

Fast Basic Deployment Heroku

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Introduction

*NOTE: This guide is a WIP and this alpha version of QMethod requires significantly more involvement that has been laid out here to fully deploy.

This article is based upon [this guide](#) and the following method is only applicable to deployment on Heroku.

In the final version of QMethod, there may be a less hands on approach to deploying/initialising a QMethod Heroku App entirely through the browser.

Prerequisites

First you will need to create a Heroku account and MongoDB Atlas account, as well as install the MongoDB Compass application onto your local machine. Please follow the following guides on how to do so:

[Signup for Heroku](#)

[Signup for MongoDB Atlas](#)

[Download and install MongoDB Compass](#)

Setting up your database

We will be hosting the data from our survey on a seperate remote host. This can be done either through MongoDB Atlas or mLab.

Mongo Atlas

First, go to [MongoDB Atlas](#) and sign up for a free account. MongoDB Atlas is a Database as a Service provider that provides encrypted remote mongoDB instances, which we will use to store the survey recipient data, with free and paid tiers of service. MongoDB Atlas clusters make use of the General Purpose SSD (gp2) EBS volumes, with [AES-256 encryption](#).. All communication to and from the server is also encrypted from MOTM attacks through the use of TLS/SSL socket security.

Get started free

No credit card required

Email Address

First Name

Last Name

Password

- ✓ 8 characters minimum
- ✓ One number
- ✓ One letter
- ✓ One special character


☒ I agree to the [terms of service](#).


Get started free


Already have an account? [Sign in](#).

Next, select your server provider. It is recommended that you select the free AWS service tier (M0) with 512MB of storage. (This is in fact approximately enough for at least ~250,000 survey responses and thus should be sufficient even for live deployment.)

Cloud Provider & Region






















AWS, Singapore (ap-southeast-1) ▾

Create a free tier cluster by selecting a region with **FREE TIER AVAILABLE** and choosing the **M0** cluster tier below.

★ recommended region ⓘ

NORTH AMERICA	EUROPE	AUSTRALIA
<div>  N. Virginia (us-east-1) ★ <div>FREE TIER AVAILABLE</div> </div>	<div>  Ireland (eu-west-1) ★ </div>	<div>  Sydney (ap-southeast-2) ★ </div>
<div>  Ohio (us-east-2) ★ </div>	<div>  London (eu-west-2) ★ </div>	<div> <div>ASIA</div> </div>
<div>  N. California (us-west-1) </div>	<div>  Paris (eu-west-3) ★ </div>	<div>  Tokyo (ap-northeast-1) ★ </div>
<div>  Oregon (us-west-2) ★ </div>	<div>  Frankfurt (eu-central-1) ★ <div>FREE TIER AVAILABLE</div> </div>	<div>  Seoul (ap-northeast-2) </div>
<div>  Montreal (ca-central-1) </div>	<div> <div>SOUTH AMERICA</div> </div>	<div>  Singapore (ap-southeast-1) ★ <div>FREE TIER AVAILABLE</div> </div>
	<div>  Sao Paulo (sa-east-1) </div>	<div>  Mumbai (ap-south-1) <div>FREE TIER AVAILABLE</div> </div>

Configure clusters across multiple regions (M10 and up)

☐ NO

Better withstand data center outages and optimize for reads in selected service areas.

Cluster Tier

M0 (Shared RAM, 512 MB Storage) >

Encrypted

Additional Settings

MongoDB 3.6, No Backup >

Cluster Name

QMethod ▾

One time only: once your cluster is created, you won't be able to change its name.

QMethod

Cluster names can only contain ASCII letters, numbers, and hyphens.

Now, after your cluster has finished initialising, go to the Security > MongoDB Users Tab and add a new user.

<https://github.com/CITS3200GroupD/QMethod/wiki/Fast-Basic-Deployment-Heroku>

3/15

CONTEXT
Project 0

PROJECT
Clusters
Stitch Apps
Alerts 0
Backup
Users & Teams

Clusters

Build a New Cluster

Overview **Security**

MongoDB Users IP Whitelist Peering Enterprise Security

+ ADD NEW USER

User Name Authentication Method MongoDB Roles

Enter a username (such as admin) and a password. This will be used by the application itself in a driver to access your database. Ensure that Read and Write access is checked. Please remember and copy down this password and save it for later, as you will need this information later.

✕

Add New User

SCRAM Authentication

SCRAM is MongoDB's default authentication method.

e.g. new-user_31

SHOW

User Privileges

Atlas admin

Read and write to any database

Only read any database

[Show Advanced Options](#)☐ Save as temporary user

Cancel

Add User

CONTEXT
Project 0

PROJECT
Clusters
Stitch Apps
Alerts 0
Backup
Users & Teams
Settings
Docs
Support

Clusters

We are deploying your changes (current action: configuring MongoDB)

Build a New Cluster

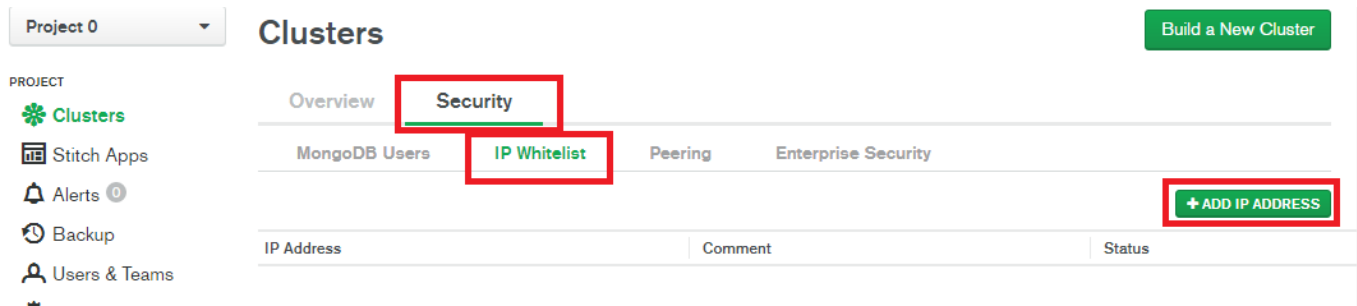
Overview **Security**

MongoDB Users IP Whitelist Peering Enterprise Security

+ ADD NEW USER

User Name	Authentication Method	MongoDB Roles	Actions
admin	SCRAM	readWriteAnyDatabase@admin	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>

Now go to the Security > IP Whitelist tab, and add a new IP Address.

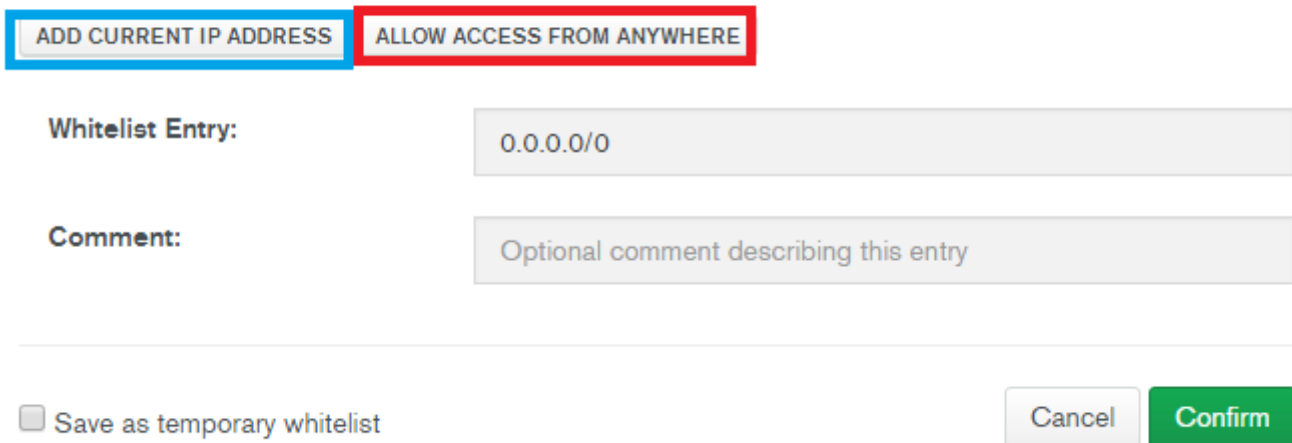


The screenshot shows the Heroku Clusters interface. On the left is a sidebar with navigation links: Clusters, Stitch Apps, Alerts, Backup, and Users & Teams. The main area is titled 'Clusters' and has a 'Build a New Cluster' button. Below the title are tabs for 'Overview', 'Security', 'MongoDB Users', 'IP Whitelist', 'Peering', and 'Enterprise Security'. The 'Security' tab is selected, and the 'IP Whitelist' sub-tab is also selected. A red box highlights the '+ ADD IP ADDRESS' button in the top right corner. Below the tabs is a table with columns for 'IP Address', 'Comment', and 'Status'.

You will want to repeat this process twice, as you will need to allow access firstly from your own IP address, as well as any IP address (for now). This is because the free version of the Heroku application uses a dynamic IP address which changes from time to time, whilst paid tiers of Heroku allow for a fixed static IP, which we can later add to the whitelist (whilst removing the 0.0.0.0/10 entry) for better security later on.

Add Whitelist Entry

Add a whitelist entry using either CIDR notation or a single IP address. [Learn more.](#)



The screenshot shows the 'Add Whitelist Entry' form. At the top, there are two buttons: 'ADD CURRENT IP ADDRESS' (highlighted with a blue box) and 'ALLOW ACCESS FROM ANYWHERE' (highlighted with a red box). Below these is a 'Whitelist Entry:' label followed by a text input field containing '0.0.0.0/0'. Below that is a 'Comment:' label followed by a text input field containing 'Optional comment describing this entry'. At the bottom left is a checkbox labeled 'Save as temporary whitelist'. At the bottom right are 'Cancel' and 'Confirm' buttons.



The screenshot shows the Heroku Clusters interface with the 'IP Whitelist' tab selected. A yellow warning box at the top states: 'You will only be able to connect to your cluster from the following list of IP Addresses:'. Below this is a table with columns for 'IP Address', 'Comment', 'Status', and 'Actions'. There are two entries in the table:

IP Address	Comment	Status	Actions
[Redacted] (includes your current IP address)		Inactive	EDIT DELETE
0.0.0.0/0 (includes your current IP address)		Inactive	EDIT DELETE

Now, go back to the Clusters > Overview page and click connect.

The screenshot shows the Heroku Clusters Overview page for a cluster named 'QMethod' (Version 3.6.7) in the 'Project 0' dropdown. The left sidebar contains navigation links: Clusters, Stitch Apps, Alerts, Backup, Users & Teams, Settings, Docs, and Support. The main content area has tabs for 'Overview' and 'Security'. A search bar 'Find a cluster...' is at the top. The cluster details on the left include: **SANDBOX** (QMethod), Version 3.6.7, METRICS, **CONNECT** (highlighted with a red box), and a menu icon. Below this, it shows INSTANCE SIZE (M0), REGION (AWS / Singapore (ap-southeast-1)), TYPE (Replica Set - 3 nodes), and LINKED STITCH APP (None Linked - [Link Application](#)). On the right, there are two performance graphs: 'Operations' (R: 0, W: 0, scale 0 to 100.0/s) and 'Connections' (0, scale 0 to 100 max), both showing data for the 'Last 6 Hours'.

First, we want to setup our MongoDB Compass application on our local machine, which will allow us to monitor, export and import raw database data. If you have not already installed Compass, please do so.



Connect to QMethod

1 Check the IP Whitelist

You will only be able to connect to your cluster from the following list of IP addresses

60.225.45.108/32 (includes your current IP address)

● Active

0.0.0.0/0 (includes your current IP address)

● Active

+ ADD ENTRY

2 Choose a connection method:

Connect with the Mongo Shell

Mongo Shell with TLS/SSL support is required



Connect Your Application

Get a connection string and view driver connection examples



Connect with MongoDB Compass

Download Compass to explore, visualize, and manipulate your data



See methods to add data and diagnostics in the [Command Line Tools](#) shortcut from within your cluster.

Close

[< BACK](#)

Connect to Compass

1 If you have not already, click below to download Compass

Windows

Mac OS X

Other Operating Systems ▾

2 Copy the URI Connection String

[View detailed instructions](#)

I am using Compass 1.12 or later

I am using Compass 1.11 or earlier

```
mongodb+srv://admin:<PASSWORD>@/admin
```

COPY

Replace **PASSWORD** with the password for the *admin* user.

When you open Compass, it should detect the URI string from your clipboard and auto-populate the form.

Close

Copy the string that is created and open MongoDB Compass application on your local machine. You will be prompted and then you will see the connect to server form. Input the password you saved from earlier when creating the admin database user and connect.

MongoDB Compass Community - Connect

Connect View Help

CREATE FREE ATLAS CLUSTER
Includes 512 MB of data storage.
[Learn more](#)

New Connection

Favorites

SEP 12, 2018 10:07 AM
CITS3200 Group D DB

RECENTS

SEP 11, 2018 10:59 AM
localhost:27017

SEP 2, 2018 6:25 PM
cluster0-91f3x.mongo...

SEP 1, 2018 6:33 PM
localhost:27017

Hostname

SRV Record ☒

Authentication Username / Password

Username admin

Password

Authentication Database admin

Replica Set Name

Read Preference Primary

SSL System CA / Atlas Deployment

SSH Tunnel None

Favorite Name e.g. Shared Dev, QA Box, PRODUCTION

CONNECT

For now the database will be empty, but the application will fill it with the relevant survey data.

Databases				
CREATE DATABASE				
Database Name	Storage Size	Collections	Indexes	
admin	0.0B	0	0	
local	0.0B	7	0	

Go back to your web browser, to the clusters > overview page and connect once again.

Project 0

PROJECT

Clusters

Stitch Apps

Alerts 0

Backup

Users & Teams

Settings

Docs

Support

Clusters

OverviewSecurity

Find a cluster...

SANDBOX

QMethod

Version 3.6.7

METRICS

CONNECT

...

INSTANCE SIZE
M0

REGION
AWS / Singapore (ap-southeast-1)

TYPE
Replica Set - 3 nodes

LINKED STITCH APP
None Linked - [Link Application](#)

Operations R: 0 W: 0100.0/s

Last 6 Hours

Connections 0100 max

Last 6 Hours



Connect to QMethod

1 Check the IP Whitelist

You will only be able to connect to your cluster from the following list of IP addresses

60.225.45.108/32 (includes your current IP address)

● Active

0.0.0.0/0 (includes your current IP address)

● Active

+ ADD ENTRY

2 Choose a connection method:

Connect with the Mongo Shell

Mongo Shell with TLS/SSL support is required



Connect Your Application

Get a connection string and view driver connection examples



Connect with MongoDB Compass

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See methods to add data and diagnostics in the [Command Line Tools](#) shortcut from within your cluster.

Close

We will now need to generate the string for our application's mongoDB driver.

[< BACK](#)

Connect Your Application

1 Copy a connection string:

[See documentation on how to check the version of your driver](#)

I am using driver 3.6 or later

I am using driver 3.4 or earlier

Copy the SRV address:

```
mongodb+srv://admin:<PASSWORD>@qmethod-bf5ut.mongodb.net/test?
retryWrites=true
```

COPY

Note: If using the node.js driver make sure you specify the name of your database after making your connection ([example](#)), otherwise your collections will all appear in a database called "test". Alternatively you can replace "test" in the connection string with a different default database name.

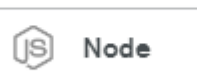
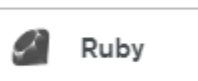
2 Replace **PASSWORD** with the password for the *admin* user

Replace **PASSWORD** with the password for the *admin* user. Please note that any special characters in your password (% , @ , and :) will need to be URL encoded.

[View your list of users or reset a password](#)

3 View driver connection examples

Failed connections can result from old versions of drivers. Check your driver version and view connection examples for your platform:



[View all MongoDB Driver Connection Examples](#)

Close

Copy this string to your clipboard. We will now be going back to our Heroku CLI terminal window and inputting this to link our database to our heroku application.


Initialising Heroku

Now that our database has been fully setup, including a compass client for monitoring and viewing raw database data, we can now create a heroku application with a link to the mongoDB database.

First, click this button.




This will automatically handle the deployment of the application for you, no hands on required! Note that this means you will have no control over the basic settings and file configuration, so for a more advanced setup, use the advanced setup guide.



Deploy your own


QMethod

A web application for aiding Q-Method based studies


 CITS3200GroupD/QMethod#deploy-test

App name

Choose a region

 United States

⌵

 Add to pipeline...

Config Vars

MONGODB_URI Required

Driver link for mongoDB database

Required

Deploy app

Custom Domain Names

<https://devcenter.heroku.com/articles/custom-domains>

By default, a Heroku app is available at its Heroku domain, which has the form [name of app].herokuapp.com. For example, an app named serene-example-4269 is hosted at serene-example-4269.herokuapp.com.

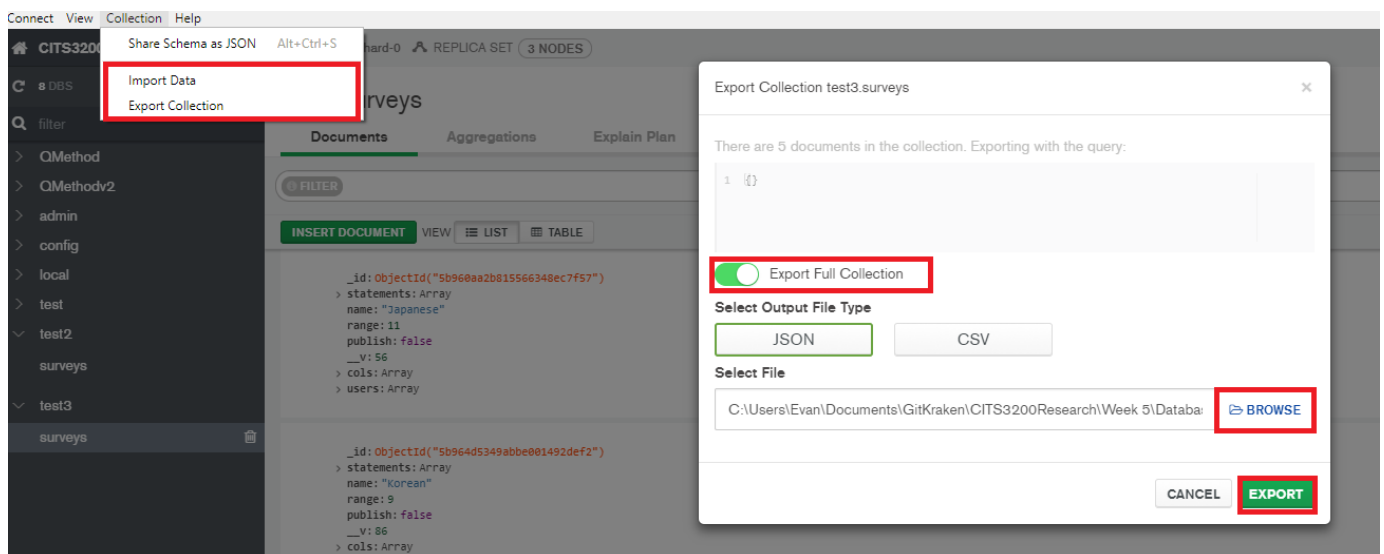
To make your app available at a non-Heroku domain (for example, www.yourcustomdomain.com), you add a custom domain to it.

You can add custom domains to any Heroku app for free (however the domain name itself will have to be paid for). For security purposes, you must verify your Heroku account to add domains to apps.

Heroku does not provide a domain registration service (for registering a custom domain name) or a DNS provider service (for hosting the DNS servers that point your custom domain name to your app).

Exporting Raw JSON data from Database

Compass allows you to export and import raw database information as a json. This may be useful to store data on your local machine instead of a remote instance.



+ Add a custom footer

▼ Pages 3

Find a Page...

[Home](#)

[Advanced Deployment to Heroku](#)

[Fast Basic Deployment Heroku](#)

+ Add a custom sidebar

Clone this wiki locally

https://github.com/CITS3200GroupD/QMethod.wiki.git

