
RealDeviceMap Documentation

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The contents of this repo is a proof of concept and is for educational use only!

This documentation is out of date, please refer to the [wiki](<https://github.com/RealDeviceMap/RealDeviceMap/wiki>) for more current information!

RealDeviceMap is a Leaflet/OSM based Frontend with backend features. It includes a JSON and Protobuf parser for Pokemon Go Data Objects. It also includes a basic proof of concept Instance and Device Manager.

This documentation covers the setup and configuration of RealDeviceMap (RDM). Beta features will also be covered in this documentation and will be noted accordingly.

1.1 Requirements

RealDeviceMap can run anywhere and doesn't need to be run on MacOS. It doesn't even need to run in the same network, so you can run RDM on a VPN or similar.

- [Docker](#) (and [docker-compose](#) if not included already)
- At least one [RealDeviceMapUI](#) Device-Controller
- (optional) Existing MySQL Database, or you can use the included database included in the docker.

1.2 Installation

This guide assumes you have the *requirements installed*.

- *RDM Setup Process using Docker (any OS)*
 - *RDM Setup Process using SwiftEnv (Ubuntu only)*
 - *What Next?*

1.2.1 RDM Setup Process using Docker (any OS)

- Create a GitHub access token:

Create a token with [repo] and [read:packages] here <https://github.com/settings/tokens/new> and copy the token

- Log into GitHub Package cloud (using your username as username and the token you created as password):

```
docker login docker.pkg.github.com/realdevicemap/realdevicemap
```

- Create a new folder for your compose files and RealDeviceMap:

```
mkdir compose/rdm
```

- Switch into that folder:

```
compose/rdm
```

- Get the composer file:

```
wget https://raw.githubusercontent.com/RealDeviceMap/RealDeviceMap/master/docker-  
compose.yml
```

- Edit the file:

```
nano docker-compose.yml
```

- If you are using the RDM included docker database

- Edit the values for 'DB_USERNAME' & 'DB_PASSWORD' and 'MYSQL_USER MYSQL_PASSWORD'. Recommend using 'rdmuser' as the username and a secure password. The username and password should match in both sections.
- Edit the value for 'MYSQL_ROOT_PASSWORD' to a secure password for the root user.
- Everything else can stay at default
- if you run a database on port 3306 already (and not using it for this project):
 - * edit 3306:3306 to 3307:3306 for example. The db will then be accessible on the host (localhost) at port 3307
- Start the docker Database Server:

```
docker-compose up -d db
```

- If you are using an existing database

- Edit the values for 'DB_HOST', 'DB_DATABASE', 'DB_USERNAME' & 'DB_PASSWORD' to match your existing database configuration.
- Remove or comment out the following lines/sections from the document:

```
depends_on:  
- db  
  
...  
  
db:  
  image: mysql
```

(continues on next page)

(continued from previous page)

```

command: --character-set-server=utf8mb4 --collation-server=utf8mb4_
↪unicode_ci
container_name: realdevicemap-db
restart: unless-stopped
environment:
  MYSQL_ROOT_PASSWORD: YourStrongRootPassw0rd!
  MYSQL_DATABASE: rdmdb
  MYSQL_USER: rdmuser
  MYSQL_PASSWORD: YourStrongPassw0rd!
ports:
  - 3306:3306
volumes:
  - data:/var/lib/mysql
#   - /etc/localtime:/etc/localtime:ro

```

- Start the RealDeviceMap Server (don't add -d the first time so we can get the token):

```
docker-compose up rdm
```

- Visit <http://localhost:9000> (or whatever the server ip/hostname to your VPN is) and create an admin account with the access-token you see in the output of that command
- The map will start at 0,0 (blue ocean)
- Click Dashboard -> Settings and edit the start location
- RDM is now running on your system
- (you can now press Ctrl-C to stop in attached mode and start it again with:

```
docker-compose up -d rdm
```

1.2.2 RDM Setup Process using SwiftEnv (Ubuntu only)

- Install SwiftEnv:

```

git clone https://github.com/kylef/swiftenv.git ~/.swiftenv
echo 'export SWIFTENV_ROOT="$HOME/.swiftenv"' >> ~/.bash_profile
echo 'export PATH="$SWIFTENV_ROOT/bin:$PATH"' >> ~/.bash_profile
echo 'eval "$(swiftenv init -)"' >> ~/.bash_profile

```

- Install RealDeviceMap dependencies:

```

sudo apt-get update
sudo apt-get install -y libssl-dev libcurl4-openssl-dev libmysqlclient-dev uuid-
↪dev imagemagick mysql-client-5.7
sudo sed -i -e 's/-fabi-version=2 -fno-omit-frame-pointer//g' /usr/lib/x86_64-
↪linux-gnu/pkgconfig/mysqlclient.pc
sudo cp /usr/bin/convert /usr/local/bin

```

- Clone RealDeviceMap:

```

git clone https://github.com/RealDeviceMap/RealDeviceMap
cd RealDeviceMap

```

- Install required Swift version:

```
swiftenv install
```

- Start RealDeviceMap:
 - Start RDM with default settings:

```
swift run
```

- Remember to add Enviroment variables as needed:

```
DB_PASSWORD=x swift run
```

- Visit <http://localhost:9000> (or whatever the server ip/hostname to your VPN is) and create an admin account with the access-token you see in the output of that command
- The map will start at 0,0 (blue ocean)
- Click Dashboard -> Settings and edit the start location
- RDM is now running on your system

1.2.3 What Next?

- Setup *Map Images*
- Setup one or more *RealDeviceMap-UIControl Device Controllers*

1.3 Map Images

This guide assumes you have a working RDM installed.

- *On Linux*
- *On MacOS*
- *On Windows*
- *Example Images*

1.3.1 On Linux

- find the volume name (usually named rdm_images or realdevicemap_images):

```
docker volume ls
```

- find it's "Mountpoint" (probably something like /var/lib/docker/volumes/rdm_images/_data):

```
docker volume inspect rdm_images
```

- add images to egg, gym, pokemon, pokestop and unkown_egg in there
- restart rdm to create raid images from the compose/rdm folder:

```
docker-compose down && docker-compose up -d
```

1.3.2 On MacOS

- stop run docker-compose down
- edit docker-compose.yml
- change

```
images:/perfect-deployed/realdevicemap/resources/webroot/static/img
```

to

```
/absolut/path/to/images:/perfect-deployed/realdevicemap/resources/webroot/static/  
↪img
```

- go to that folder (e.g.: /absolut/path/to/images)
- add images to egg, gym, pokemon, pokestop and unkown_egg in there
- restart rdm to create raid images (from the compose/rdm folder):

```
docker-compose down && docker-compose up -d
```

1.3.3 On Windows

- (todo)

1.3.4 Example Images

- example images can be found [here](#) (extract all contents from example images into the volume path) (Icons by Icons8)

1.4 Updating

1.4.1 Updating with docker-compose

```
docker-compose pull  
docker-compose down  
docker-compose up -d
```

1.5 Dashboard

This documentation covers the setup and configuration of RealDeviceMap (RDM).
Beta features will also be covered in this documentation and will be noted accordingly.

1.5.1 Settings

General

- Page Name: The name of your map, will be shown on the top left of the browser.

Map

- Start Latitude\Longitude: This will be the center of the map when you first open it up.
- Start Zoom: Starting zoom level of your map (default: 14)

Pokemon

- Default time left on new pokemon (in seconds): If you are doing 10 minute rounds on your instances this could be set to 1200 (20 minutes)
- Default time left on re-seen pokemon (in seconds):

Webhook

- URLs (separated by “;”): List any webhooks that you want RDM to send data to here.
- Send Delay:

Misc

- Max Pokemon ID: Maximum Pokemon ID that RDM is setup to recognize
- Locale:

Enable Clearing of removed Pokestops/Gyms (Beta): RDM will automatically clear any pokestops that are not found/possibly removed or turned into a gym.

Enable Register:

1.5.2 Devices

This is where all your devices that you setup with RealDeviceMapUI-Control will appear.

You will also need to have atleast one instance setup before you can assign a device.

Device Table

- UUID: The unique name you set in config.swift for the listed device.
- Username: A username will only be populated if you are running AccountManager for the listed device.
- Instance: The name of the assigned instance for the listed device.
- Host: The RDM assigned IP:Port of the listed device.
- Last Seen: The last time RDM had communication with the listed device.

Assign Instance

- Select Instance: Select the Instance you want this device to run.

1.5.3 Accounts

If you have accounts added, the top of this page will give you information on how they are being used or what condition they are in.

Add Accounts

- Account Level: The level of the accounts to be imported.
- Accounts: A list of accounts to import. Can be in either the following formats:

```
username1,password1
username2,password2
username3,password3
```

```
username4 password4
username5 password5
username6 password6
```

1.5.4 Instances

- [Create a new Instance](#)
- [Mapping Tools](#)
- [Scan Area Examples](#)

Instances control the devices. Each Instance has a specific scheduler type. Instances can have multiple devices assigned to it.

Create a new Instance

- Open RDM in the Webbrowser and login as admin
- Go to Dashboard -> Instances and click “Add New Instance”
- Scheduler Types:
 - Circle Pokemon Scans for Pokemon (Nearby) at exactly the coords specified
 - * Name: A unique name of the Instance
 - * Timezone offset: Not used
 - * Min Level: Minimum worker level
 - * Max Level: Maximum worker level

- * Scan Area: List of Lat,Lon that the worker will teleport to to scan for Pokemon.
- * Notes: The worker will stay at each location for approximately 20 seconds and then move on to the next lat,lon
- Circle Raid Scans for Raids at exactly the coords specified
 - * Name: A unique name of the Instance
 - * Timezone offset: Not used
 - * Min Level: Minimum worker level
 - * Max Level: Maximum worker level
 - * Scan Area: List of Lat,Lon that the worker will teleport to to scan for Raids.
 - * Notes: The worker will stay at each location for approximately 10 seconds and then move on to the next lat,lon
- Auto Quest Scans all pokestops in the geofence for quests
 - * Name: A unique name of the Instance
 - * Timezone offset: Your timezone offset from GMT in seconds. (ie. if you are GMT-8 do -8*3600=-28800). This is used to auto clear your database quests at midnight local time.
 - * Min Level: Minimum worker level
 - * Max Level: Maximum worker level
 - * Scan Area: This scheduler type requires your database to be populated with pokestops already and then uses geofences to pull the pokestops. Geofences should be populated like
 - * Notes: You can use multiple geofences for this instance.
- Pokemon IV Scans pokemon for IV's
 - * Name: A unique name of the Instance
 - * Timezone offset: Not used
 - * Min Level: Minimum worker level (You probably want this set to 30)
 - * Max Level: Maximum worker level (You probably want this set to 40)
 - * Scan Area: This instance uses geofences like above.
 - * Pokemon IDs: List from highest priority to lowest of the pokemon you want to scan for IVs.
 - * Notes: Put the highest priority IDs at the beginning, things like Tyranitar, Dragonite, etc. but also put other IDs after so the IV workers are always working. If a high priority pokemon spawns it will jump to the top of the list.
- Save the Instance
- Start the Device Controller for that device one
- Go to Dashboard -> Devices and click "Assign Instance" for that new device
- Select the instance and click "Assign"
- Your device should now start scanning

Mapping Tools

- RDM Tools
- <https://jennerpalacios.github.io/PoGoMappingTool/>
- <https://www.mapdevelopers.com/draw-circle-tool.php>
- <https://thermoscookies.github.io/rdmsort/>

Scan Area Examples

Geofence Example: (for Auto Quest and Pokemon IV)

```
[Geofence 1]
48.3515038749951,-123.4311030273437
48.2711288926114,-123.4489558105469
48.2125948327425,-123.3569453125
48.2775269919901,-123.1619379882812
48.3451150449351,-123.258068359375
[Geofence 2]
48.3861721206049,-122.7980158691406
48.2802687893262,-122.818615234375
48.333247949859,-122.9449580078125
```

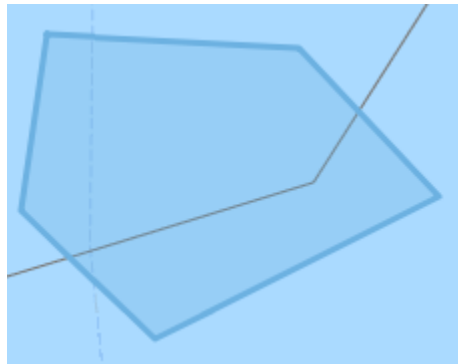


Fig. 1: Geofence 1

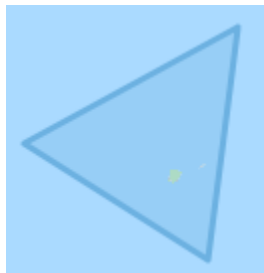


Fig. 2: Geofence 2

Circle List Example: (for Circle Pokemon and Circle Raids)

```
32.30280417394316,-64.78238582611085
32.30287672107444,-64.77191448211671
32.2958756553048,-64.78732109069826
32.296165865665564,-64.77667808532716
32.30229634239795,-64.79234218597414
```

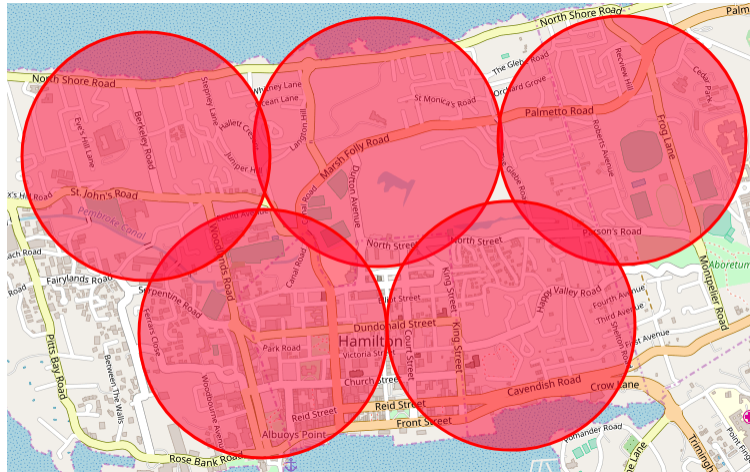


Fig. 3: Circle List

1.5.5 Auto-Assignments

This is how RDM handles scheduling.

Add New Assignment

- Select Target Device: Choose which device you want to set a scheduled task for.
- Select Destination Instance: Choose which instance you want the device to run.
- Time (Empty for “On Complete”): What time (in 24 hour format) do you want the chosen device to run the chosen instance
 - On Complete could be used to auto switch to the ‘On Complete’ Pokemon Circle task after the Auto Quest task is completed.

1.5.6 Users

Not yet implemented.

1.5.7 Groups

Not yet implemented.

1.5.8 Clear All Quests

This is where you can clear all the quests in your database when quest changes are made midday.

1.6 Develop

- *Install Requirements*
- *Generate the Xcode Project*
- *Configure Xcode Project*

1.6.1 Install Requirements

- Xcode 9+: From App Store
- MySQLClient 5.7: `brew install mysql@5.7 && brew link mysql@5.7 --force`
- ImageMagick: `brew install imagemagick`

1.6.2 Generate the Xcode Project

- Run this in the RDM folder: `swift package generate-xcodeproj`

1.6.3 Configure Xcode Project

- Open the newly generated `.xcodeproj` file.
- Open Product -> Scheme -> Edit Scheme...
- Select Run -> Arguments
- Add this environment variable: `PROJECT_DIR=${PROJECT_DIR}`
- Add other environment variables like `DB_PASSWORD` etc.
- Click Close
- Now you can use the Run button to debug RDM (Breakpoints etc. also work)

1.7 Deploy

- *Build realdevicemap/realdevicemap docker image*
- *Use the new tag in the .yml*

1.7.1 Build realdevicemap/realdevicemap docker image

Run this in the RDM folder: `sh .jenkins/build.sh new-tag`

1.7.2 Use the new tag in the .yaml

Edit `docker-compose.yaml` and change `latest` to `new-tag`

Instructions for RDMUI and RDMUI Beta

2.1 Requirements

- MacOS (real or VM) with Xcode (10.1 recommended)
- Homebrew:

```
/usr/bin/ruby -e $(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/  
↩master/install)
```

- Cocoa Pods:

```
sudo gem install cocoapods
```

- Iphone with one of the following installed: | **The following two apps are 3rd party apps. We do not own these apps and do not support them in any way. | Use of PoGo++ and iSpoofer may be in violation of Niantic TOS and either or both apps may be in violation of applicable laws. Use them at your own risk!**
- There are currently not public MITM Apps available.

2.2 Device Setup

2.2.1 Setting up Poke++

- Must be activated with a mapping subscription
- Fake Location: On
- Time to Save Location: Startup/Forever
- URL: <http://localhost:8080/data> (yes always localhost!)

- Frequency (Seconds): 0
- Send Raw Protos: On
- Fake Location Fetch: On
- URL: <http://localhost:8080/loc> (yes always localhost!)

2.2.2 Setting up iSpoofers

- Must be on mapping version with a activated subscription
- Fake Location: On
- URL: <http://localhost:8080/data> (yes always localhost!)
- URL: <http://localhost:8080/loc> (yes always localhost!)

2.3 Installation

This guide assumes you have the *requirements installed* and a *device setup*.

If you want to run multiple devices, follow these instructions for each device in a new folder.

2.3.1 Setting up the Xcode project

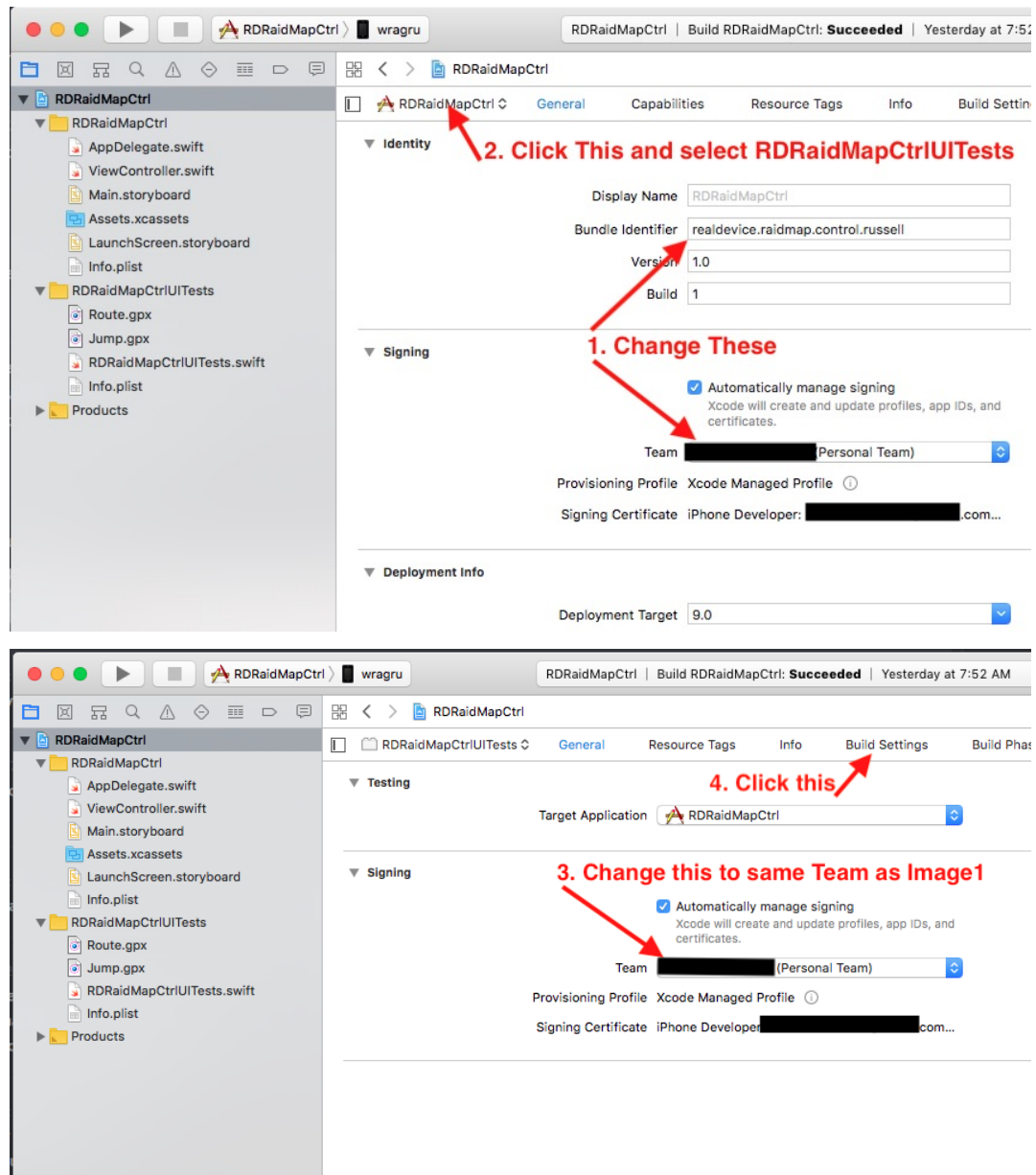
- Clone the project:

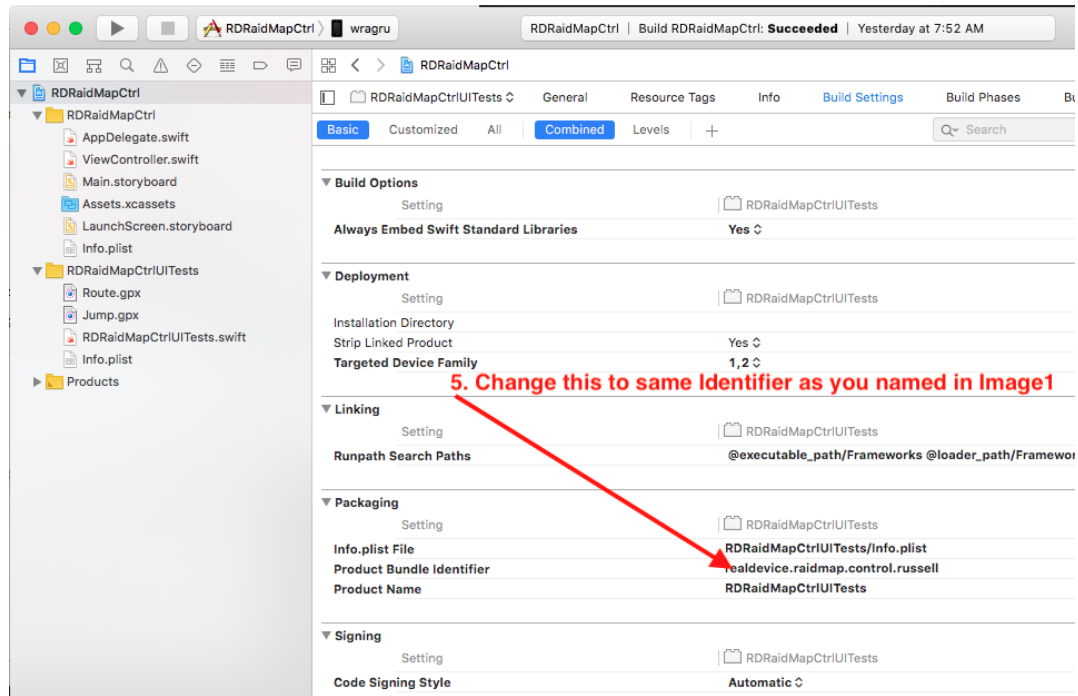
```
git clone https://github.com/RealDeviceMap/RealDeviceMap-UIControl
cd RealDeviceMap-UIControl
```

- Run (go grab a coffee while you run this the first time):

```
pod install
```

- Open the Xcode Project (open RealDeviceMap-UIControl.xcworkspace)
- Fix code signing issues and bundle id conflicts:





- Close Xcode
- Run Manager:

```
cd Manager
swift run RDMUICManager -builds 3 -timeout 300 -more flags
```

- Add new Devices:
 - Get the Device UUID from Xcode *Devices and Simulators* Screen
 - Set the Device Name to something unique you can recognise (e.g. SE1)
 - Edit backendURLBaseString to your server where RDM is running on. It needs to access the WebHook server by default running at port 9001.
 - Doublecheck if you can access that url on that phone. If it says “File / does not exist” it works.
- It should now take a couple minutes to build and eventually open Pogo. If you get device is not assigned to an instance follow the [Instances instructions](#).