine
        - Before proceeding, you should be able to get a "hello world" response from the API deployed on GCE
    - This setup guide will walk you through the process of setting up Okta as an authentication provider for GCE.
    - The following Google page is also a helpful reference:
        - https://cloud.google.com/endpoints/docs/openapi/authenticating-users
            - This page contains more detail about the token validation process
- An Okta tenant
    - Set up an OIDC client (described below)
- A web app/server
    - An application that can accept a token coming back from Okta

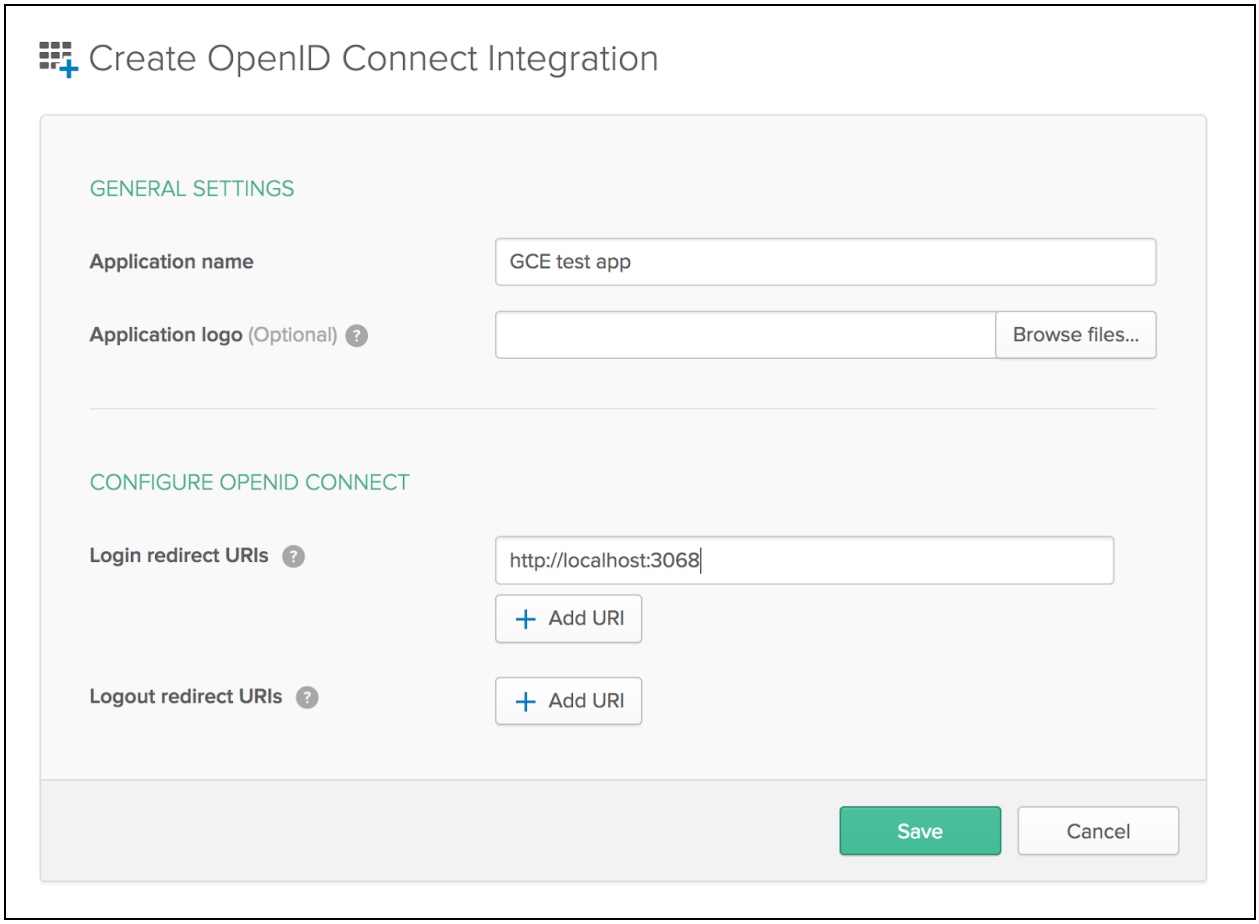
Setup

Set up an OIDC application in your Okta tenant

1. Set up an OIDC client
    a. For Okta Enterprise edition: Applications->Add Application->Create New App->OpenID Connect



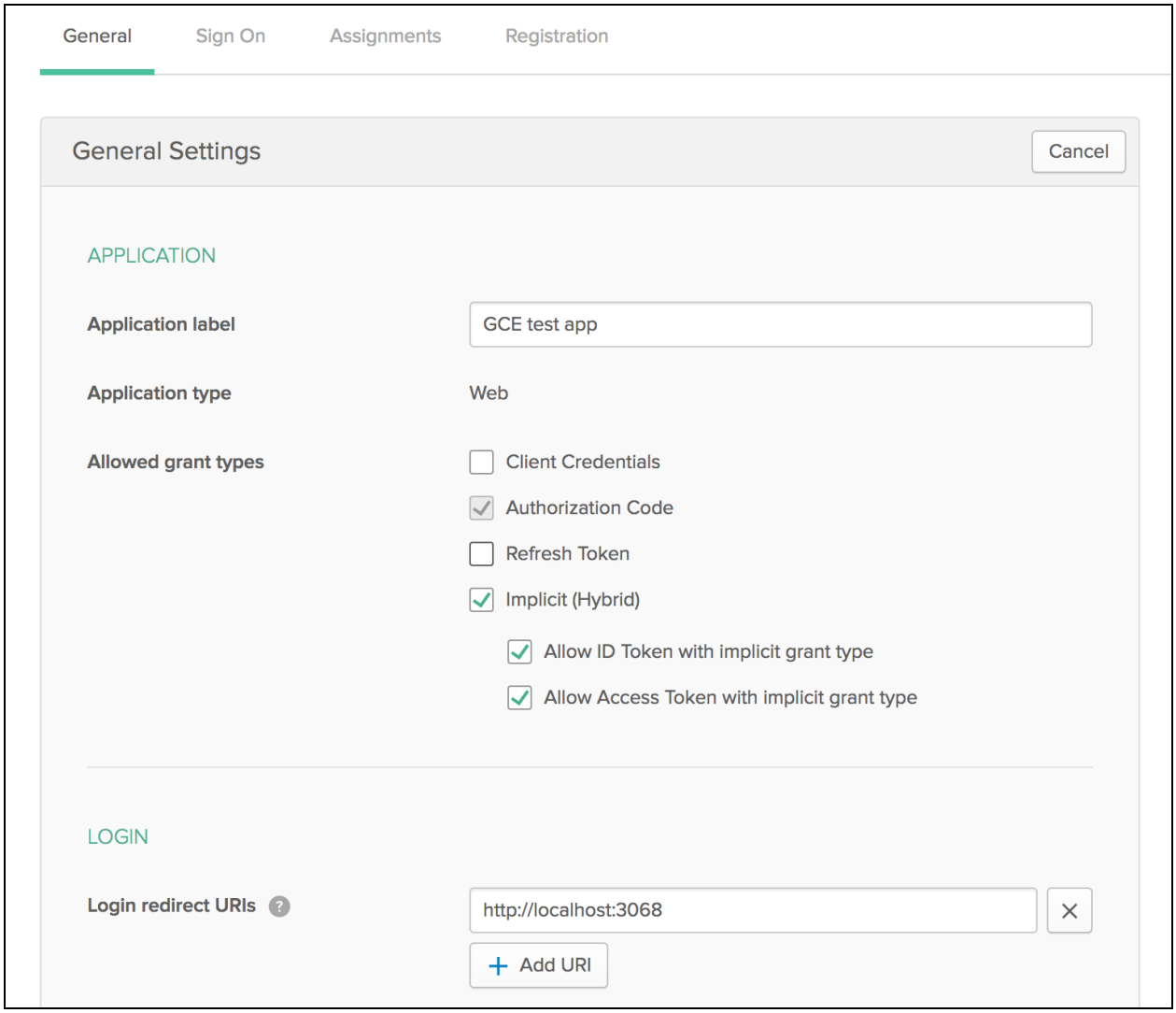
Click “create”



The Login redirect URI should be an application hosted on a web server that can accept an incoming access token from Okta. A barebones page running on localhost is fine.

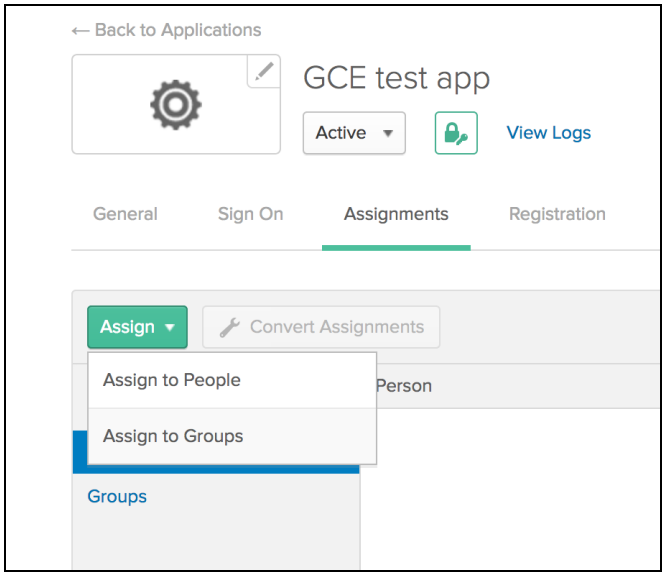
Click “save” and you will have your client_id and client_secret.

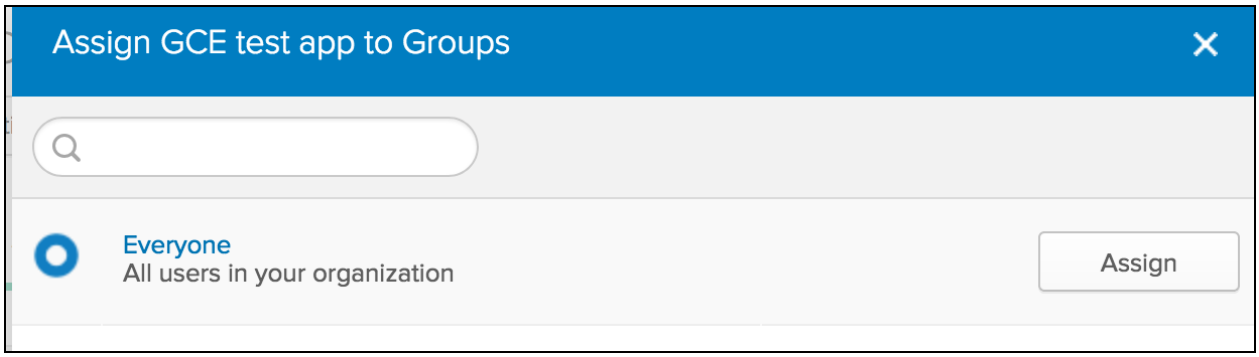
On the General Settings screen, check the box for Implicit grant type, and check the boxes for allowing both the id token and the access token.



Save the application. Copy your client id to a convenient place.

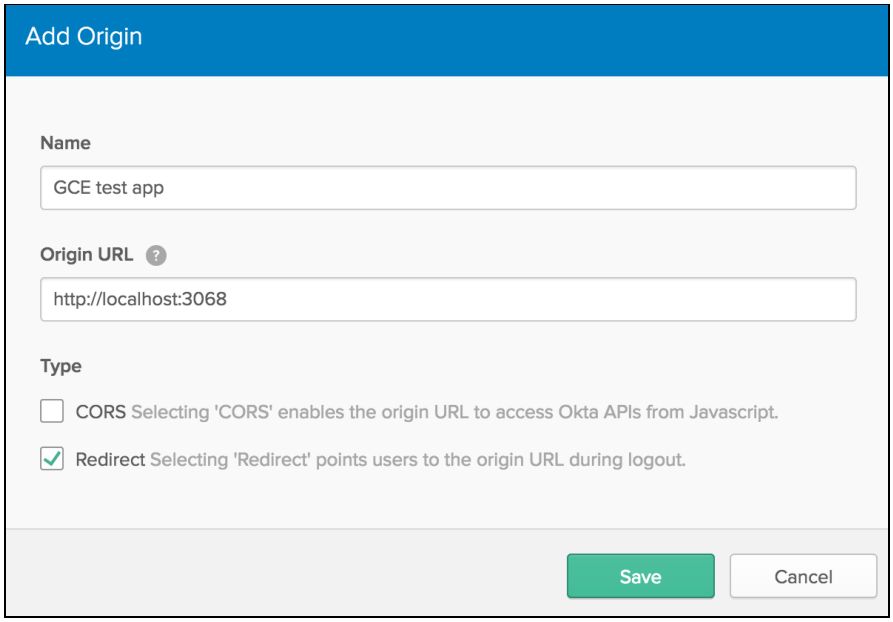
Click on the Assignments tab to assign this app to users. For PoC purposes, it is easiest to assign the app to the “everyone” group.





Now that you have assigned the app to the Everyone group, add the redirect uri to the list of trusted origins for this tenant:

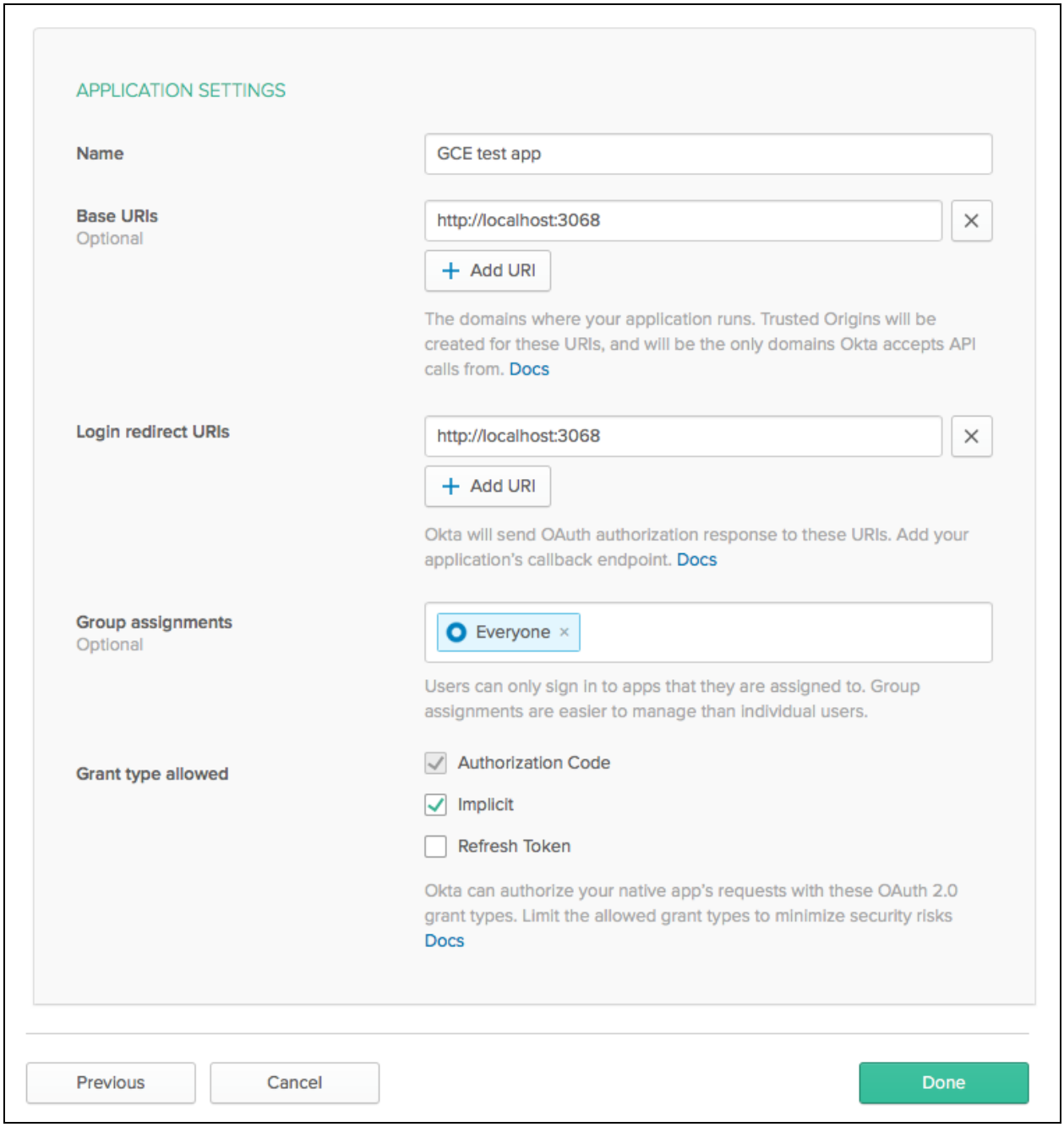
Security->API->Trusted Origins->Add Origin



This completes the setup for your Okta tenant.

Skip to the next step.

b. For Okta Developer edition: Applications->Add Application->Web->Next



Click “done” to finish the OIDC client setup.

You will now have your client_id. Copy your client id to a convenient place.

Set up GCE to accept JSON web tokens (JWT) from Okta

To add Okta to GCE API, you need to edit the OpenAPI configuration file for your API. In Google's sample application for node.js, for example, this file is:

nodejs-docs-samples/endpoints/getting-started/openapi-appengine.yaml

By default, there is an entry for "api_key" in the security section of the OpenAPI configuration file:

```
security:
- api_key: []
```

Add Okta to this section to allow either an Okta access token or a Google API key for all API endpoints:

```
security:
- api_key: []
- okta_jwt: []
```

Add the definition for okta_jwt to the securityDefinitions section:

```
securityDefinitions:
  okta_jwt:
    authorizationUrl: ""
    flow: "implicit"
    type: "oauth2"
    x-google-issuer: "https://partnerpoc.oktapreview.com"
    x-google-jwks_uri:
"https://partnerpoc.oktapreview.com/oauth2/v1/keys"
    x-google-audiences: "0oac7c9f6goG9x3FY0h7"
```

As indicated, you need to update only three values:

x-google-issuer: this is your okta tenant name
x-google-jwks_uri: substitute your okta tenant name in this url
x-google-audiences: this is the client_id from the client you created in your Okta tenant

That's it. Save the OpenAPI configuration file and deploy a new version your API.

Getting an access token from Okta

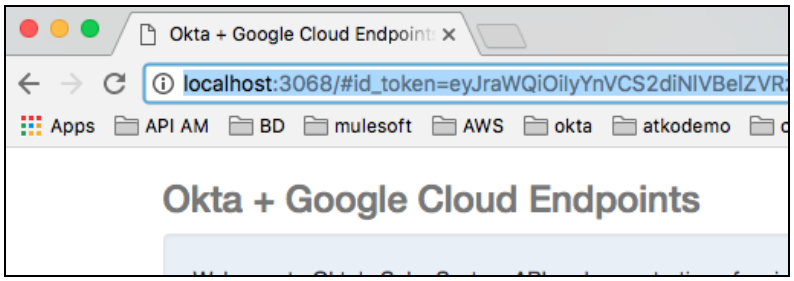
Now you can get an access token from Okta to test against your GC endpoint. First, make sure you have an active user in your Okta tenant, and that this user has been assigned to the OIDC client you created earlier. (If you assigned the OIDC app to the Everyone group you are fine.)

Use the following URL as a template, substituting your own values:

```
https://partnerpoc.oktapreview.com/oauth2/v1/authorize?response_type=id_token&client_id=0oac7c9f6goG9x3FY0h7&redirect_uri=http://localhost:3068&state=someState&nonce=someNonce&prompt=login&scope=openid
```

Note: in a production environment, you should provide valid values for *state* and *nonce*.

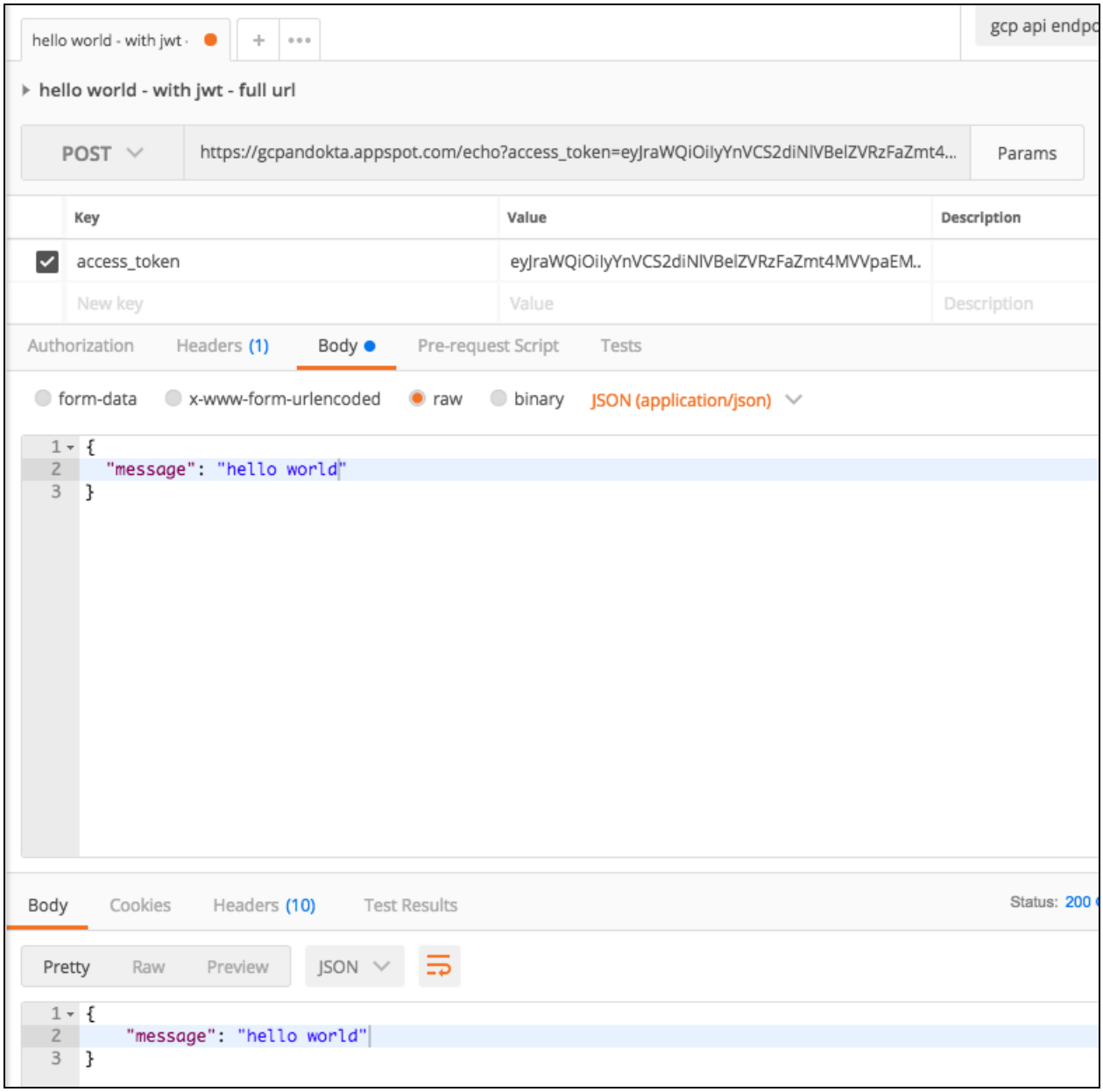
When you successfully authenticate, you will be redirected to the redirect_uri and an access token will be appended to the URL:



Copy the id_token from the URL.

Access the protected GC endpoint

Now that you have an access token, you can try to access your protected Google Cloud endpoint. Just append the access token to the url of your API endpoint and POST to the url. If you are using the example GCE application, post a message in the body and it will be echoed back:



Note: for production, Okta and Google recommend including the access token in the authorization header of the HTTP request.

That completes the process of setting up Okta as an access token provider for Google Cloud Endpoints.