Deployment of Bitnami Parse Server Stack on Microsoft Azure

Lab Guide

May 2016

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Overview

Parse is a platform that enables users to add a scalable and powerful backend to launch a full-featured app for iOS, Android, JavaScript, Windows, Unity, and more.

The Bitnami Parse Server stack now includes a dashboard that has a similar UI to the original Parse interface. The Parse Dashboard is a web interface that helps developers interact with the Parse Server API in a graphic way. With the dashboard, developers will be even closer to the experience available before migrating from the original Parse Hosting Services.

This lab will show you how to:

1) Launch and deploy the Bitnami Parse Server stack within Azure
2) Access the Bitnami Parse Dashboard
3) Interact with the Parse Dashboard features

Optional: We know that many users may be trying to find a Parse alternative as the Parse service will be shutting down. Therefore, if you already have an existing Parse account, we highly recommend you try out the following in order to:

4) Migrate an application from Parse's hosted service
    a. Migrate Parse DB to Self-Hosted MongoDB
    b. Setup Local Parse Server

If you'd like to come back and try this, feel free to visit our page here: https://wiki.bitnami.com/Applications/Bitnami_Parse_Server

Requirements

1) Microsoft Azure Subscription

Please note: *In order to participate in Exercise 4, you will need the following:*

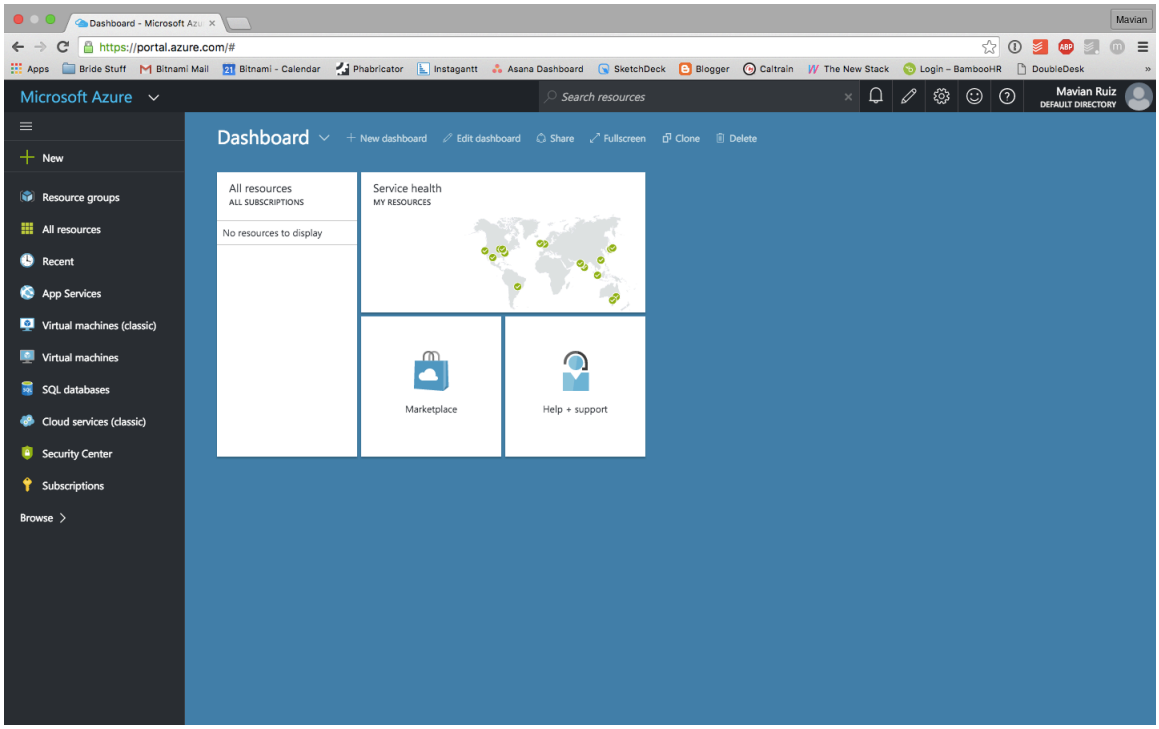
2) SSH Client (We used the built-in SSH client within Mac OS Terminal)
3) Account within Parse's hosted service

Technical Support

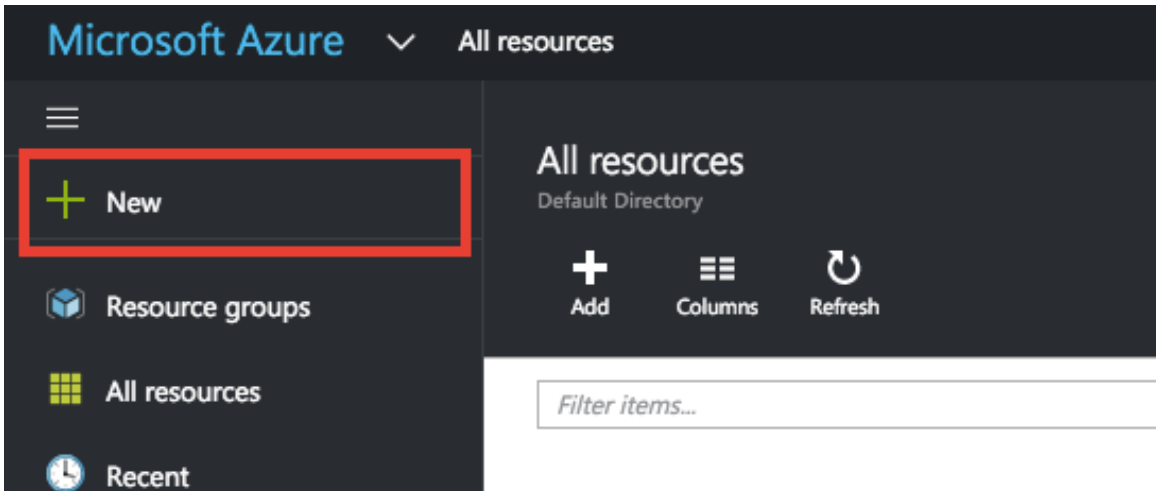
Having trouble with this lab or have a question? Please contact SuperHuman_Help@microsoft.com for technical assistance.

Exercise 1: Create Parse Server in Azure

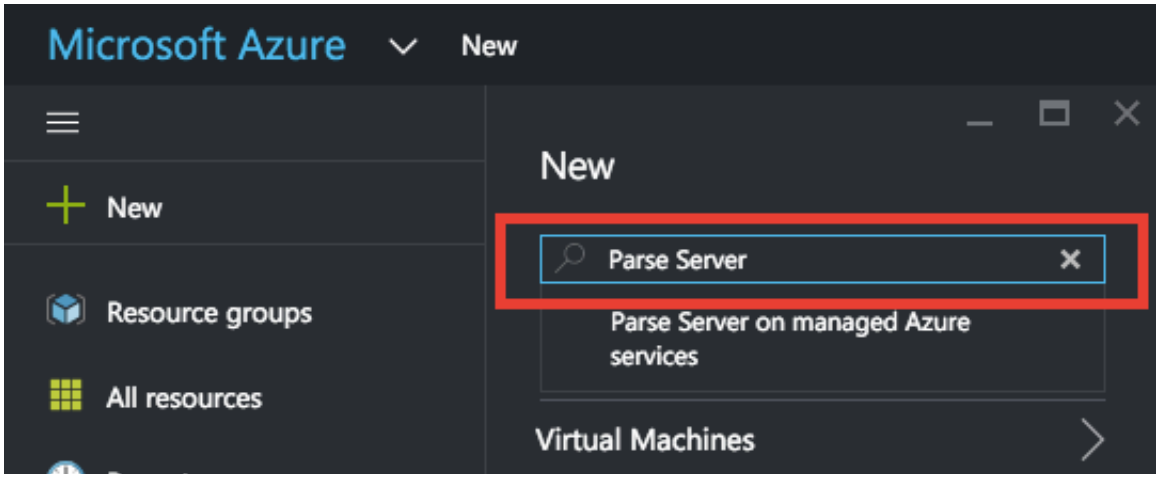
1) Once you have logged into Microsoft Azure, you will be brought to the following screen. This screen is the Azure Preview Portal:



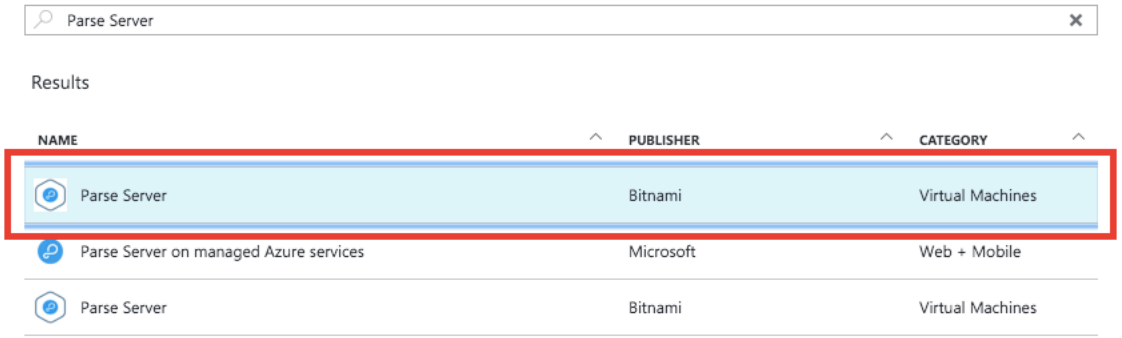
2) To create the Parse Server, you will need to get the application from the Marketplace. First, Click on "+ New" on the left hand menu.



3) Search by typing “Parse Server” within the query field and hit enter (or return) on your keyboard.



4) Select the most recent Bitnami version of Parse Server from the search results. As this lab was written, this would be Parse Server 2.2.8

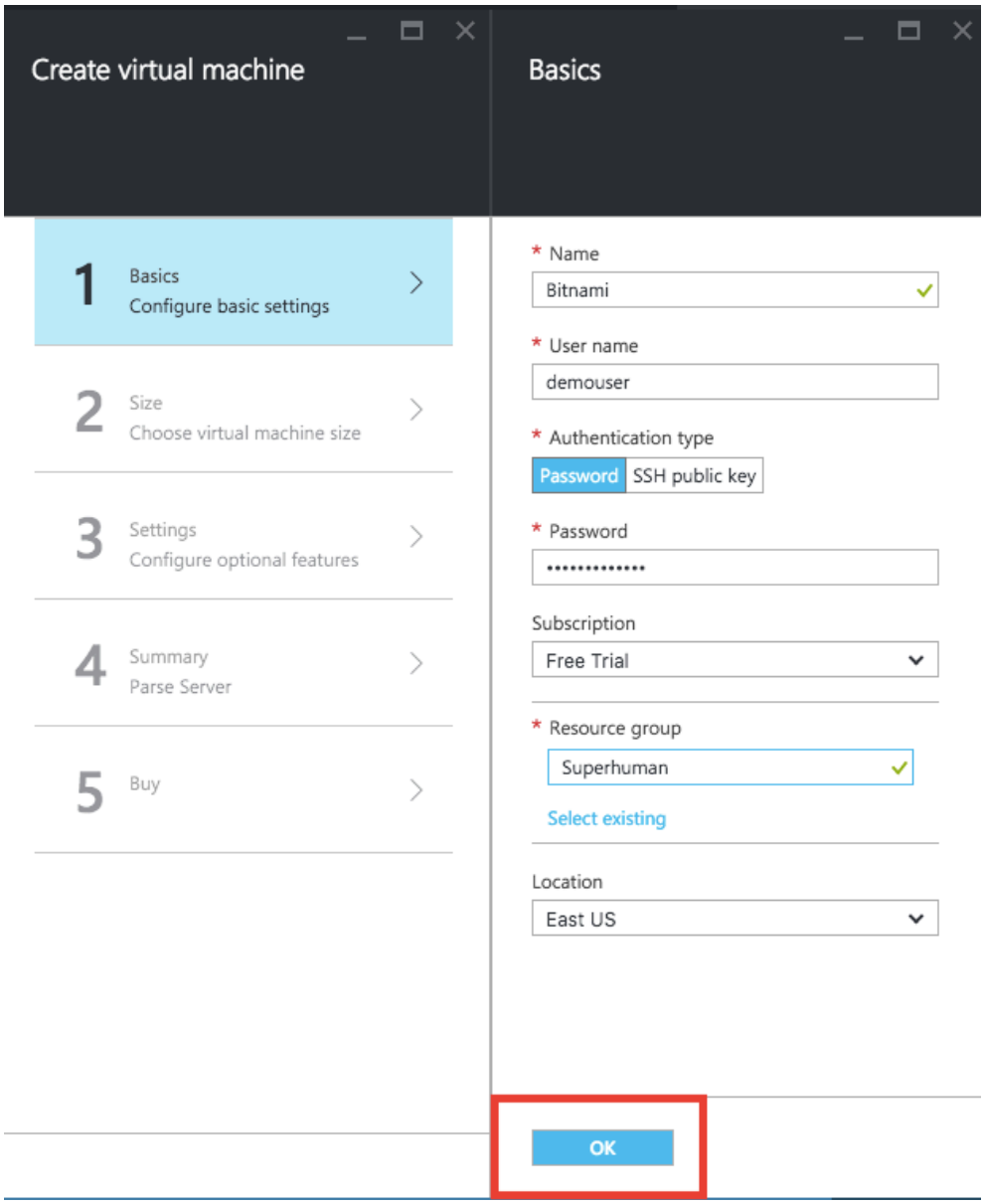


5) You will be brought to a page where you will now start creating credentials for your Parse Server VM. You will enter a Host Name, User name, Password, etc.

For the purpose of this exercise, we used the following:

- Name: Bitnami
- User name: demouser
- Password: This-is-demo1
- Resource Group: Superhuman
- Location: East US

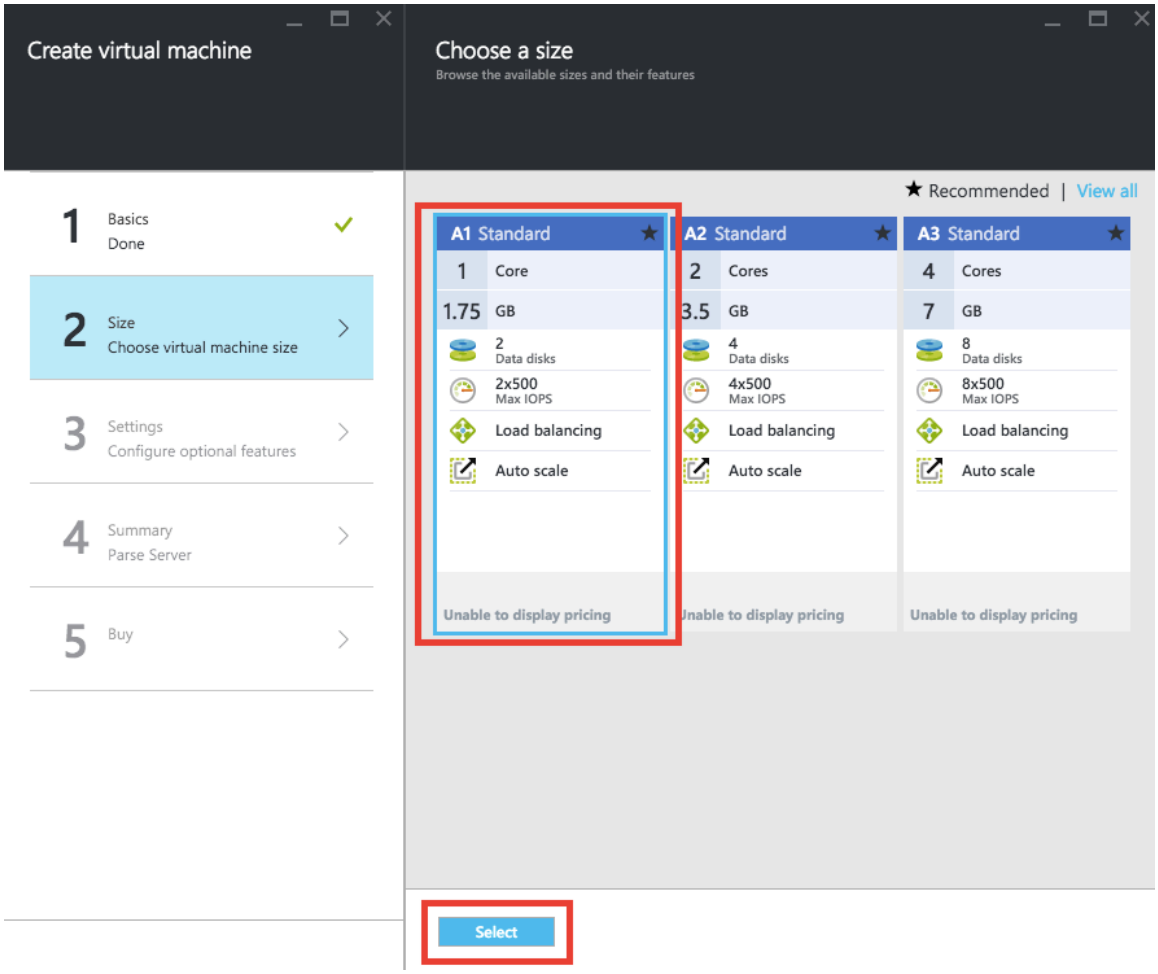
Then, click “OK”.



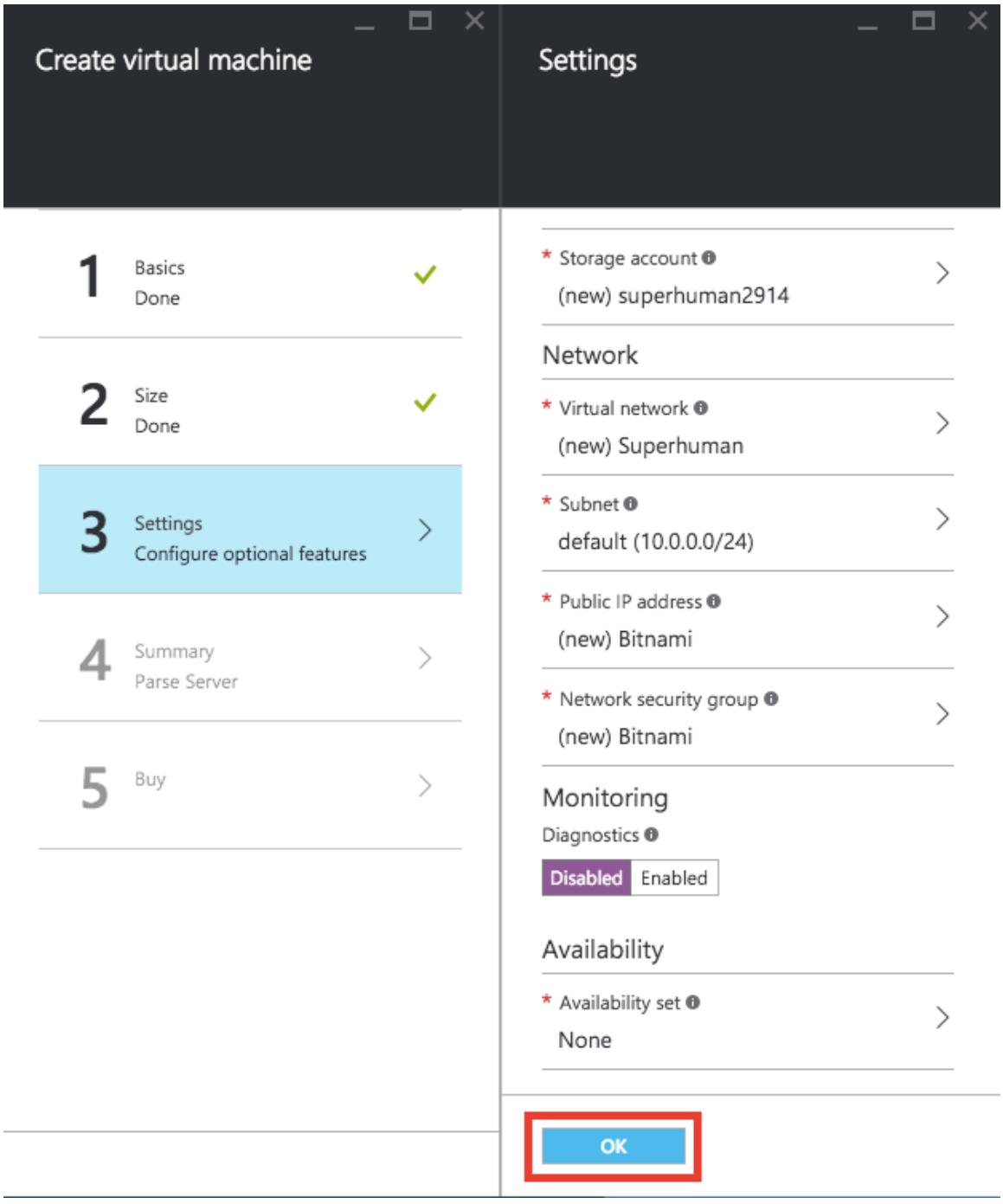
6) Next, Azure Preview Portal will generate recommended sizing for your VM to select from. In this exercise, we have chosen A1 Standard.

Once you have decided on the size, click “Select”.

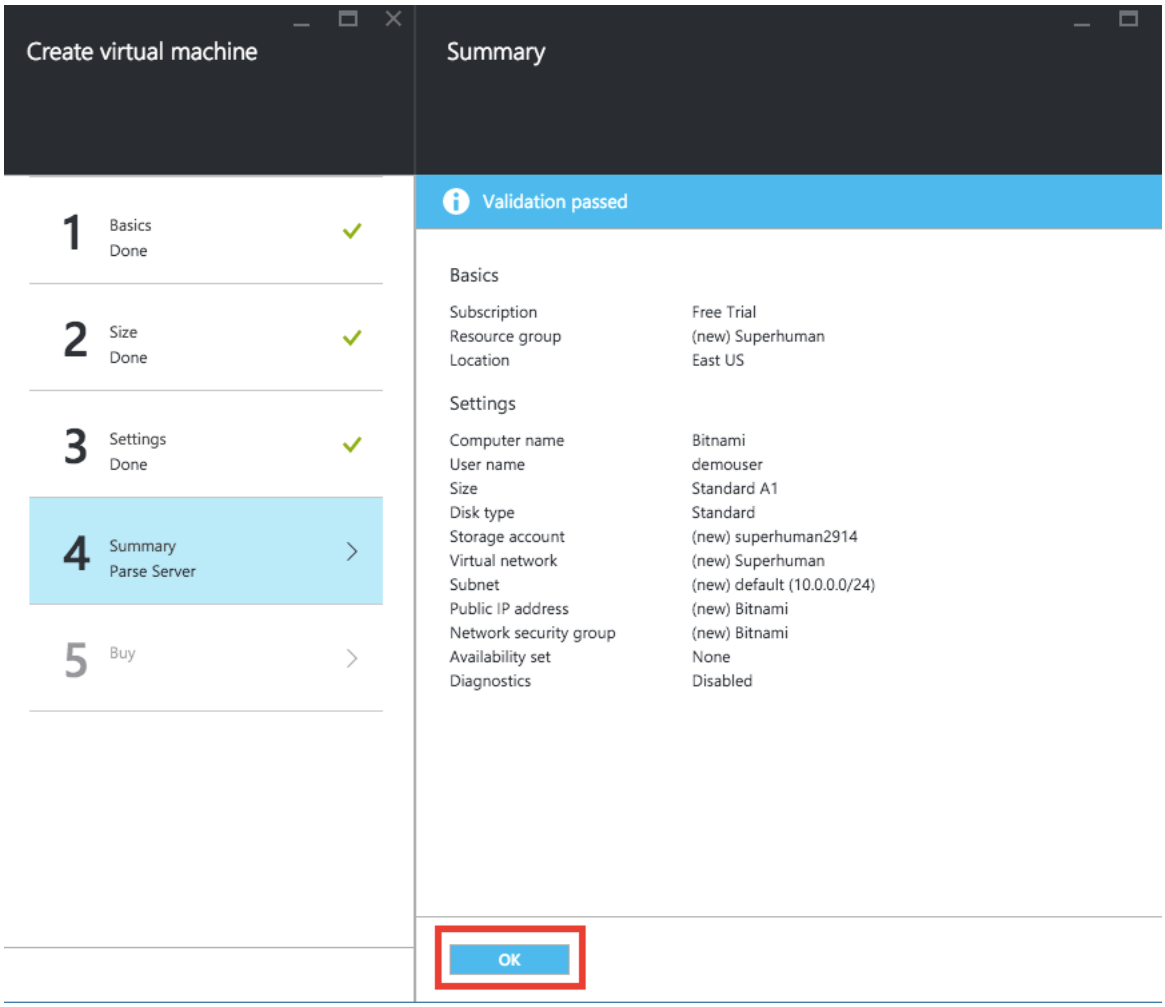
Please Note: This pricing is for Azure Infrastructure costs, not the cost of Parse Server. Bitnami Parse Server has no licensing costs.



7）Review your VM's settings and click "OK".

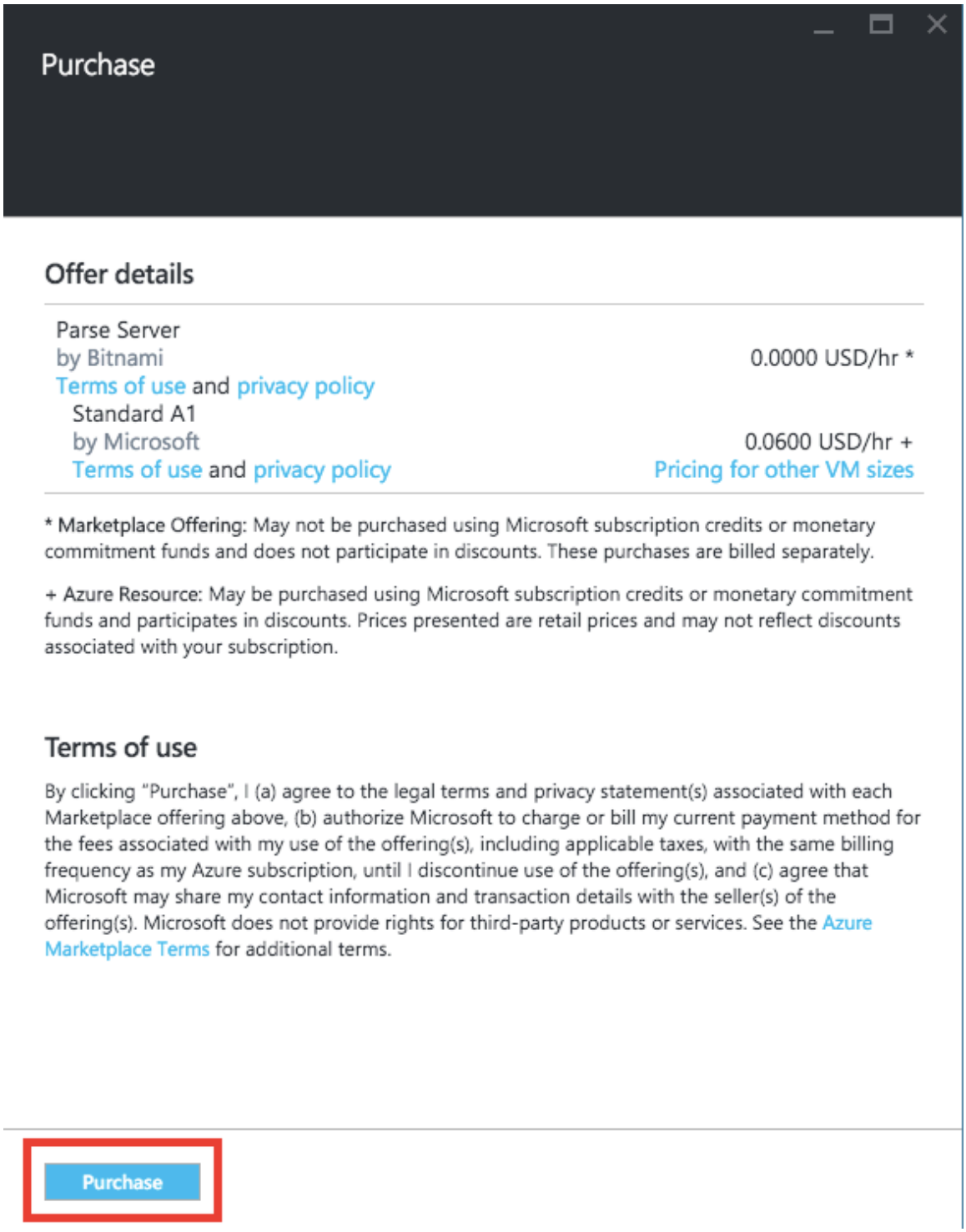


8) A summary with everything you have selected within steps 1-3 will be generated. Click “OK” to confirm that everything is to your preference.



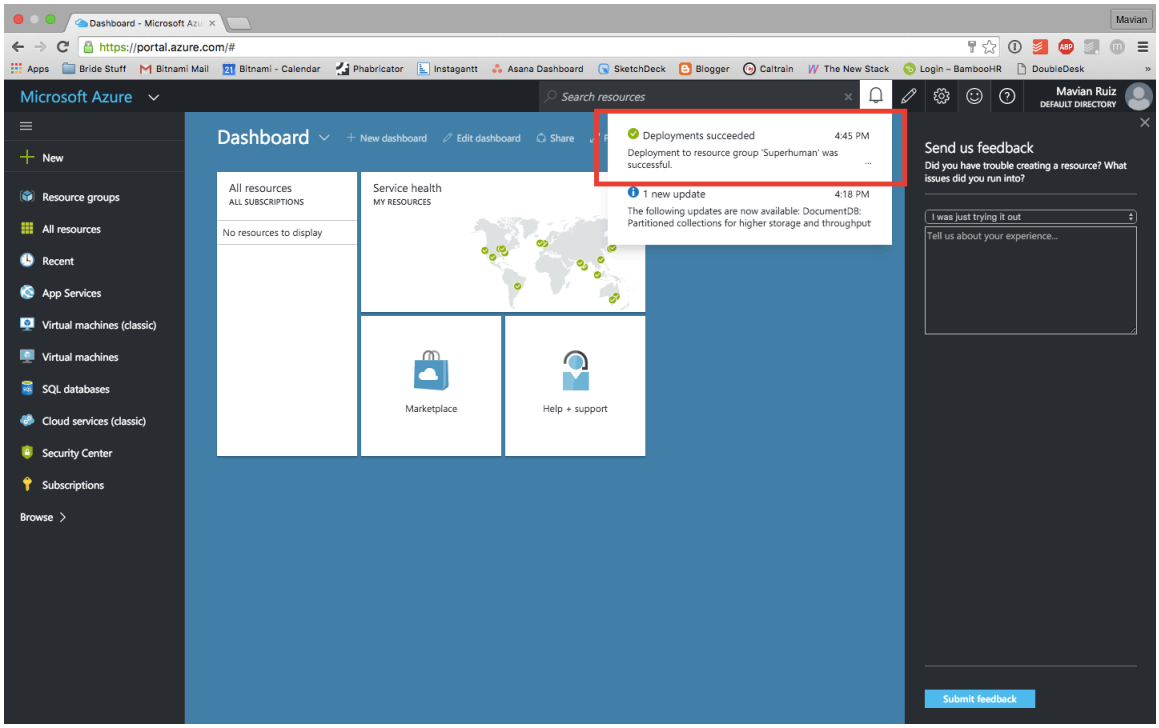
9) On the next screen, you will be brought to review your purchase details. You will notice that the cost for the use of the Parse Server is $0.00.

Click “Purchase” to start deploying Parse Server to your VM.

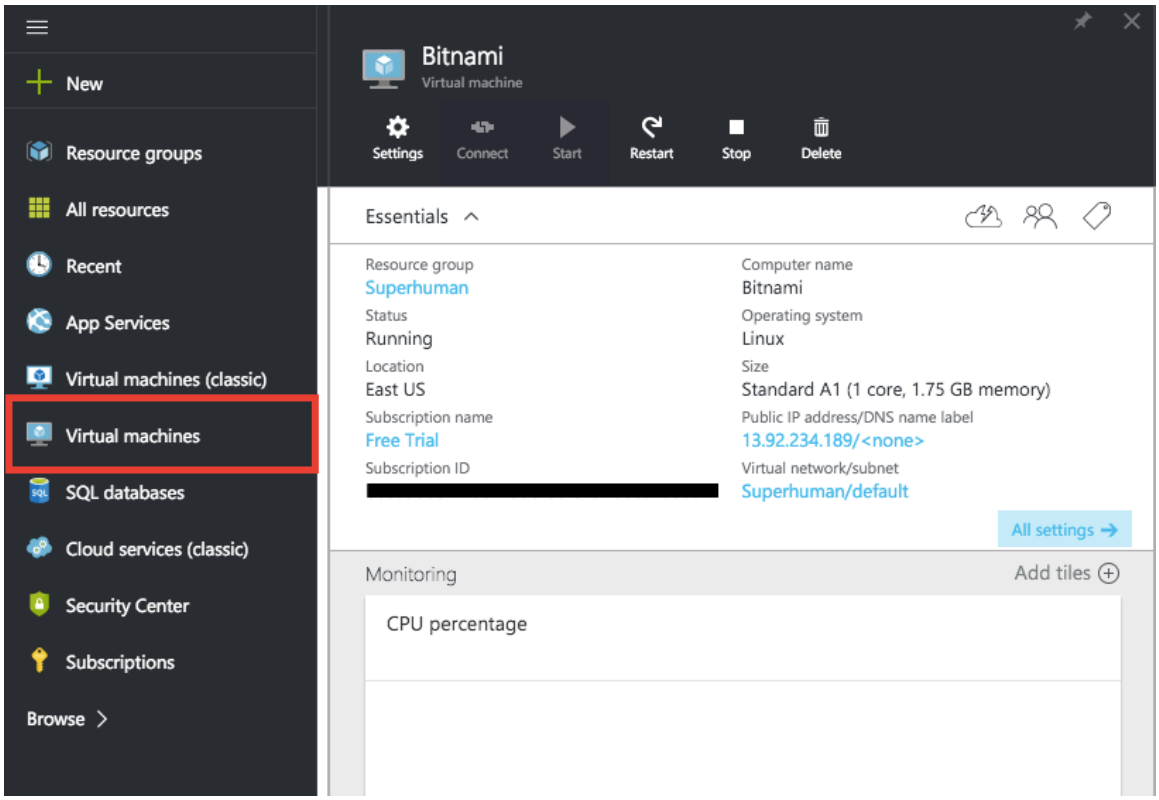


10) After clicking purchase, you will be brought to the Azure Preview Portal where you will notice Parse Server being deployed to your VM via notifications.

Once it is built, you will receive notification that your Parse Server deployment has been successful!

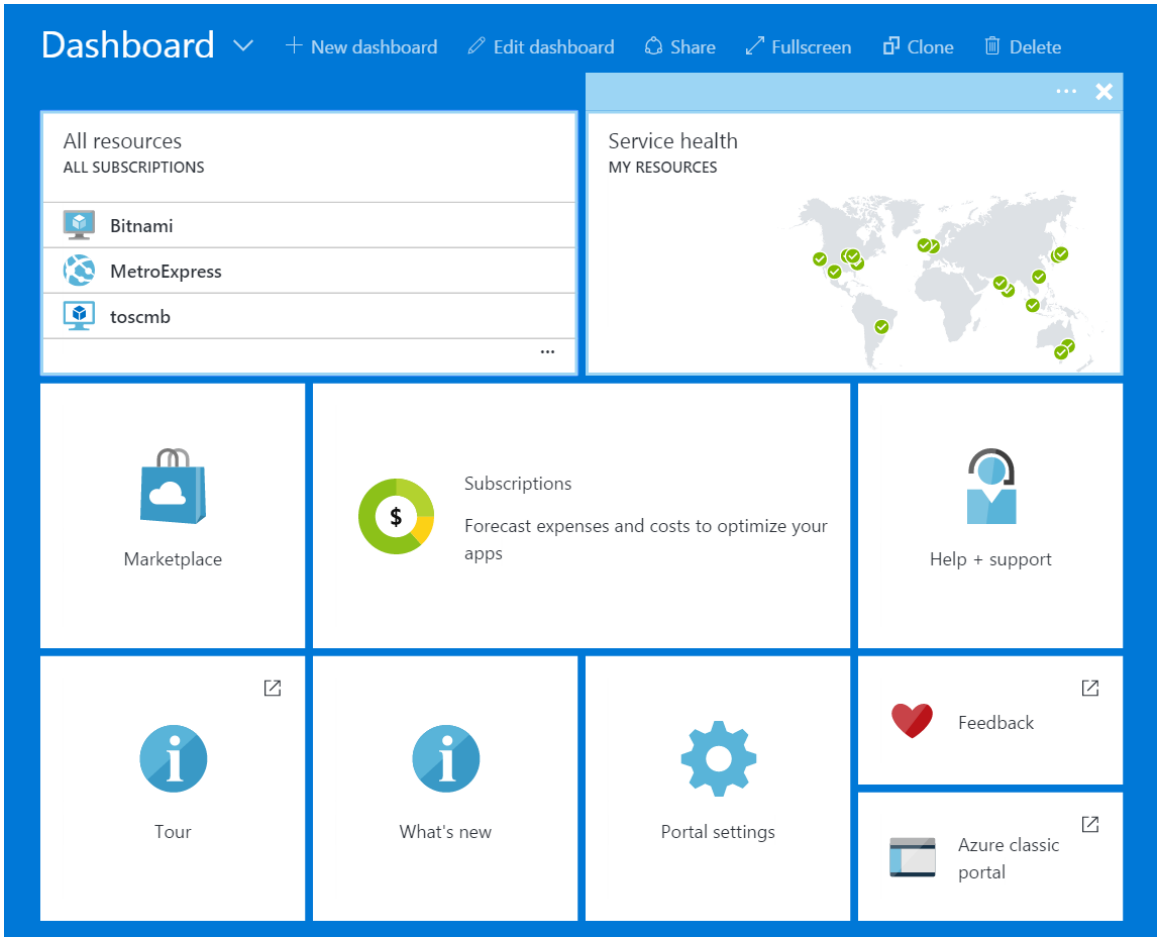


11) Now, you can click “Virtual Machines” in the left-hand menu to note that Parse Server is now running and to view display your VM settings.



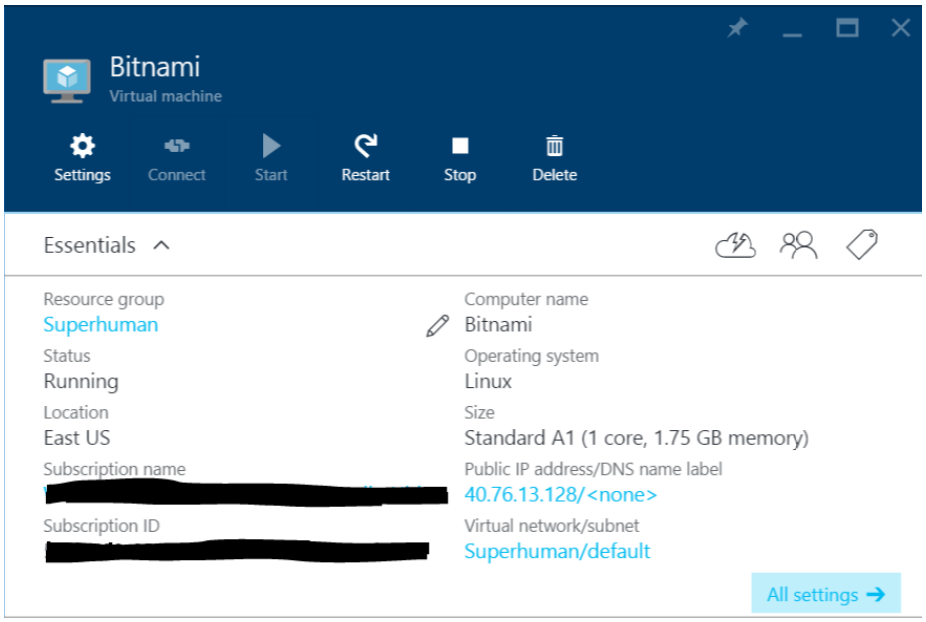
Exercise 2: How to Access Your Parse Dashboard

1. Go to the Azure portal (http://portal.azure.com/) dashboard. The newly created VM and Web Apps are shown as tiles on the main page.

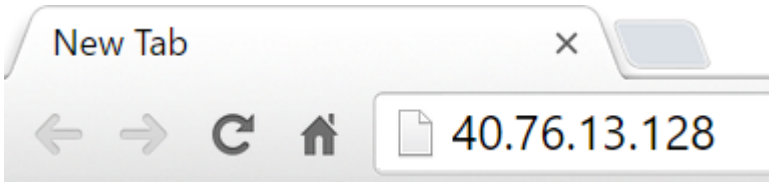


2. Locate and click the resource that was assigned in Exercise 1. For our resource, we will be clicking “Bitnami”.

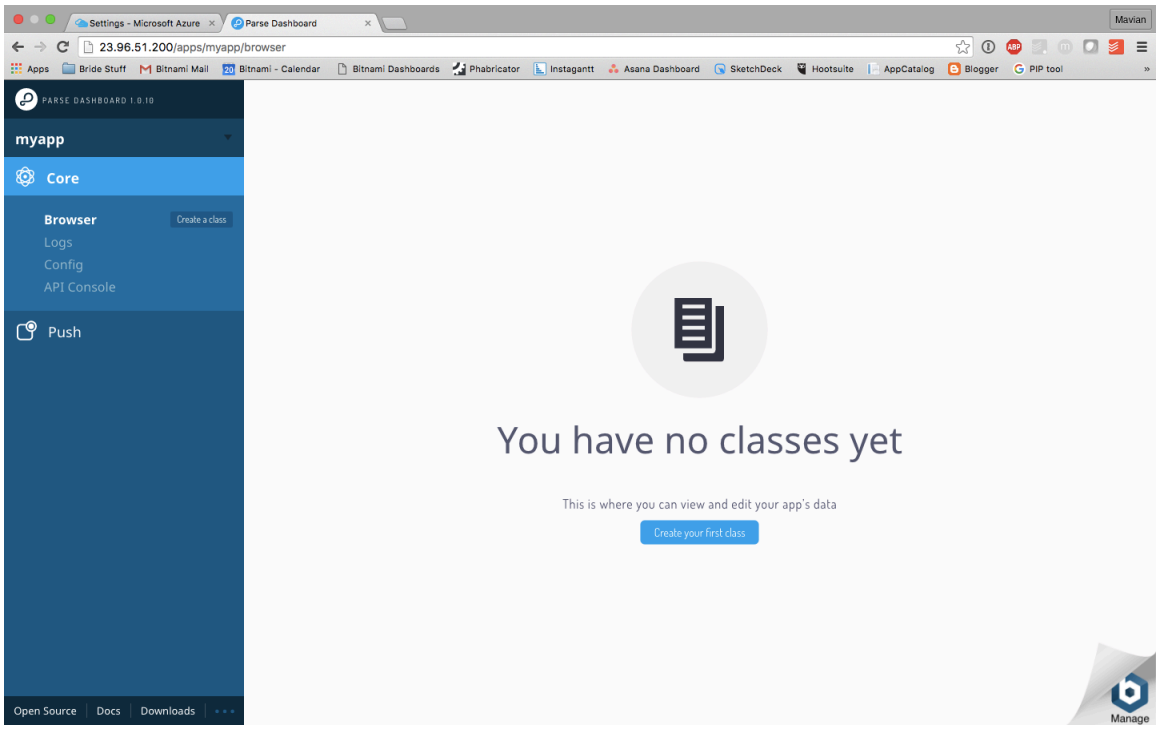
3. This will load the Parse Three details page. When the page opens, locate the Public IP address information.



4. Copy and Paste your given IP address in a new browser window/tab. Press Enter.
    a. Note: It may take about 5 minutes to load your dashboard this first instance. However, anytime you access your dashboard afterwards, it will load immediately.

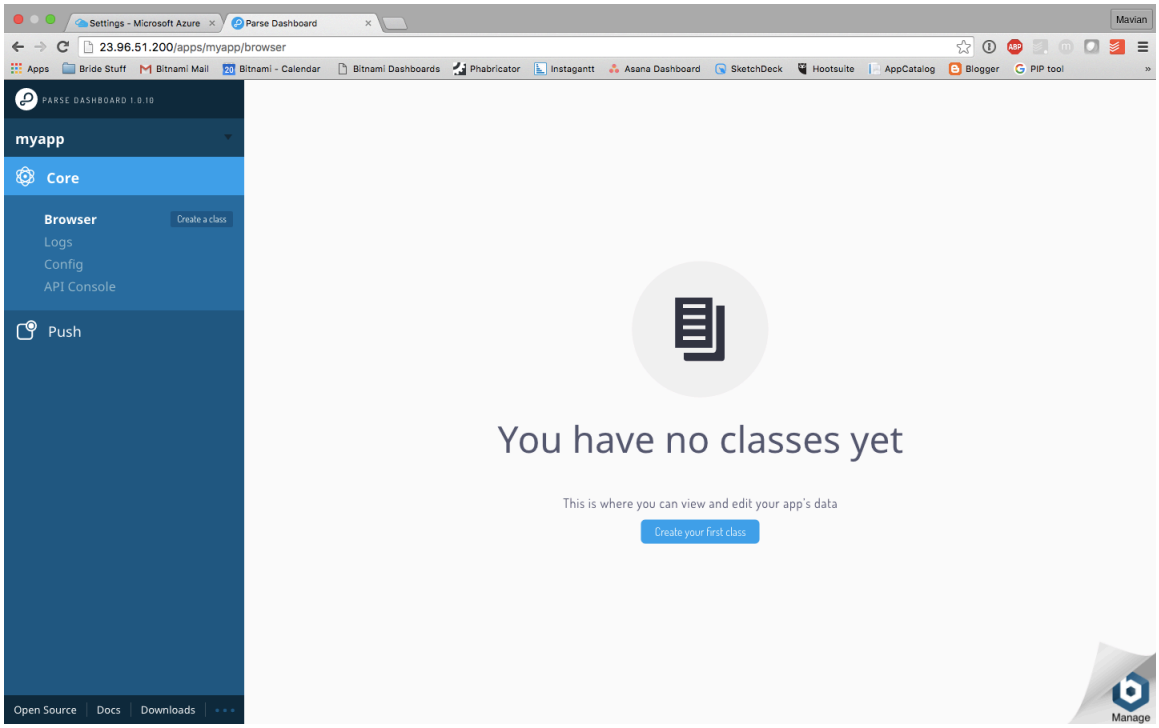


5. You have now accessed your private Parse server and its' dashboard. Now, you can also reap the benefits of Parse and it's great UI.

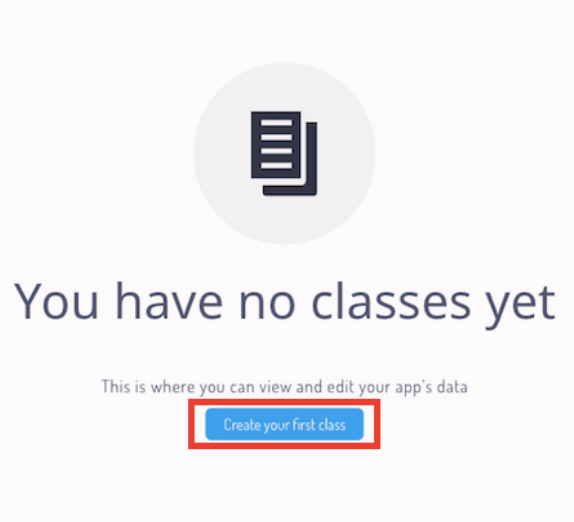


Exercise 3: Interacting with the Parse Dashboard UI

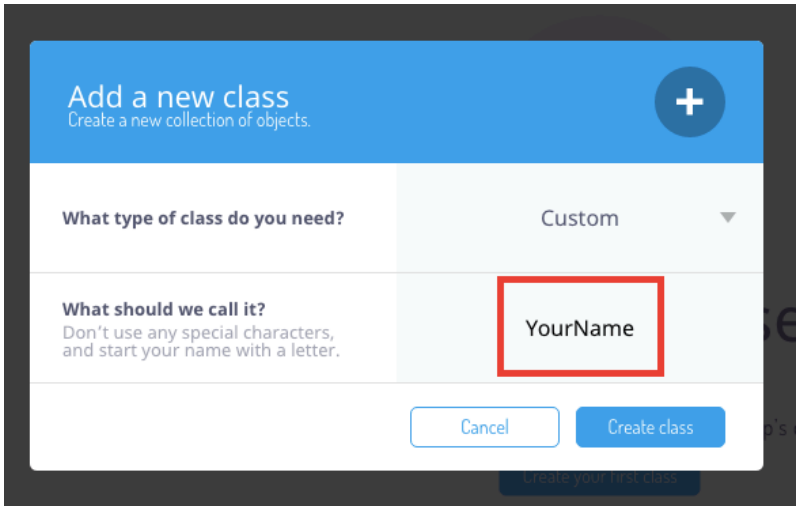
1. Once you've accessed your Parse Dashboard, you will see the following screen.



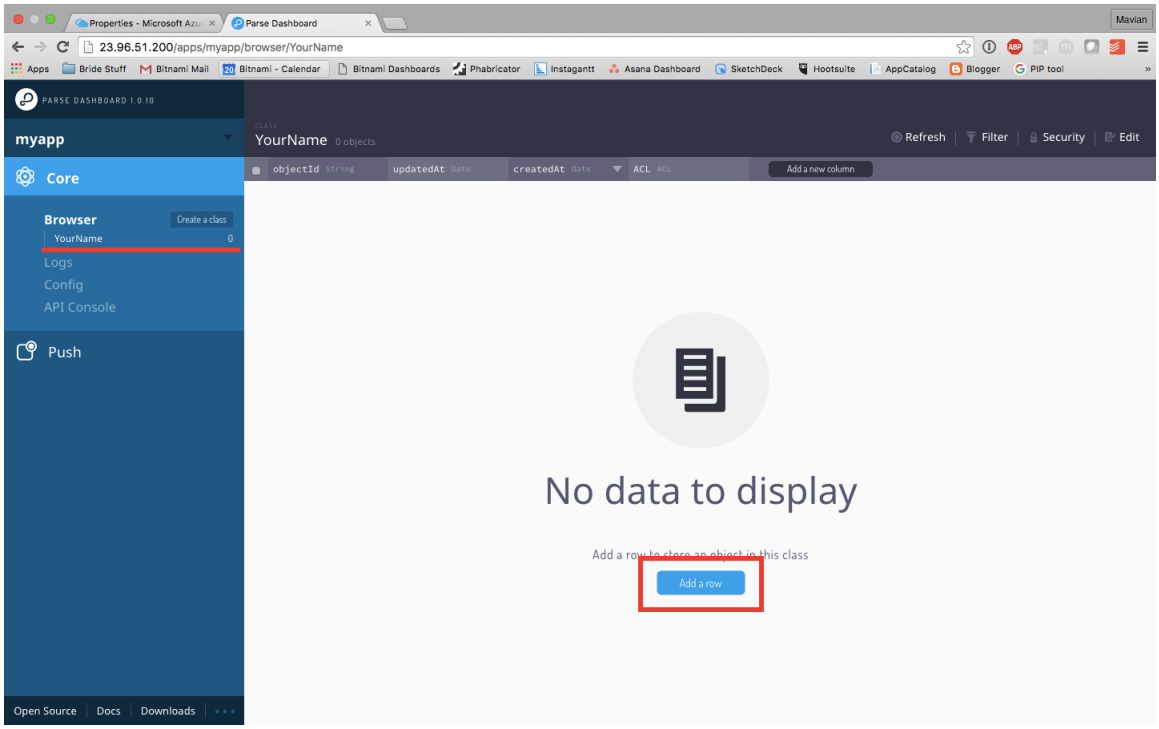
2. Click "Create your first class."



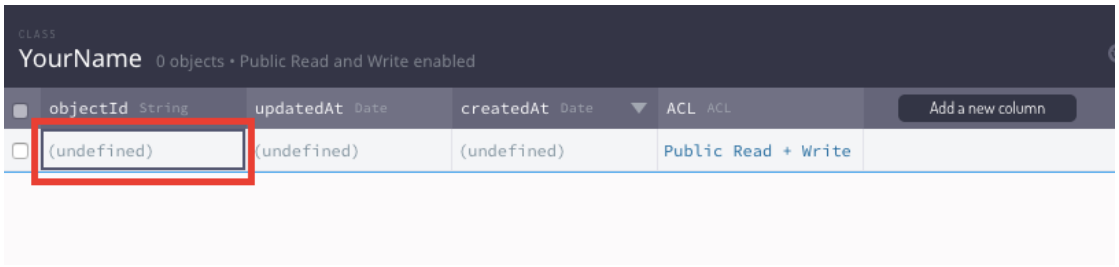
3. Within the module, name your first class under your first name.

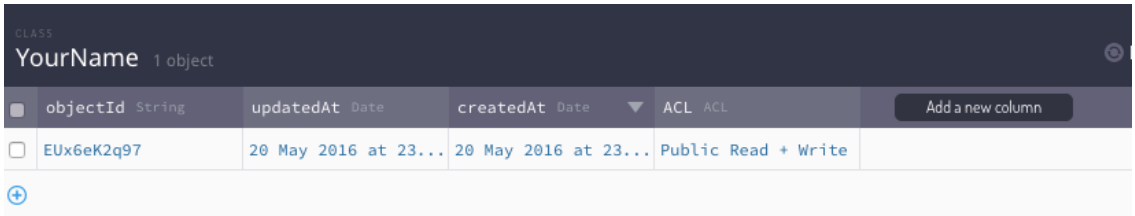


4. You will now notice that a class with your name has been created within the left hand column, and this class is now being displayed as your main page. Click “Add a Row” in order for us to begin storing objects within this class.

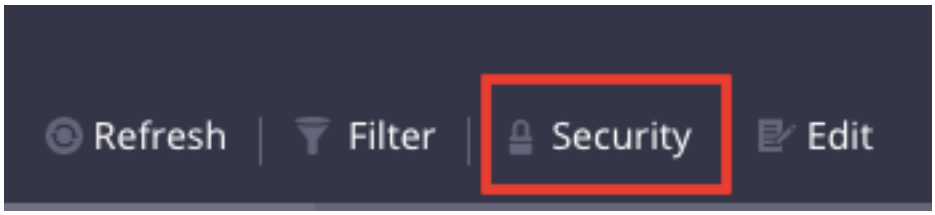


5. This will have added an “undefined” row to your class. In order to give this row some definition, double click the “(undefined)” column under “objectId”. Once you click outside of the cell, the row will be populated with data.

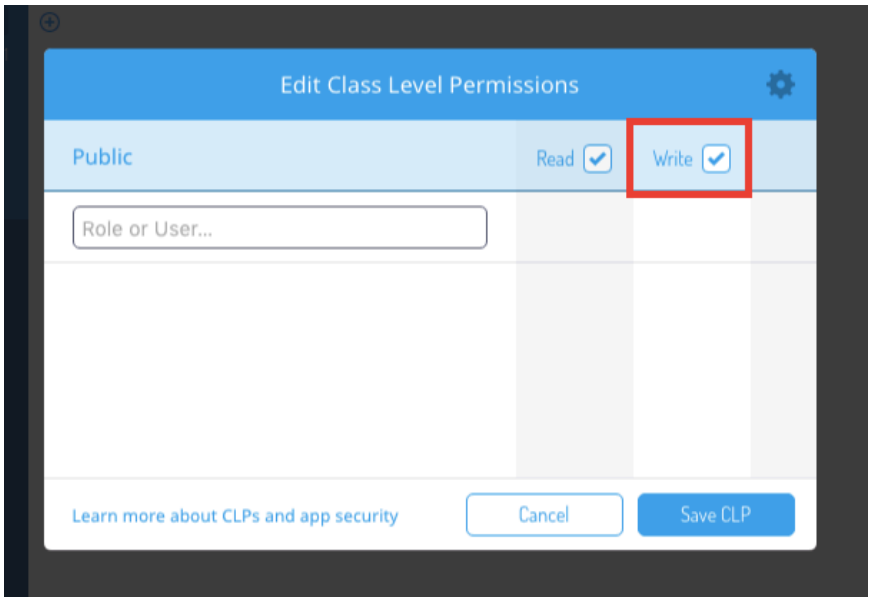




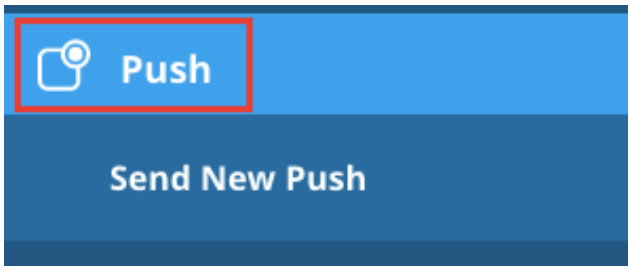
6. Now that you have a class and an object within it, we will ensure that you have a secure app. Click “Security” in the top right corner.



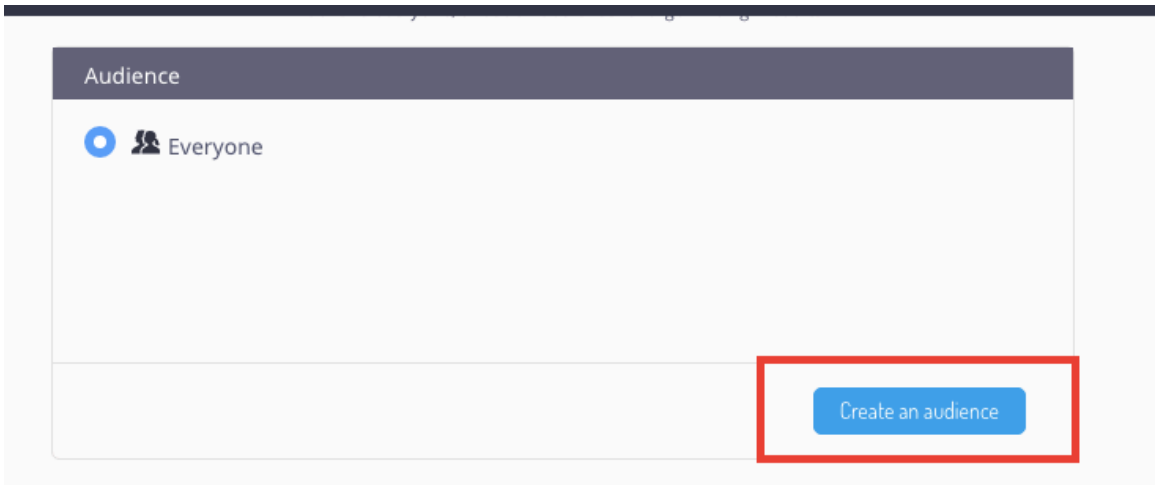
7. We will be editing the CLP for this class. Currently, your app is automatically set so that *any user* of the app can see and change every object in your class. Since you most likely don’t want any user to be able to delete your app, uncheck the box next to “Write” to disable any public writes. Then click the ‘Save CLP’ button to save your change.



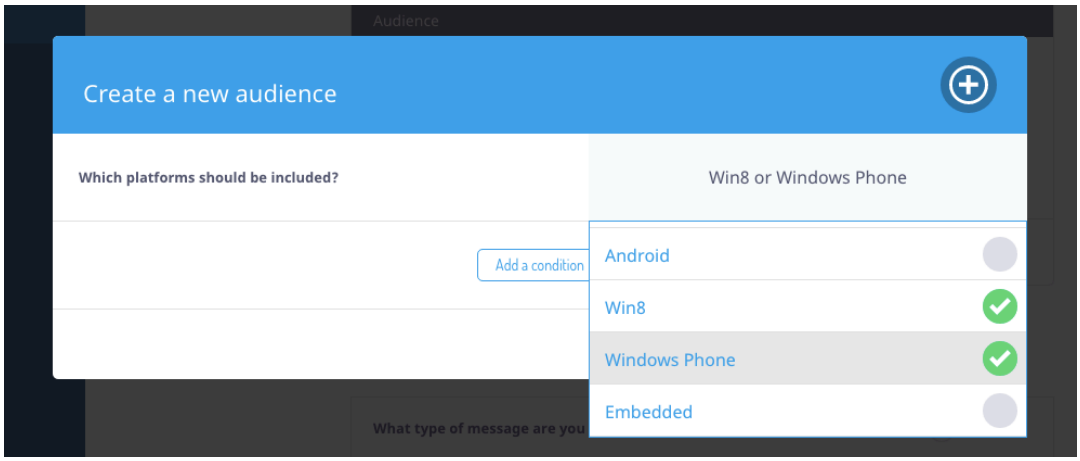
8. Next, we will explore what it may be like to send out a push notification. Click “Push” in the left hand menu.



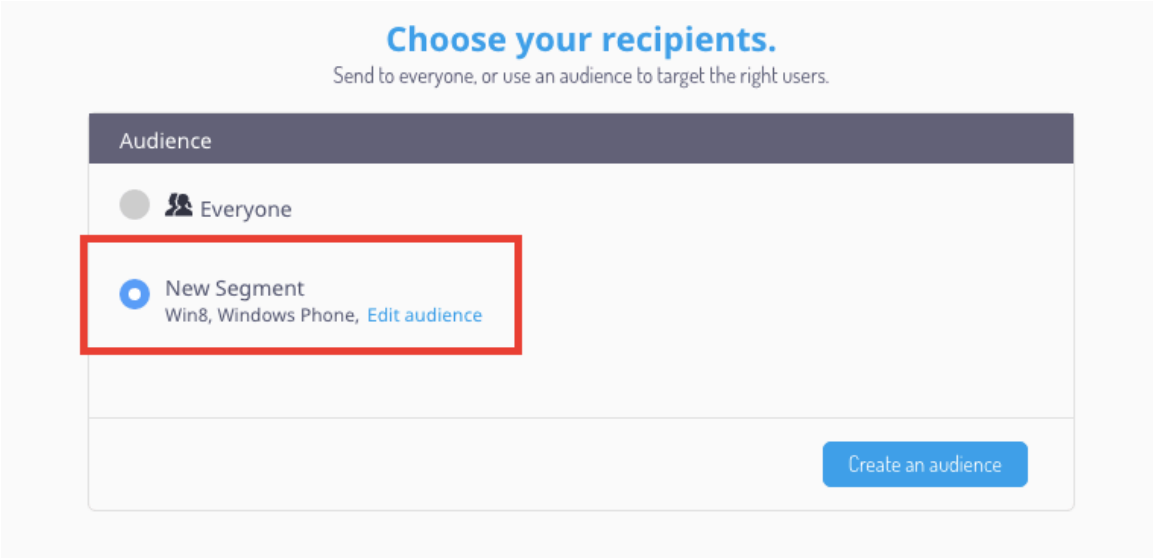
9. Create an audience to which you would like your push notification be delivered.



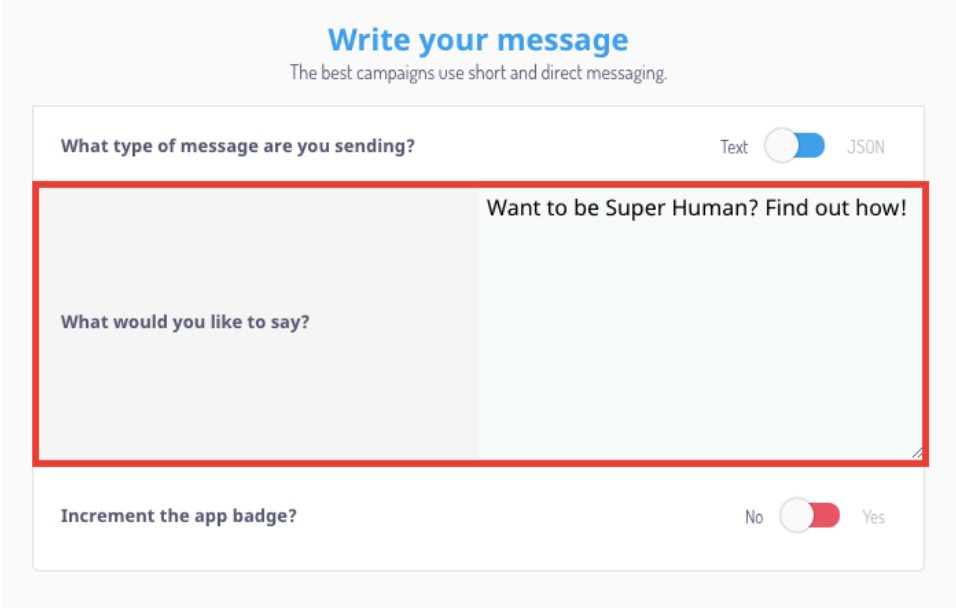
10. Choose which platforms you'd like your notification to be sent through. Click "Use this audience" to save your changes.



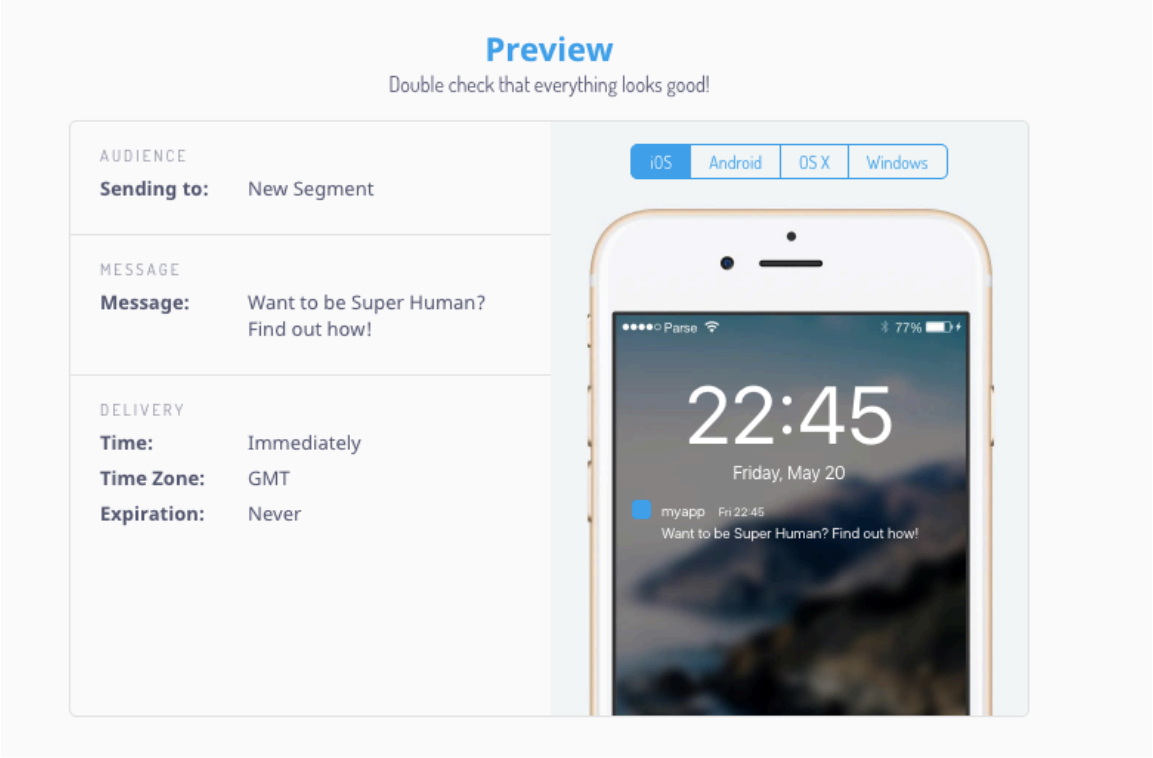
11. You will see your new segment created under your Audience list.



12. Create the text that you would like your push notification to message your users.



13. Check within your preview that everything looks good!



14. Click “Send.” This will send and save your message to your users.

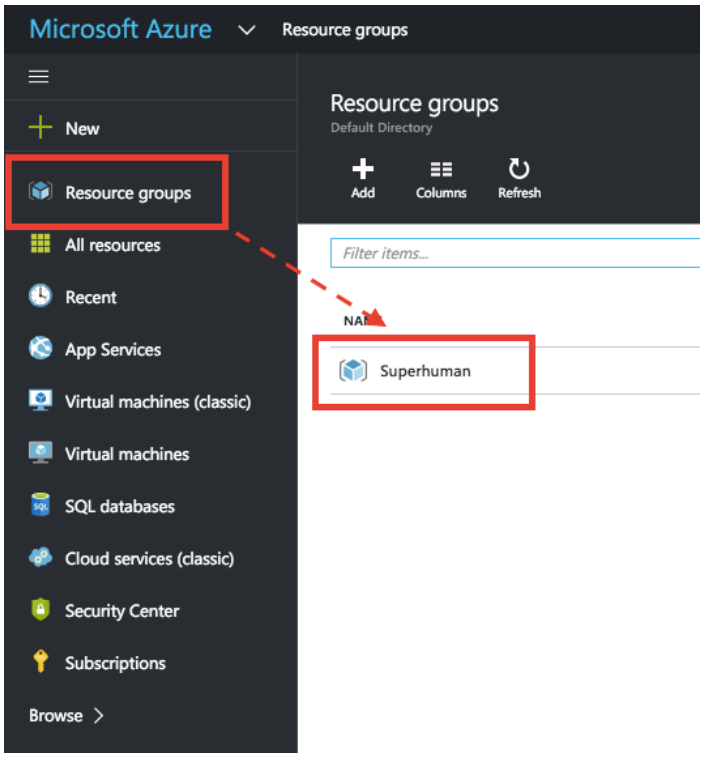
OPTIONAL- Exercise 4: How to Migrate an Application from Parse's Hosted Service

If you have an existing Parse account, please feel free to complete this Optional Exercise. If you do NOT have an existing Parse account, your lab is complete. Proceed to the "Validate your Lab" section.

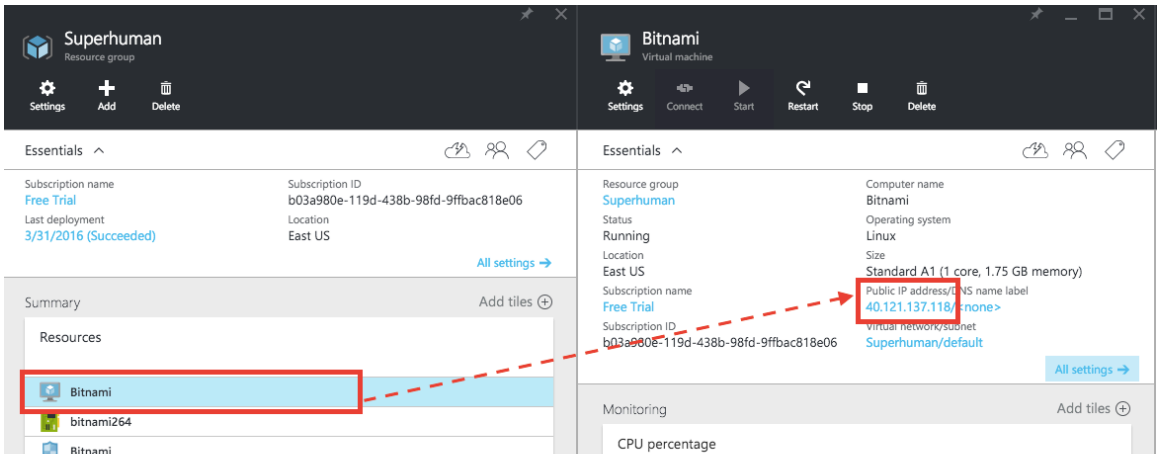
Exercise 4.1: Migrate Parse DB to Self-Hosted Mongo DB

1) Once you have confirmed that the Parse Server has been created and is now running, you will need to use a ssh client tool of your preference to establish a connection to the Parse Server. For this lab, we will use the ssh client built into Mac OSX, Terminal.

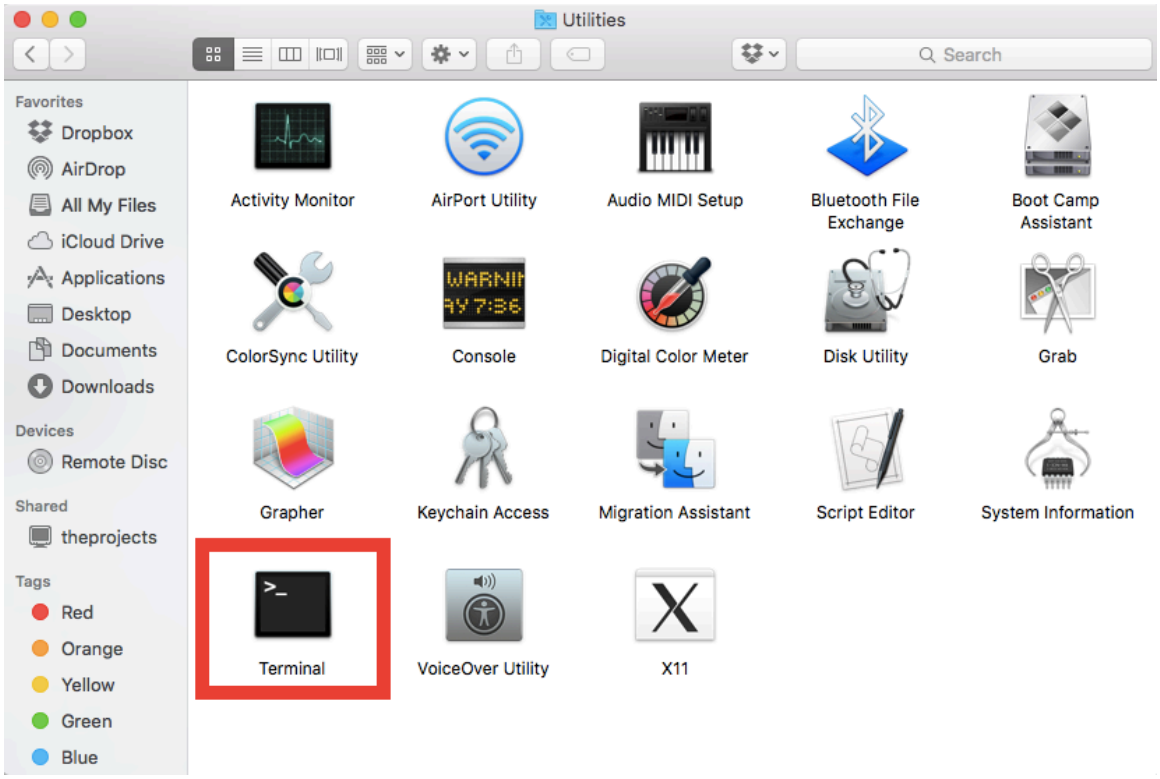
Click "Resource Groups" and then 'Superhuman'



2) Once 'Resource Groups' loads click the computer service icon and note the Public IP address listed within 'Essentials'. **Note: You will be referencing this IP address for the remainder of this exercise.**



3) Open Terminal by opening 'Finder' -> Applications -> Utilities and Double Clicking "**Terminal**".

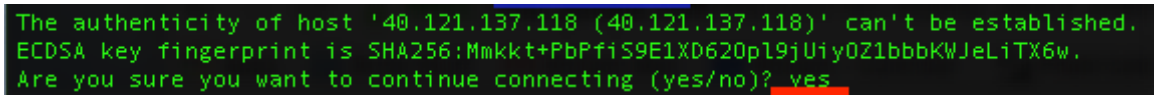


On the Terminal window, you will use ssh in order to connect to the Parse Server by typing

- ssh demouser@IPADRESS

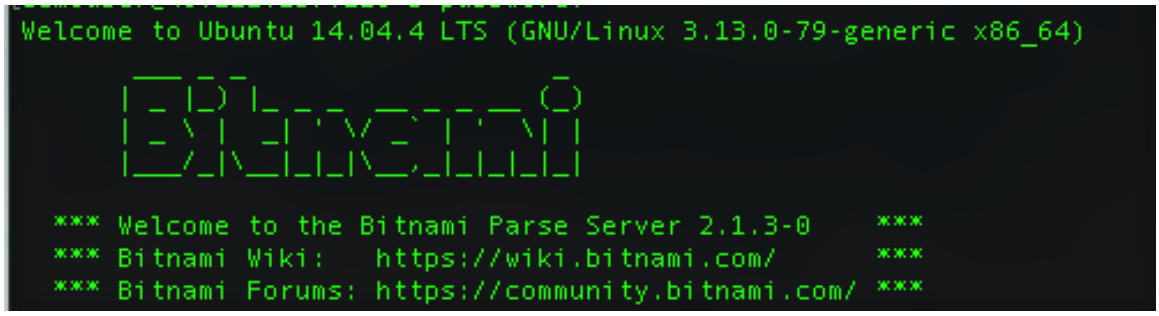
```
ssh demouser@40.121.137.118
```

4) Authenticate IP address for the Parse Server. This only happens one time. Confirm my typing "yes."



5) You will then need to enter the password we had originally created to confirm the credentials. *(Password: This-is-demo1)*

Once you have entered your password, this screen will appear.



6) Now that you are connected to the Parse server. You will change the bind_ip in order to migrate your application data from an *external location.* In order to do so, you will need to find the correct MongoDB file to configure. Enter the following commands:

- which mongo
- ls /opt/bitnami/mongodb
- sudo vi /opt/bitnami/mongodb/mongodb.conf

7) Once the commands have been entered, search the file to change the bind_ip.

```
bind_ip = 0.0.0.0
port = 27017
```

8) Now that this property has been changed, restart the server with the following command.

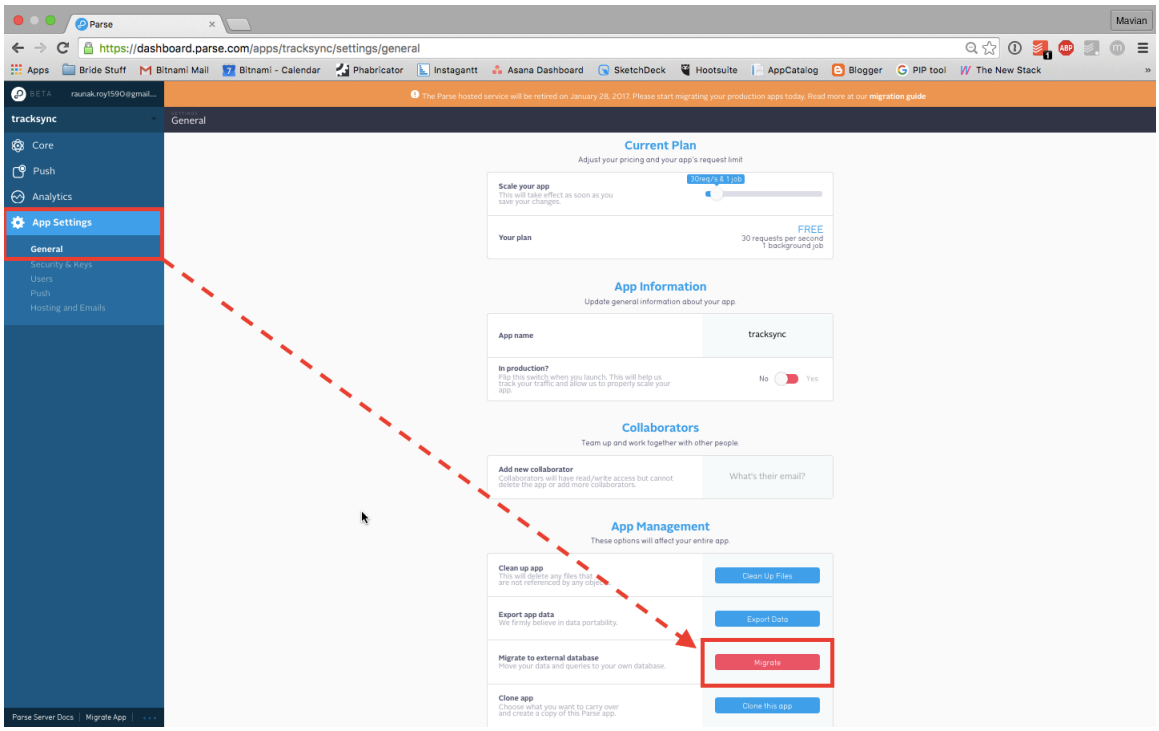
- sudo /opt/bitnami/ctlscript.sh restart mongodb

9) You will now need to create your own database and database user to migrate.

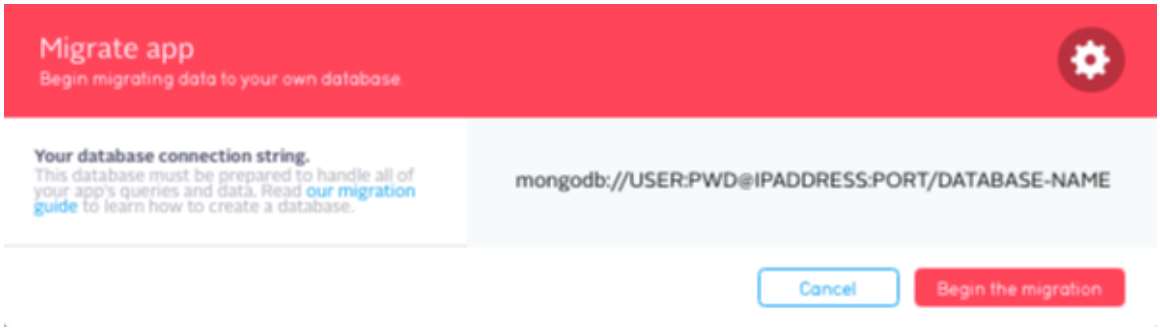
The USER specified in the connection string must have administrative privileges to the MongoDB instance, as the migration tool will set some parameters automatically during the process. The (We used DATABASE: test USER: testuser PWD: password)

```
> use test
switched to db test
> db.createUser({user: "testuser", pwd: "password", roles: [ "readWrite", "dbAdmin" ]})
Successfully added user: { "user" : "testuser", "roles" : [ "readWrite", "dbAdmin" ] }
>
```

10) Next, Use Parse's database migration tool to transfer your data. Log in to the Parse website and navigate to the App Settings -> General page. Click the Migrate button in the App Management-> Migrate

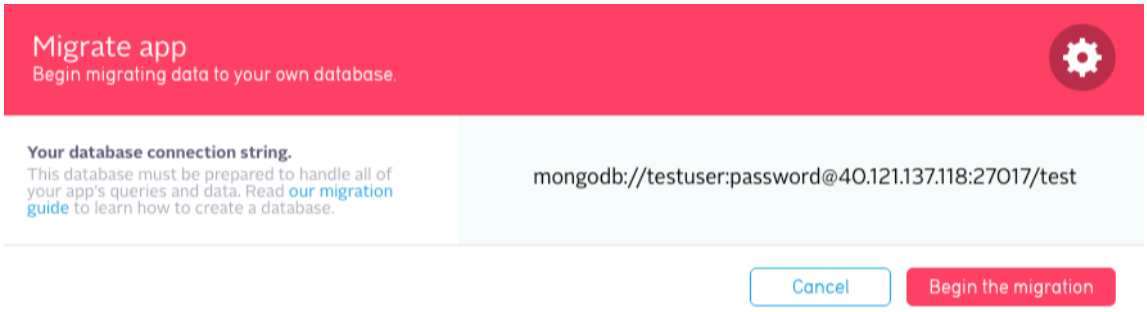


11) Once you have clicked 'Migrate,' enter the connection string for the MongoDB database server in the form using the format below.

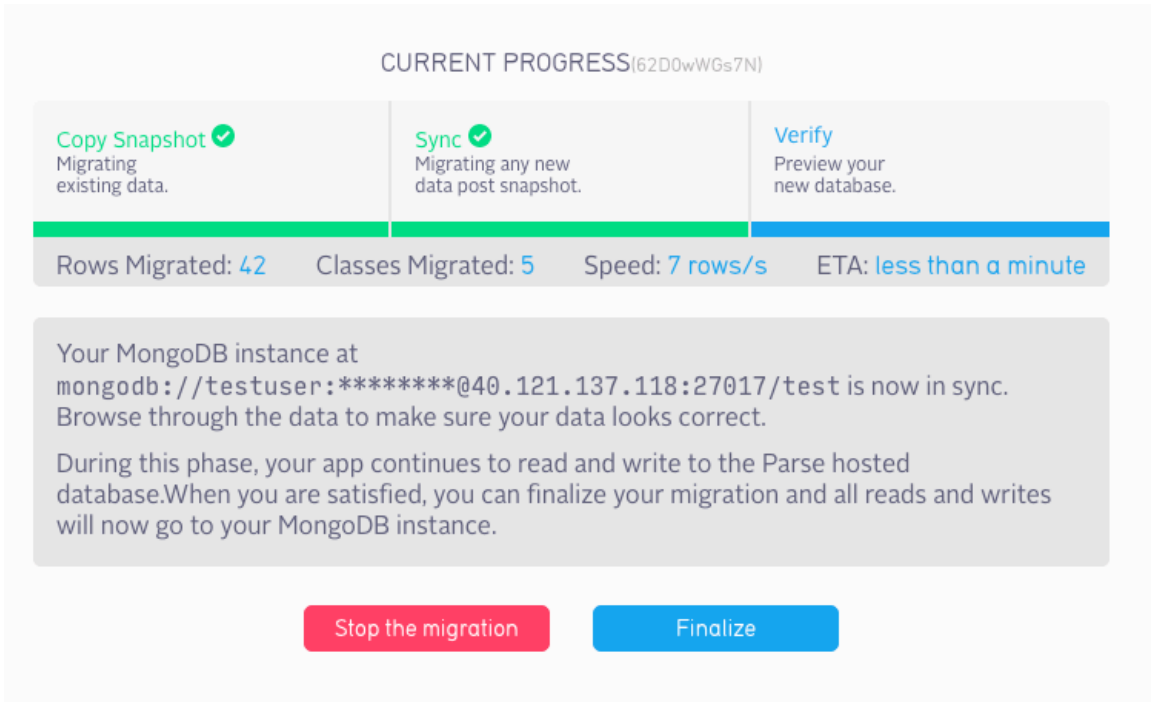


Replace the USERNAME, PASSWORD, SERVER-NAME, SERVER-PORT and DATABASE-NAME with the values that you had created for your database.

The PORT for MongoDB is 27017, as referred to in step 7.



12) If your data has migrated successfully, you should see the screen below:

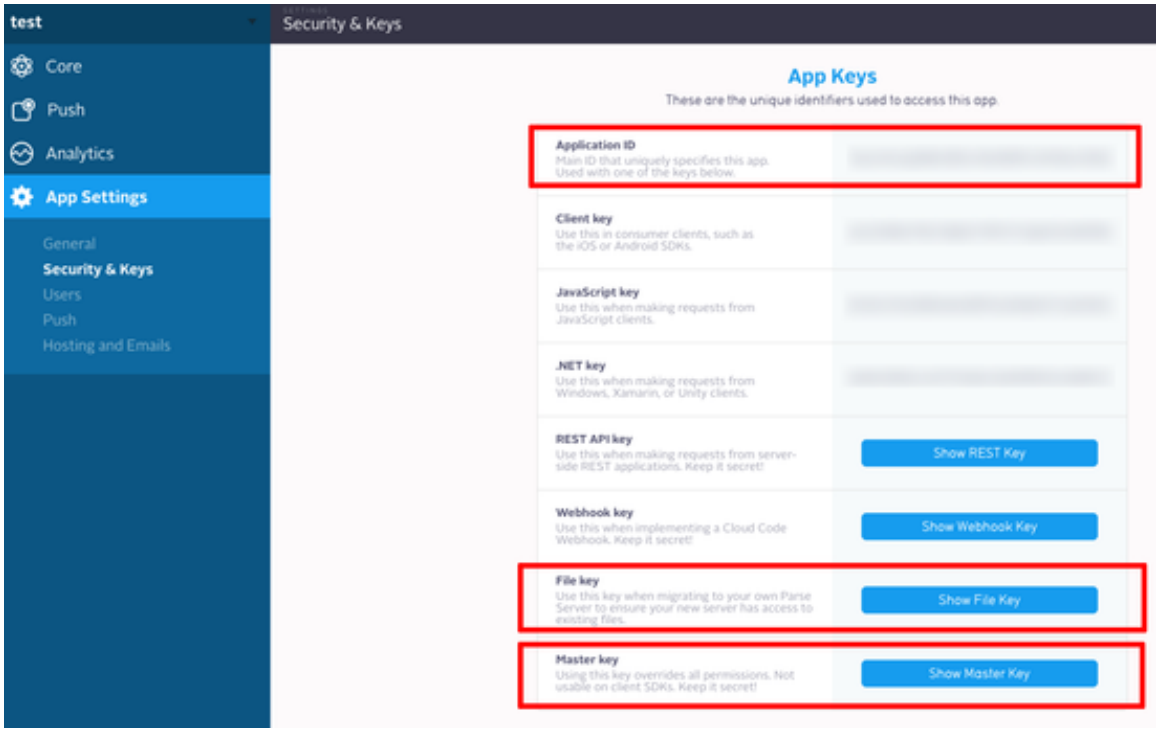


End of Exercise 4.1

Exercise 4.2: Set Up Local Parse Server:

The next step is to configure your application to use the Bitnami Parse Server Stack instead of the hosted Parse service. Follow the steps below:

1) Log in to the Parse website and navigate to the *App Settings -> Security & Keys* page. Note the values of the *Application ID*, *File Key* and **Master Key** settings.



2) Open the server.js file by typing the following commands:

- sudo nano server.js

3) Edit the */parse/htdocs/server.js* file and insert the credentials from the previous steps, as shown below:

```
// Specify the connection string for your mongodb database
// and the location to your Parse cloud code
var api = new ParseServer({
    databaseURI: 'mongodb://root:bitnami@127.0.0.1:27017/admin',
    cloud: './cloud/main.js',
    appId: 'myappid',
    masterKey: 'mymasterkey',
    fileKey: 'myfilekey',
    serverURL: 'http://100.108.94.60:80/parse'
});
```

Restart the Parse server:

- sudo /opt/bitnami/ctlscript.sh restart parse

```
bitnami@Bitnami:~/apps/parse/htdocs$ sudo /opt/bitnami/ctlscript.sh restart parse
info:    Forever stopped process:
    uid  command                          script    forever pid  id logfile                                  uptime
[0] z0H2 /opt/bitnami/nodejs/bin/.node.bin server.js 3202    3209    /opt/bitnami/apps/parse/.forever/z0H2.log 0:0:15:26.199
/opt/bitnami/apps/parse/scripts/ctl.sh : parse stopped
warn:    --minUptime not set. Defaulting to: 1000ms
warn:    --spinSleepTime not set. Your script will exit if it does not stay up for at least 1000ms
info:    Forever processing file: server.js
/opt/bitnami/apps/parse/scripts/ctl.sh : Parse started
```

End of Exercise 4.2

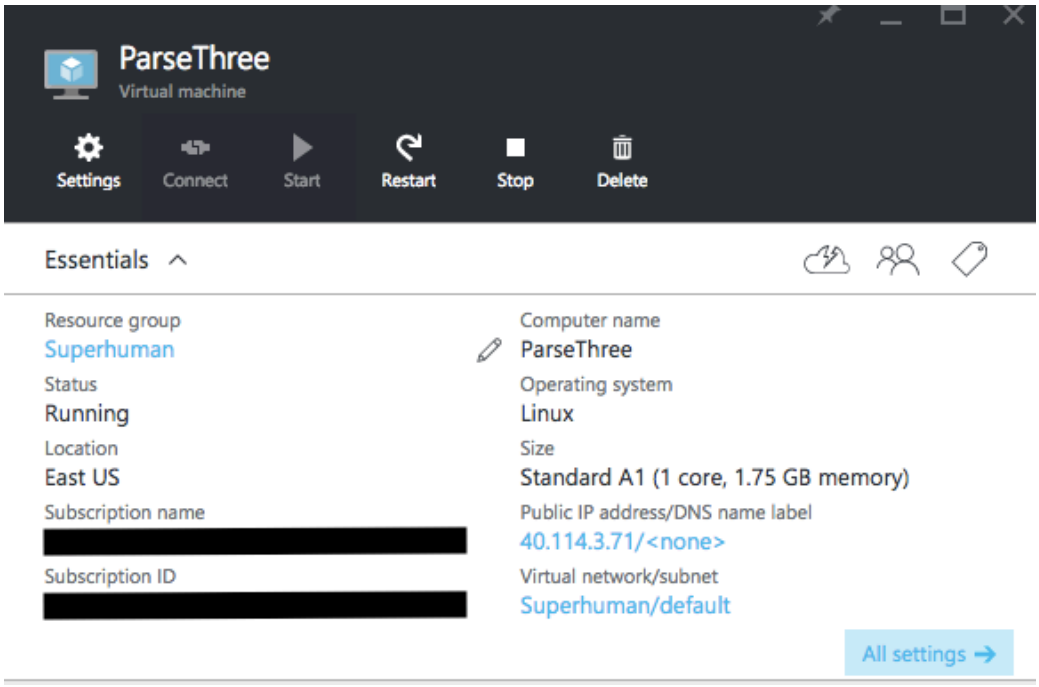
Congratulations! Your application should now be able to connect to the Bitnami Parse Server Stack!

Validate Lab Completion:

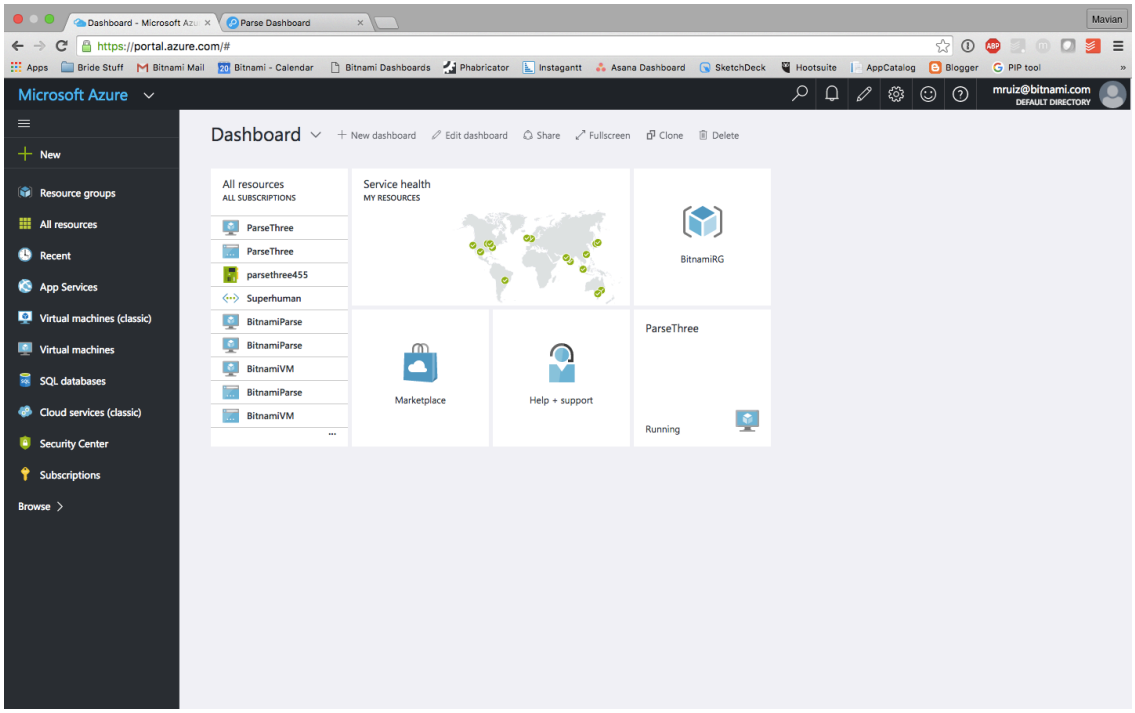
Now that you have stood up your Bitnami Parse Server and its' dashboard, there are many things that you can do in order to make your blog more unique. If you have more questions, feel free to check out our Bitnami Wiki page for answers: https://wiki.bitnami.com/Applications/Bitnami_Parse_Server

In order to submit your Bitnami Parse Super Human lab for completion, please send screenshots of the following:

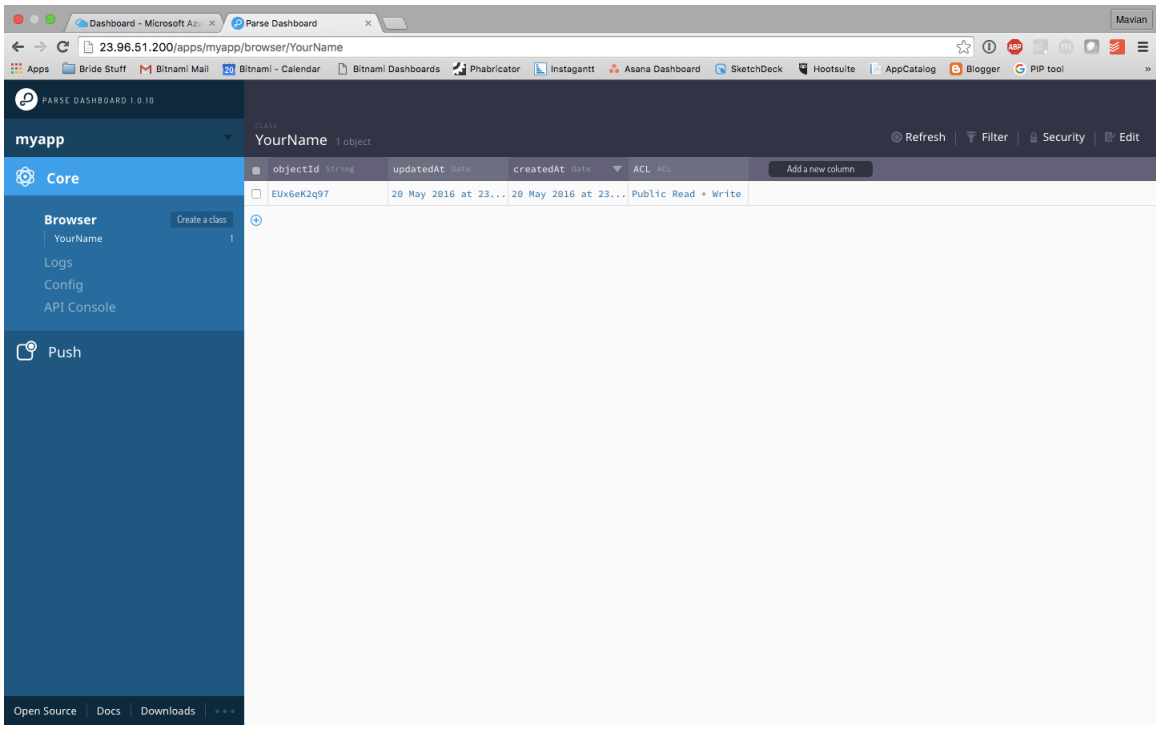
1) Your VM Essentials page within your Azure Portal



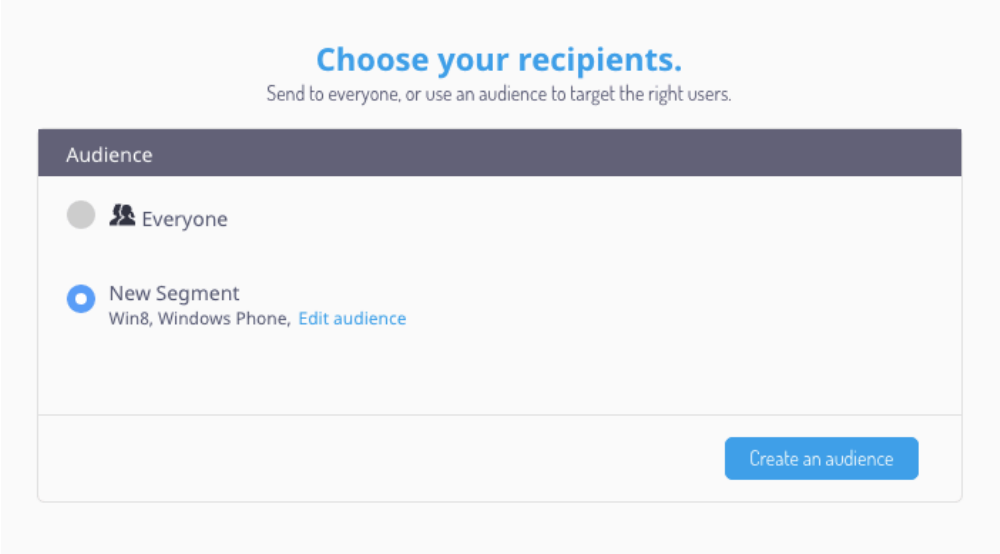
2）Your Bitnami Parse VM Pinned to your dashboard



3）Your Parse Dashboard, including your URL bar



4）Your new audience segment



5）Your Push Notification preview