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1. Heroku

You will host your own dedicated server and database on Heroku.

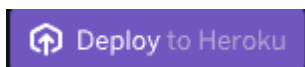
1. Goto [Herku](#) and signup for a free account: [Heroku | Sign up](#)
 - a. Students (enrolled in college, middle school, or high school)
 - i. Make your GitHub account a student account (free) if it is not one already: https://education.github.com/discount_requests/pack_application
 - ii. Click "Get the student offer" button on Heroku's page and follow the directions: [Heroku is for Students](#)
2. Download Heroku CLI on your personal computer. The instructions for your respective OS can be found here: [The Heroku CLI](#)
 - a. Technically, Heroku allows you to view logs and run commands from your Heroku Dashboard, but you are installing the CLI on your computer just in case you need to do more with your configuration

2. Server and Dashboard - Backend as a Service (BaaS)

Your BaaS is based on [nodejs](#), specifically it's a [parse-server](#).

2.1 Deploying your own Parse-HIPAA Server on Heroku



1. Goto the [parse-hipaa github repo](#) and click the button (if this doesn't work in Safari, try another browser):



2. You should see a screen that looks like the following:

Salesforce Platform

HEROKU


 Deploy your own
[Parse HIPAA Server Example](#)
 An example Parse API server using the parse-server and CareKit
 [netreconlab/parse-hipaa#main](#)

App name

App owner

Choose a region

[Add to pipeline...](#)

3. Create an **App name** of your choice. Note, this will be referred to as **YOUR_APP_NAME** for the rest of this document
4. Under the **Config vars** section, set **NEW_RELIC_APP_NAME** to reflect **YOUR_APP_NAME**
5. Now you will create a username and password to log into your dashboard. This should be something you plan to remember or save to your Keychain
 - a. Set your username in **PARSE_DASHBOARD_USERNAMES**
 - b. Set your password in **PARSE_DASHBOARD_USER_PASSWORDS**
 - c. Note that you should be entering the hash of your password (see notes on the environment variable). Type your password into [this site](#) to get a hash

- You should leave all other **Config vars** as they are... Scroll to the bottom of the page and click on **Deploy app**

PARSE_VERBOSE **Required**

Enable verbose output on the server.

PORT **Required**

Port for parse-hipaa, default is 1337.

Deploy app

- This will take a couple of minutes to deploy, but when it's finished, you should see all green checkmarks with the message, "Your app was successfully deployed". Click **Manage App**

Deploy app

Create app



Configure environment



Build app [Show build log](#)



Run scripts & scale dynos



Deploy to Heroku



Your app was successfully deployed.

Manage App

 View

8. You should now be on your apps main screen:

The screenshot shows the Heroku dashboard for the 'parse-hipaa' app. At the top, there's a search bar and navigation tabs for Overview, Resources, Deploy, Metrics, Activity, Access, and Settings. Below that, there's a section for 'Installed add-ons' with a total cost of \$0.00/month. The add-ons listed are Heroku Postgres (Hobby Dev), Heroku Redis (Hobby Dev), New Relic APM (Wayne), Papertrail (Choklad), and Heroku Scheduler (Standard). To the right, the 'Latest activity' section shows recent events, including setting configuration variables, deploying the web component, and a successful build.

9. Click on **Papertrail** under *Installed add-ons*. Accept the user agreement and you should now be able to view your logs

The screenshot shows the Papertrail dashboard with a list of log events. The events are timestamped and include details such as the method, path, host, request ID, and status. Some events are highlighted in blue, indicating errors or warnings. The events include information about HTTP requests, New Relic agent state changes, and application errors.

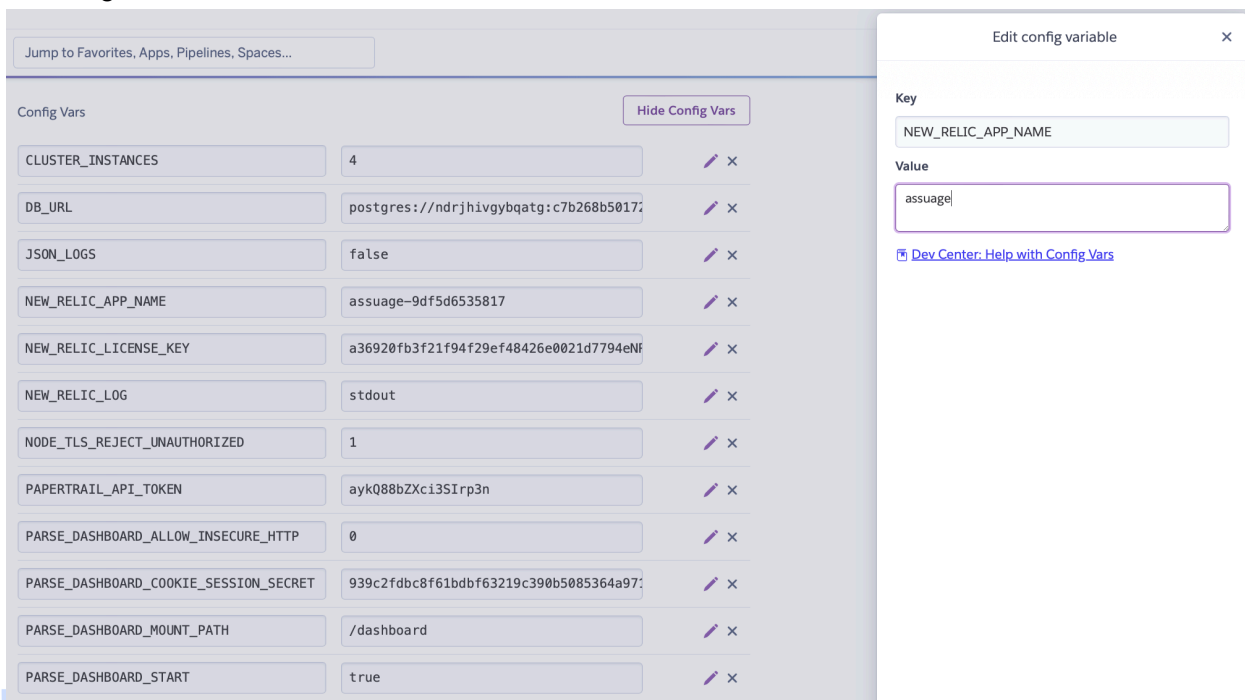
10. Go back to your Heroku Dashboard and goto **Settings**. Scan the page for the **Domains** section and you should see the link to access your parse-hipaa server:

The screenshot shows the Heroku Settings page, specifically the Domains section. It displays the current domain 'https://assuage-9df5d6535817.herokuapp.com/' and an 'Add domain' button. Below the button is a search bar for domains and a note that custom domains will appear here.

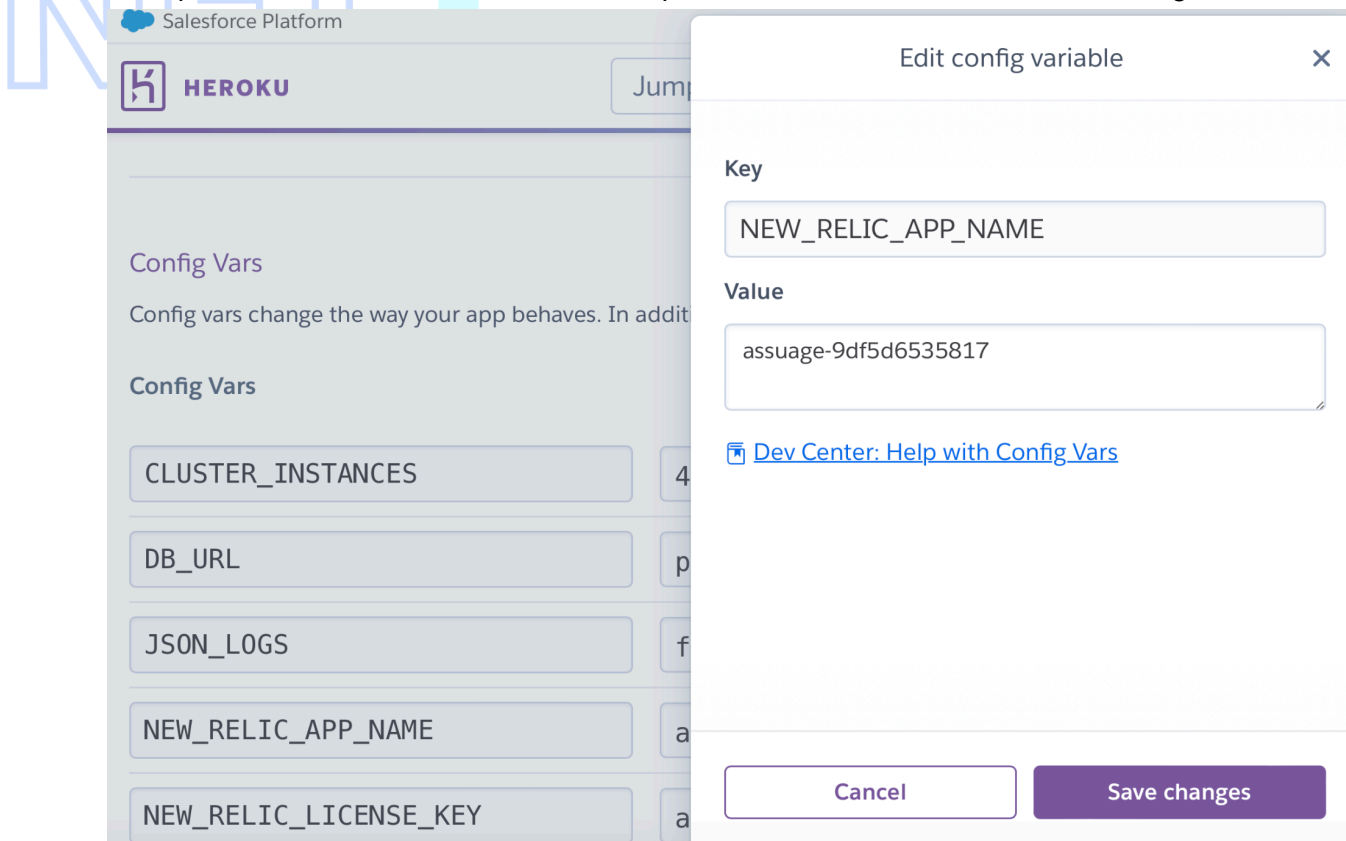
11. Copy the name of your app and the numbers & letters following it. For example, from the image above, I would copy "assuage-9df5d6535817".

12. Then go up to **NEW_RELIC_APP_NAME** in Config Vars. Click the pencil icon to edit this variable. Currently, the value is set to "assuage". The screen should look like the

following:



13. Then paste into the value box. In this example, the screen will look like the following:



14. Then select save changes. In this case, the `NEW_RELIC_APP_NAME` will now look like this:

Config Vars

Config vars change the way your app behaves. In addition to creating your own, some add-ons come with their own.

Config Vars		Hide Config Vars
CLUSTER_INSTANCES	4	✕
DB_URL	postgres://ndrjhivgybqatg:c7b268b5017...	✕
JSON_LOGS	false	✕
NEW_RELIC_APP_NAME	assuage-9df5d6535817	✕

15. Go down to the **Domains** section again and you should see the link to access your parse-hipaa server:

Domains

You can add custom domains to any Heroku app, then visit [Configuring DNS](#) to setup your DNS target.

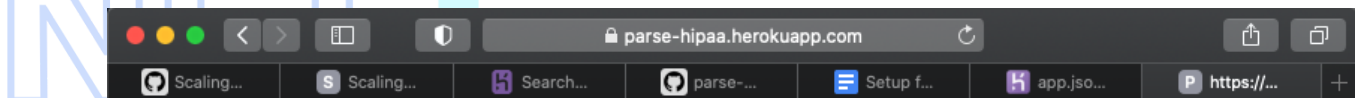
Your app can be found at <https://assuage-9df5d6535817.herokuapp.com/> Add domain

Filter domains

Custom domains will appear here

Custom domains allow you to access your app via one or more non-Heroku domain names (for example, `www.yourcustomdomain.com`)

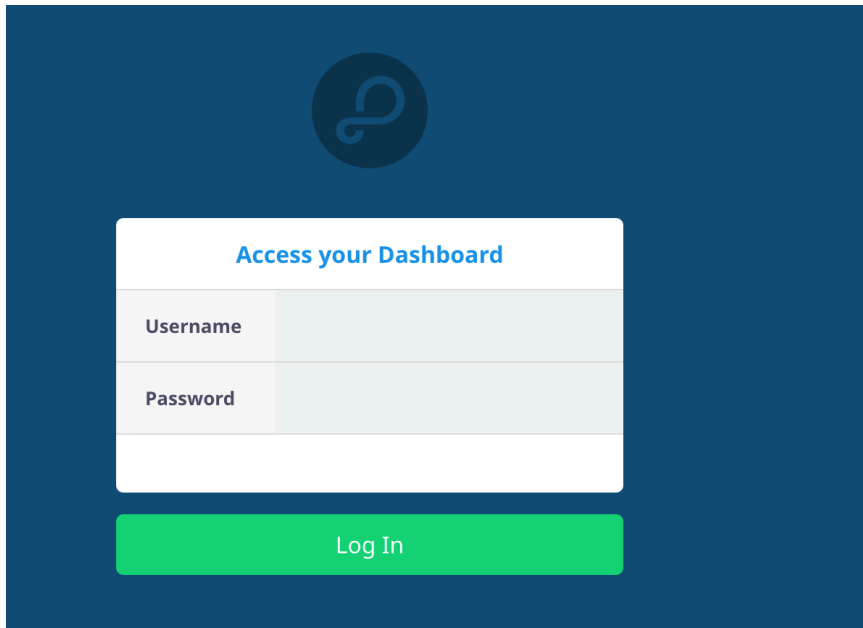
16. Click the link and if your server is working you will see the following:



I dream of being a website. Please star the parse-hipaa repo on GitHub!

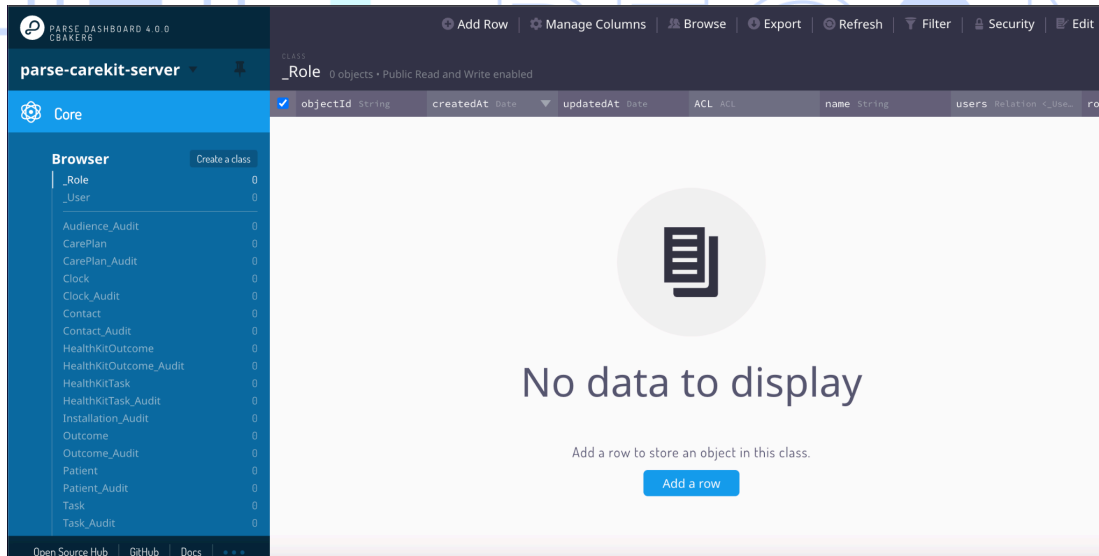
17. Edit the URL in your browser by appending `/dashboard`. Your new url should look like the follow, ["https://YOUR_APP_NAME.herokuapp.com/dashboard"](https://YOUR_APP_NAME.herokuapp.com/dashboard). If your dashboard is

working properly you will see the following:



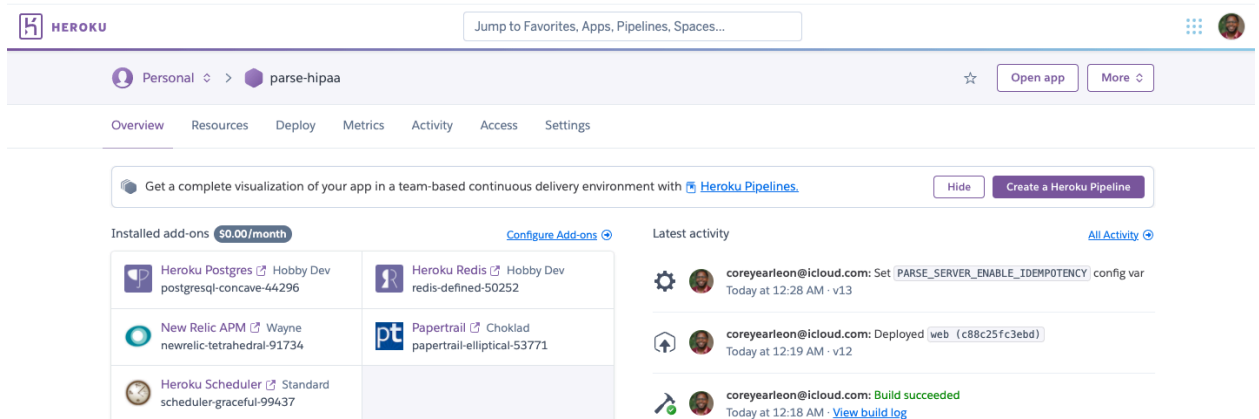
18. Use the values entered for `PARSE_DASHBOARD_USERNAME` and the “original” (not the hash) of `PARSE_DASHBOARD_USER_PASSWORD` to login

19. If your dashboard is correctly configured to connect to your server, you will see the following:



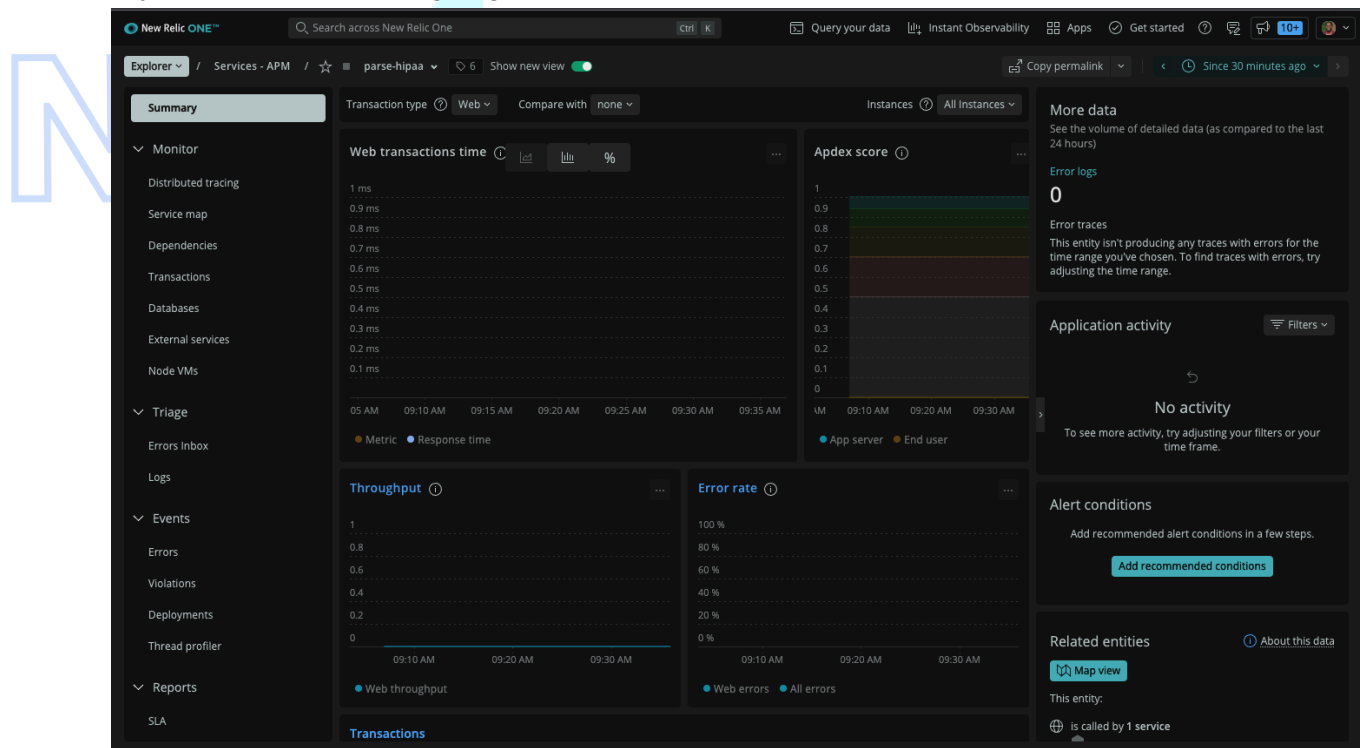
2.2 Monitor Your Servers Performance

1. Under *Installed add-ons*, you will see that your server comes with [New Relic APM](#)



The screenshot shows the Heroku dashboard for the 'parse-hipaa' app. The 'Installed add-ons' section is highlighted, showing a list of add-ons including Heroku Postgres, Heroku Redis, New Relic APM, Papertrail, and Heroku Scheduler. The New Relic APM add-on is specifically mentioned in the text.

2. You can click the New Relic APM link in the Heroku Dashboard and it will automatically create an account (will send you an email about your new account) along with taking you to your servers monitoring page:



The screenshot shows the New Relic ONE monitoring dashboard for the 'parse-hipaa' app. The dashboard displays various performance metrics for the 'parse-hipaa' app, including Web transactions time, Apdex score, Throughput, and Error rate. The 'Web transactions time' chart shows a steady decline from 1 ms to 0.1 ms. The 'Apdex score' chart shows a score of 1.0. The 'Throughput' chart shows a peak of 1.0. The 'Error rate' chart shows a rate of 0%.

3. You can use New Relic in the future to monitor the performance of your Parse HIPAA server

3. Database (PostgreSQL)

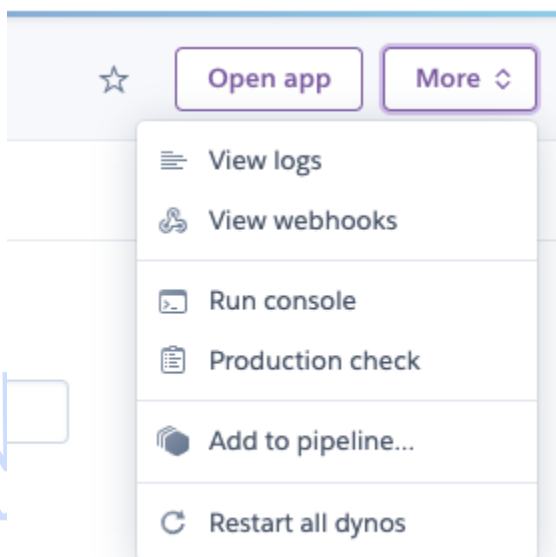
Your database was created during the aforementioned deployment process of your Heroku based parse-hipaa server. Your database is [PostgreSQL](#) 13+ and can be scaled when needed

using Heroku's services. The following will take you through the proper steps to configure your database using some one-time pre-installed scripts on your parse-hipaa server:

3.1 Indexing your Database (ParseCareKit based apps only)

To keep your database running efficiently, you should run a script to add a number of useful indexes to your database:

1. Back on dashboard.heroku.com, look on the top right corner for button **More** that's next to the *Open app* button. Click **More** and then click **Run console**



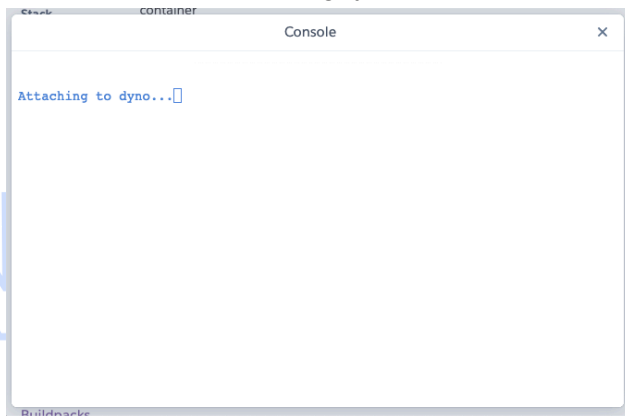
2. You should now see a screen at the bottom of your browser that is similar to a command terminal



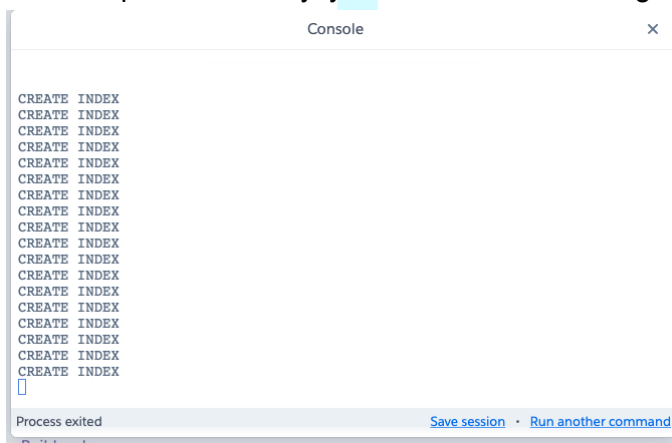
3. Paste the following command in the *bash* box, `./scripts/setup-parse-index.sh` and then press the **Run** button



4. While the script is running, you will see the following



5. If the script ran correctly, you will see the following

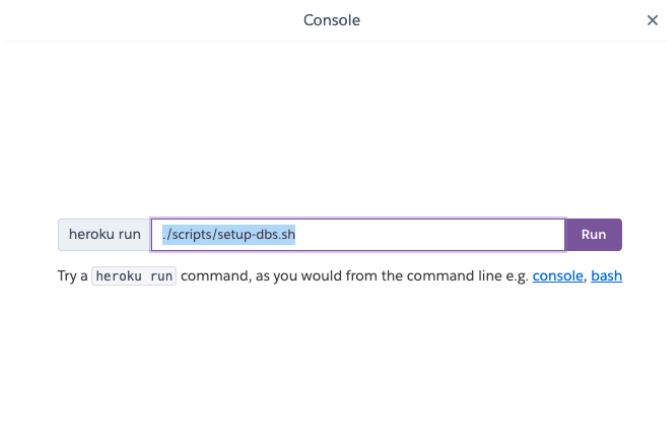


3.2 Setting up [Postgis](#) Extensions for Geolocation Queries

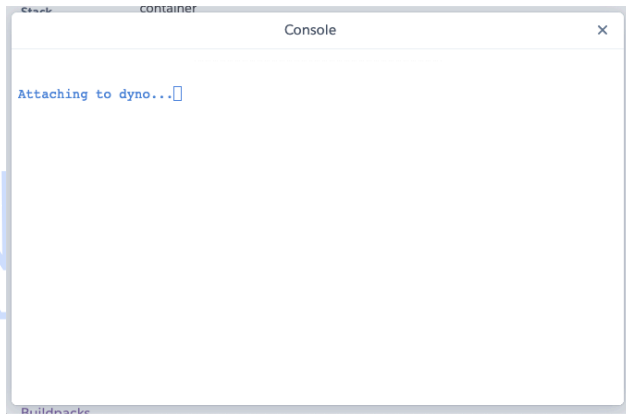
CS485G students and those running Heroku Free Services should **SKIP** this step as it adds 5k+ rows to your database and the free services only offers 10k rows

1. Assuming you still have the Console open from the previous step, click the **Run another command** link on the bottom right of the *Console* window

- Paste the following command in the *bash* box, “./scripts/setup-dbs.sh” and then press the **Run** button



- While the script is running, you will see the following



- If the script ran correctly, you will see the following

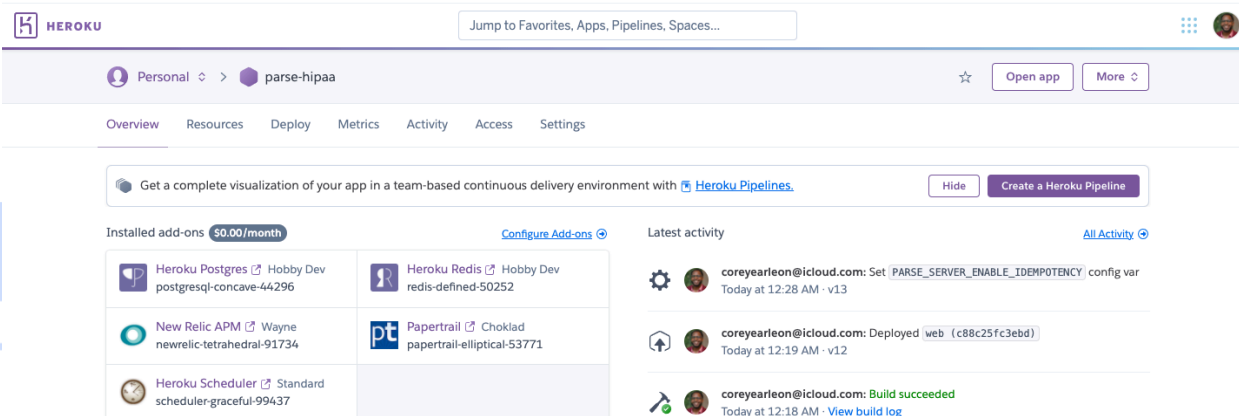


4. Setup Scheduler and Idempotency on Heroku

Idempotency is used to dedup identical requests made due to network intermittency. For example, if a user was being created for the first time over a bad network connection, it's possible for that user to be created twice when idempotency is not used. This is because the request to create the user may be sent/received twice due to bad network connectivity. Your server and apps are able to remedy the aforementioned issues, but you need to enable some additional configurations:

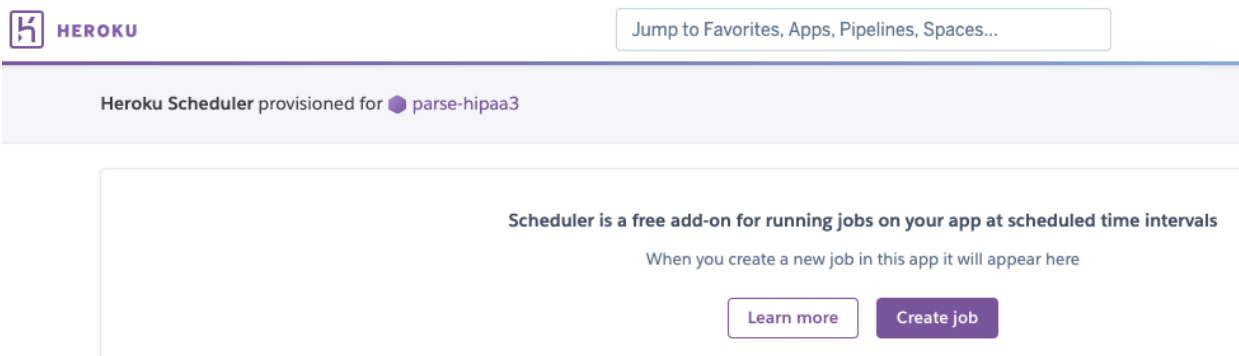
4.1 Heroku Scheduler

1. In your Heroku Dashboard of your app, go to *Overview->Installed add-ons* and click **Heroku Scheduler**



The screenshot shows the Heroku dashboard for an application named 'parse-hipaa'. The 'Installed add-ons' section is visible, showing several add-ons including Heroku Postgres, Heroku Redis, New Relic APM, Papertrail, and Heroku Scheduler. The Heroku Scheduler add-on is highlighted with a blue box. The 'Latest activity' section shows recent events, including a configuration change and a successful build.

2. Then click the **Create job** button




The screenshot shows the Heroku Scheduler provisioning page. The page displays the text 'Heroku Scheduler provisioned for parse-hipaa3'. Below this, there is a message: 'Scheduler is a free add-on for running jobs on your app at scheduled time intervals. When you create a new job in this app it will appear here'. There are two buttons: 'Learn more' and 'Create job'.

3. In the *Job Editor* window, under *Schedule* choose **Every day at...** in the drop down menu. You can leave the default time, or select a different time if you like.
 - a. Scheduling "everyday" is okay while your app is in the *development* as you are using Heroku's free service and want to conserve your dyno minutes, but as your

app moves to *production* and app users increase you should move towards,

Job Editor

×

 Schedule

Choose an interval and run this job on a schedule.

Every day at...

12:00 AM


UTC

Every 10 minutes

- Under *Run Command*, enter the following command, `./scripts/parse_idempotency_delete_expired_records.sh`

Job Editor

×


 Schedule

Choose an interval and run this job on a schedule.

Every day at...

12:00 AM

UTC

 Run Command


Enter a command and select a dyno size to use for this job.

\$./scripts/parse_idempotency_delete_expired_records.sh

F Free

RECON
AB

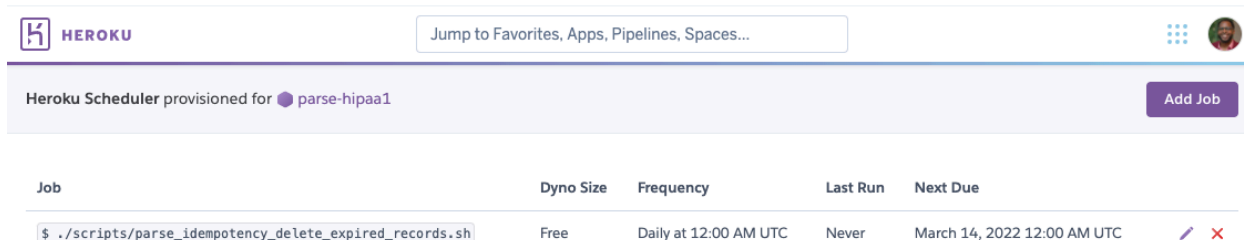
- Then press the **Save Job** button at the bottom

 Jobs run within a time window as close to the schedule as possible, and incur dyno costs (prorated to the second). Visit [Heroku Dev Center](#) to learn more.

Cancel

Save Job

- The new scheduled job should appear now and will run automatically at the scheduled time



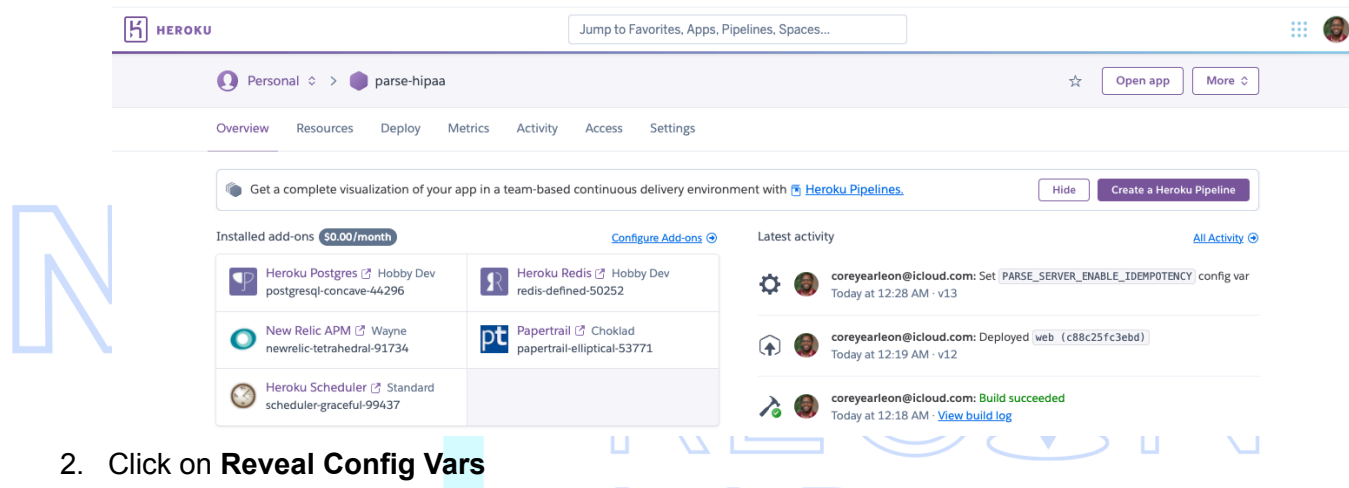
HEROKU Jump to Favorites, Apps, Pipelines, Spaces...

Heroku Scheduler provisioned for parse-hipaa1 [Add Job](#)

Job	Dyno Size	Frequency	Last Run	Next Due
<code>./scripts/parse_idempotency_delete_expired_records.sh</code>	Free	Daily at 12:00 AM UTC	Never	March 14, 2022 12:00 AM UTC

4.2 Enabling Idempotency on parse-hipaa

- Go back to the previous window of your Heroku Dashboard and click on **Settings**



HEROKU Jump to Favorites, Apps, Pipelines, Spaces...

Personal > parse-hipaa [Open app](#) [More](#)

Overview Resources Deploy Metrics Activity Access **Settings**

Get a complete visualization of your app in a team-based continuous delivery environment with [Heroku Pipelines](#). [Hide](#) [Create a Heroku Pipeline](#)

Installed add-ons **\$0.00/month** [Configure Add-ons](#)

Add-on	Plan	Identifier
Heroku Postgres	Hobby Dev	postgresq-concave-44296
Heroku Redis	Hobby Dev	redis-defined-50252
New Relic APM	Wayne	newrelic-tetrahedral-91734
Papertrail	Choklad	papertrail-elliptical-53771
Heroku Scheduler	Standard	scheduler-graceful-99437

Latest activity [All Activity](#)

- coreyearleon@icloud.com: Set `PARSE_SERVER_ENABLE_IDEMPOTENCY` config var Today at 12:28 AM - v13
- coreyearleon@icloud.com: Deployed `web` (c88c25fc3ebd) Today at 12:19 AM - v12
- coreyearleon@icloud.com: **Build succeeded** Today at 12:18 AM - [View build log](#)

- Click on **Reveal Config Vars**

Config Vars

Config vars change the way your app behaves. In addition to creating your own, some add-ons come with their own.

[Reveal Config Vars](#)

3. Look for the config var, "PARSE_SERVER_ENABLE_IDEMPOTENCY", click edit and change it's string value from *false* to *true*

Edit config variable ✕

Key

PARSE_SERVER_ENABLE_IDEMPOTENCY

Value

true

[Dev Center: Help with Config Vars](#)

4. Give your server a couple minutes to restart and check that you can access your server by visiting "https://YOUR_APP_NAME.herokuapp.com/dashboard"

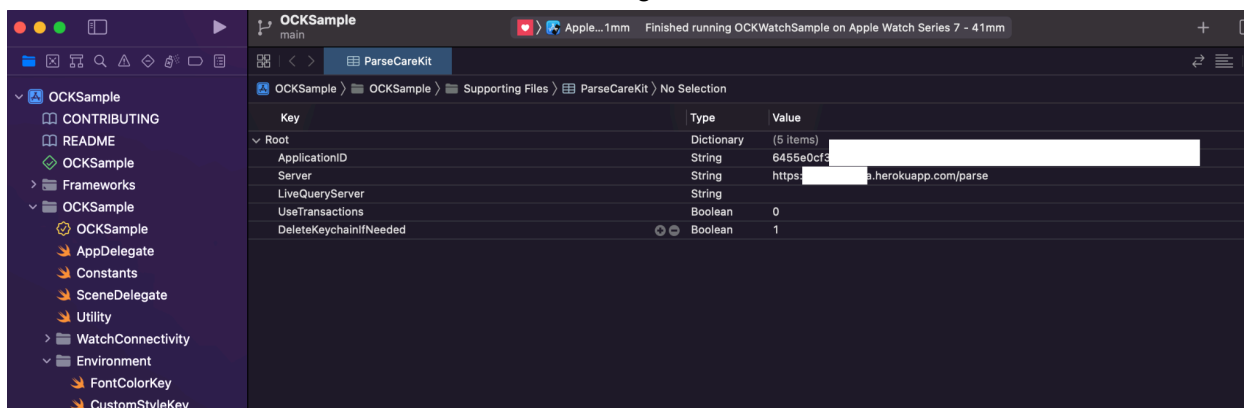
5. Client Applications

Now that your parse-hipaa server is configured on Heroku, you need to edit your client application with the values of your new `PARSE_SERVER_APPLICATION_ID` and "https://YOUR_APP_NAME.herokuapp.com/parse". Depending on what your application is based on, follow the steps below.

5.1 CareKitSample-ParseCareKit Based Apps (CS 485G apps)

1. If you are building on your personal mac, be sure to install swiftlint using brew. Directions can be found here: <https://github.com/realm/SwiftLint#using-homebrew>
 - a. Be sure to follow any warnings or suggestions in the terminal about adding lines to your environment if needed after running: `brew install swiftlint`
 - b. Students using the macs on campus should already have swiftlint installed and can proceed to the next step

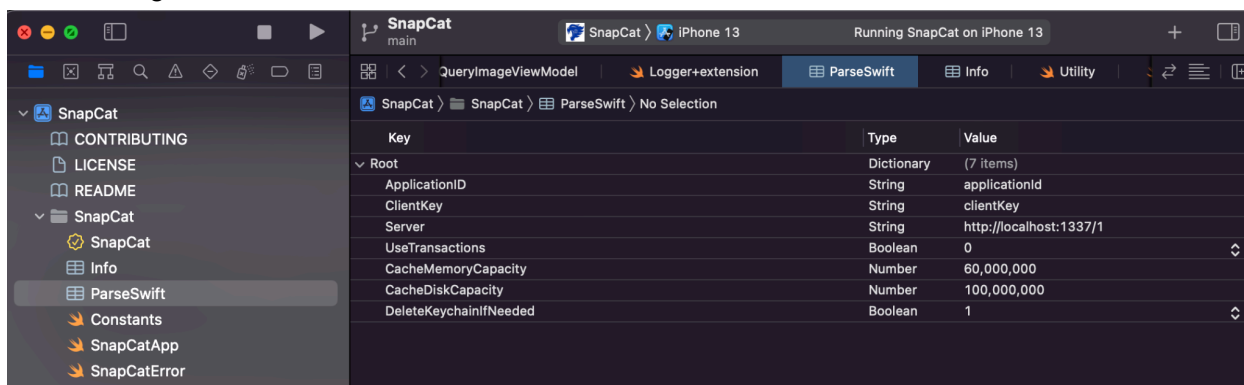
- Open your project in Xcode and goto, OCKSample->OCKSample->Supporting Files->ParseCareKit. You should see the following:



- In the row for **ApplicationID**, put the value of your **PARSE_SERVER_APPLICATION_ID** in the **Value** column
- In the row for **Server**, put the value of your **“https://YOUR_APP_NAME.herokuapp.com/parse”** in the **Value** column
- You can now build and run your application and you should be able to login and save data. You can view all saved data via the Parse HIPAA Dashboard you created in the previous steps
- You're finished with the setup, you **DON'T** need to do any other steps, **HAPPY CODING!!!**

5.2 SnapCat Based Apps

- If you are building on your personal mac, be sure to install swiftlint using brew. Directions can be found here: [GitHub - realm/SwiftLint: A tool to enforce Swift style and conventions.](#)
 - Students using the macs on campus should already have swiftlint installed and can proceed to the next step
- Open your project in Xcode and goto, SnapCat->SnapCat->ParseSwift. You should see the following:



- In the row for **ApplicationID**, put the value of your **PARSE_SERVER_APPLICATION_ID** in the **Value** column

4. In the row for *Server*, put the value of your `“https://YOUR_APP_NAME.herokuapp.com/parse”` in the **Value** column
5. You can now build and run your application and you should be able to login and save data. You can view all saved data via the Parse HIPAA Dashboard you created in the previous steps
6. You're finished with the setup, you **DON'T** need to do any other steps, **HAPPY CODING!!!**

5.3 ParseSwift Based Apps that are not ParseCareKit or SnapCatBased, along with other Parse SDK's

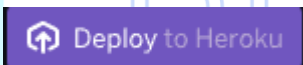
Depending on your SDK, you need to edit your client [SDK](#) with the values of your new `PARSE_SERVER_APPLICATION_ID` and `“https://YOUR_APP_NAME.herokuapp.com/parse”`.

6. Standalone Dashboard

This is only for the standalone parse-hipaa-dashboard. If you configured a parse-hipaa-server in 2. Server - Backend as a Server, you should skip this section.

Your BaaS is based on [nodejs](#), specifically [parse-dashboard](#).

1. Goto the [parse-hipaa-dashboard GitHub repo](#) and click the button (if this doesn't work in Safari, try another browser):


 A purple button with a white Heroku logo icon and the text "Deploy to Heroku".

RECON
LAB

2. You should see a screen that looks like the following:

The screenshot shows the Heroku 'Create New App' interface. At the top left is the Heroku logo. To its right is a search bar with the text 'Jump to Favorites, Apps, Pipelines, Spaces...'. Below this is a light blue bar with the text 'Create New App'. The main content area features a Parse logo and the text 'Deploy your own Parse HIPAA Dashboard Example'. Below this is a description: 'An example Parse server dashboard' and a link: 'netreconlab/parse-hipaa-dashboard#main'. The form fields are: 'App name' with 'app-name', 'App owner' with 'Corey Baker (coreyearleon@icloud.com)', and 'Choose a region' with 'United States'. At the bottom is a button labeled 'Add to pipeline...'.

3. Use YOUR_APP_NAME from your server setup, but append it with “dashboard. It should look like, “YOUR_APP_NAME-dasboard”
4. Next, you will need to link your new Parse HIPAA Dashboard to your server. You will accomplish this by making some of the environment config vars in your Parse HIPAAA Dashboard match your server. Under the **Config vars** section, set the following (left side is your config var for your Parse HIPAA Dashboard, the right side is the VALUE for the respective config var on your server):
 - a. **PARSE_DASHBOARD_APP_ID = PARSE_SERVER_APPLICATION_ID**
 - b. **PARSE_DASHBOARD_APP_NAME = YOUR_APP_NAME**
 - c. **PARSE_DASHBOARD_PRIMARY_KEY = PARSE_SERVER_PRIMARY_KEY**
 - d. **PARSE_DASHBOARD_SERVER_URL = PARSE_SERVER_URL**
 - e. **PARSE_DASHBOARD_GRAPHQL_SERVER_URL = (read below)**
 - i. This is the same as **PARSE_SERVER_URL**, accept you should delete “/parse” at the end of the string and add “/graphql”
 - ii. Your graphql url should look something like:
https://yourappname.herokuapp.com/graphql
5. Now you will create a username and password to log into your dashboard. This should be something you plan to remember or save to your Keychain
 - a. Set your username in **PARSE_DASHBOARD_USERNAME**
 - b. Set your password in **PARSE_DASHBOARD_USER_PASSWORD**
 - i. Note that you should be entering the hash of your password (see notes on the environment variable). Type your password into [this site](#) to get a hash

6. Scroll and tap **Deploy app**

PARSE_DASHBOARD_USER_ID **Required**

Specify the user password to connect with.

Required

PARSE_DASHBOARD_USER_PASSWORD **Required**

Specify the user password to connect with. This is a password in plain text.

Required

PORT **Required**

Port for parse-hipaa-dashboard, default is 4040.



Deploy app

7. When finished, click **Manage App**. Go to **Settings**. Scan the page for **Domains** and you should see the link to access your Dashboard:

Domains

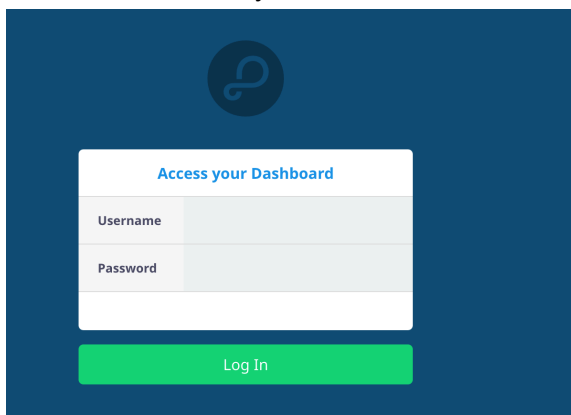
You can add custom domains to any Heroku app, then visit [Configuring DNS](#) to setup your DNS target.

Your app can be found at <https://parse-carekit-dashboard.herokuapp.com/>

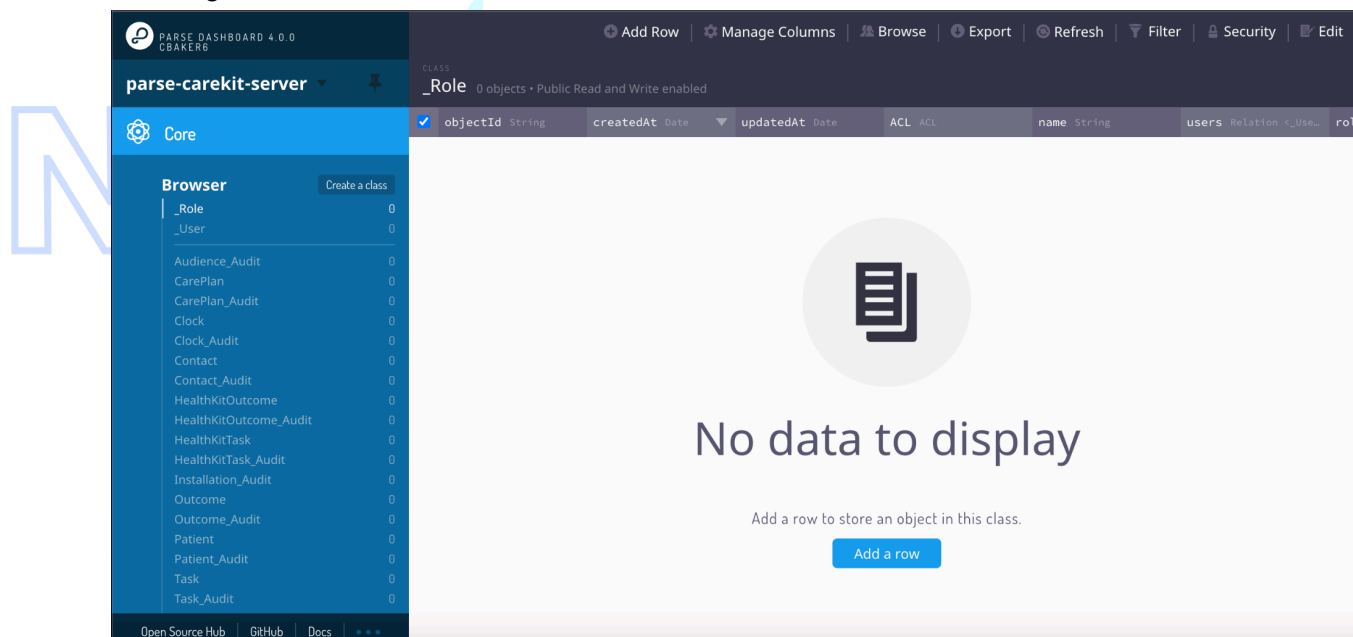
Add domain

Custom domains will appear here
Custom domains allow you to access your app via one or more non-Heroku domain names (for example, [www.yourcustomdomain.com](#))

- Click the link and if your dashboard is working you will see the following:



- Use the values entered for `PARSE_DASHBOARD_USERNAME` and the “original” (not the hash) of `PARSE_DASHBOARD_USER_PASSWORD` to login
- If your dashboard is correctly configured to connect to your server, you will see the following:



PARSE DASHBOARD 4.0.0
CBAKERS

parse-carekit-server

Core

Browser

Create a class

objectId	String	createdAt	Date	updatedAt	Date	ACL	ACL	name	String	users	Relation <_Use...	rol
----------	--------	-----------	------	-----------	------	-----	-----	------	--------	-------	-------------------	-----

No data to display

Add a row to store an object in this class.

Add a row

Open Source Hub | GitHub | Docs