

Connecting a MySQL workbench to Amazon Web Services' Relational Database Service



Ryan Zhou

Jul 6, 2018 · 5 min read

I followed the [official AWS guide to connect mysql Workbench to AWS RDS](#) and got my setup running within minutes, the end... Just kidding.

I got a pesky “Can’t connect to MySQL server on ‘instanceName.us-west-1.rds.amazonaws.com’ (60)” error when trying to connect to the database. So, here’s my full guide to instantiating a MySQL database on AWS and connecting to it. Lastly, I’ll briefly comment on how you can easily change this for another relational database management system, such as PostGreSQL.

Requirements

1. AWS account
2. MySQL Database admin tool

I installed the [community MySQL workbench](#) and that’s the one featured in this guide. You can also use [MySql shell](#) and I will also show how to connect to the db using the terminal. To install MySQL shell, I had update to Xcode, then run.

```
$brew update
```


```
$brew install mysql
```


STEP 1: Instantiating a AWS RDS


From your AWS console, search RDS, which stands for Relational Database Service. (Fun fact, the relational is not derived from how the tables “relate” to each other, but from the term *relation*, which is part of set theory).


To make Medium work, we log user data. By using Medium, you agree to our [Privacy Policy](#), including cookie policy.


Engine options


☐ Amazon Aurora


☒ MySQL


☐ MariaDB


☐ PostgreSQL


☐ Oracle


☐ Microsoft SQL Server


MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 16 TiB.
- Instances offer up to 32 vCPUs and 244 GiB Memory.
- Supports automated backup and point-in-time recovery.
- Supports cross-region read replicas.

☒ Only enable options eligible for RDS Free Usage Tier [Info](#) Cancel Next

Now under the DB details, we'll leave everything as is. Why not the latest and great version of MySQL you ask? There are some known issues with MySql 5.7 and AWS, so we'll just stick with mysql 5.6.x

Specify DB details

Instance specifications

Estimate your monthly costs for the DB Instance using the [AWS Simple Monthly Calculator](#).

DB engine

MySQL Community Edition

License model [Info](#)

general-public-license ▼

DB engine version [Info](#)

To make Medium work, we log user data. By using Medium, you agree to our [Privacy Policy](#), including cookie policy.



Known Issues/Limitations

Review the [Known Issues/Limitations](#) to learn about potential compatibility issues with specific database versions.



Free tier

The Amazon RDS Free Tier provides a single db.t2.micro instance as well as up to 20 GiB of storage, allowing new AWS customers to gain hands-on experience with Amazon RDS. Learn more about the RDS Free Tier and the instance restrictions [here](#).

☒ Only enable options eligible for RDS Free Usage Tier [Info](#)

Next up, nothing to change here if you want to stay in the free-tier. Otherwise, pick a db instance as hefty as you want.

DB instance class [Info](#)

db.t2.micro — 1 vCPU, 1 GiB RAM

Multi-AZ deployment [Info](#)

☐ Create replica in different zone

Creates a replica in a different Availability Zone (AZ) to provide data redundancy, eliminate I/O freezes, and minimize latency spikes during system backups.

☒ No

Storage type [Info](#)

General Purpose (SSD)

Allocated storage

20

GiB

(Minimum: 20 GiB, Maximum: 20 GiB) Higher allocated storage [may improve](#) IOPS performance.

Now we want to specify the db instance identifier, username, and password. The username and password is what we need to login later so keep this handy.

Settings

DB instance identifier [Info](#)

Specify a name that is unique for all DB instances owned by your AWS account in the current region.

mydbinstance

DB instance identifier is case insensitive, but stored as all lower-case, as in "mydbinstance". Must contain from 1 to 63 alphanumeric characters or hyphens (1 to 15 for SQL Server). First character must be a letter. Cannot end with a hyphen or contain two consecutive hyphens.

To make Medium work, we log user data. By using Medium, you agree to our [Privacy Policy](#), including cookie policy.



root

Master Username must start with a letter. Must contain 1 to 16 alphanumeric characters.

Master password [Info](#)

Confirm password [Info](#)

.....

.....

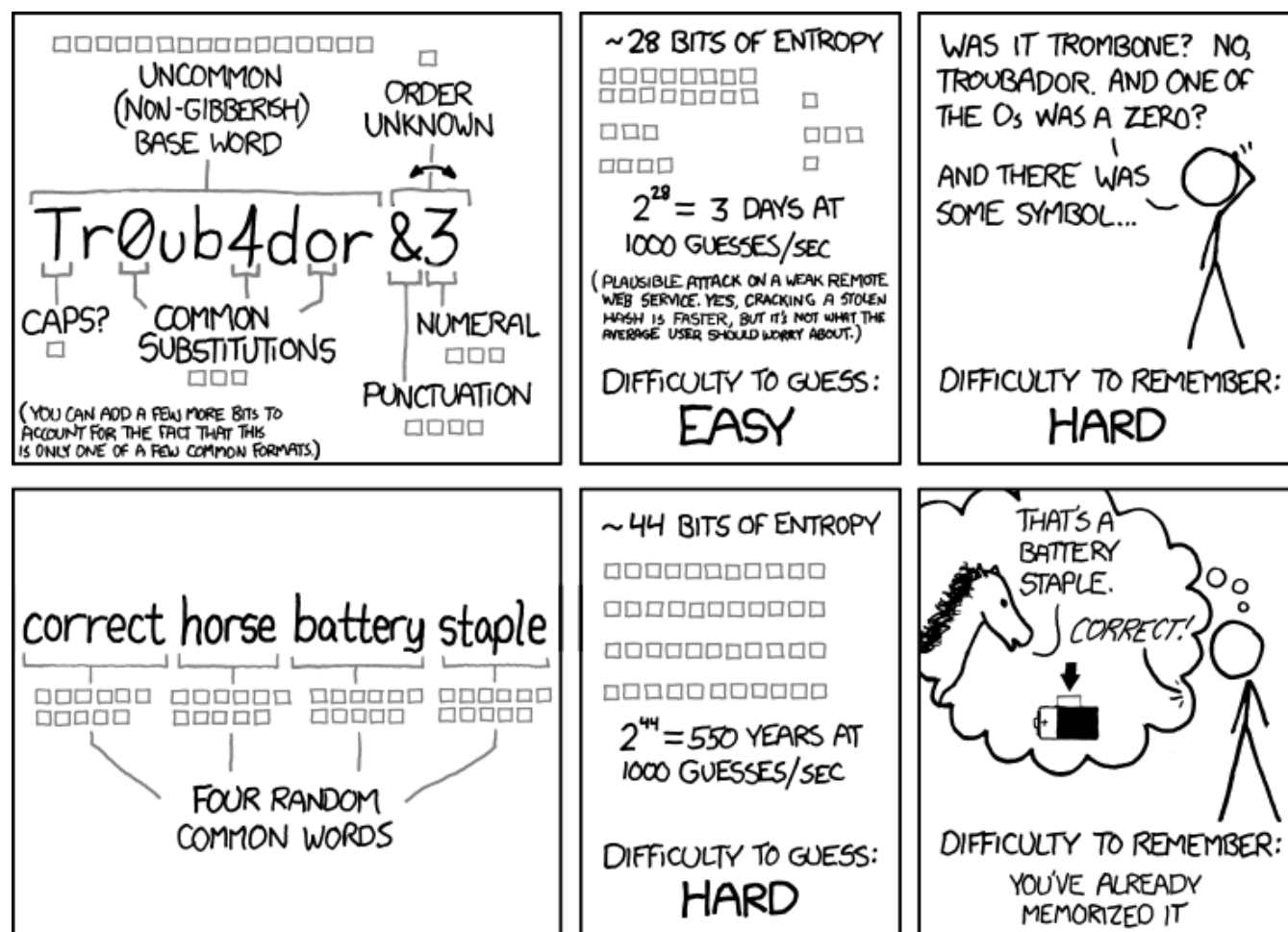
Master Password must be at least eight characters long, as in "mypassword". Can be any printable ASCII character except "/", "", or "@".

Cancel

Previous

Next

My password was "masterfightingduckhorse" as inspired by xkcd's naming guide.



THROUGH 20 YEARS OF EFFORT, WE'VE SUCCESSFULLY TRAINED EVERYONE TO USE PASSWORDS THAT ARE HARD FOR HUMANS TO REMEMBER, BUT EASY FOR COMPUTERS TO GUESS.

<https://xkcd.com/936/>

Network & Security

Virtual Private Cloud (VPC) [Info](#)

VPC defines the virtual networking environment for this DB instance.

Default VPC (vpc-799cde1e) ▼



Only VPCs with a corresponding DB subnet group are listed.

Subnet group [Info](#)

DB subnet group that defines which subnets and IP ranges the DB instance can use in the VPC you selected.

default ▼

Public accessibility [Info](#)

☒ Yes

EC2 instances and devices outside of the VPC hosting the DB instance will connect to the DB instances. You must also select one or more VPC security groups that specify which EC2 instances and devices can connect to the DB instance.

☐ No

DB instance will not have a public IP address assigned. No EC2 instance or devices outside of the VPC will be able to connect.

Availability zone [Info](#)

No preference ▼

VPC security groups

Security groups have rules authorizing connections from all the EC2 instances and devices that need to access the DB instance.

☒ Create new VPC security group

☐ Choose existing VPC security groups

Finally, we name our database and instantiate.

Database options

Database name

dbtwitter

Note: if no database name is specified then no initial MySQL database will be created on the DB Instance.

Database port

TCP/IP port the DB instance will use for application connections.

3306 ▲ ▼

To make Medium work, we log user data. By using Medium, you agree to our [Privacy Policy](#), including cookie policy.

default:mysql5.6

Option group [Info](#)

default:mysql-5-6

IAM DB authentication [Info](#)

☐ Enable IAM DB authentication

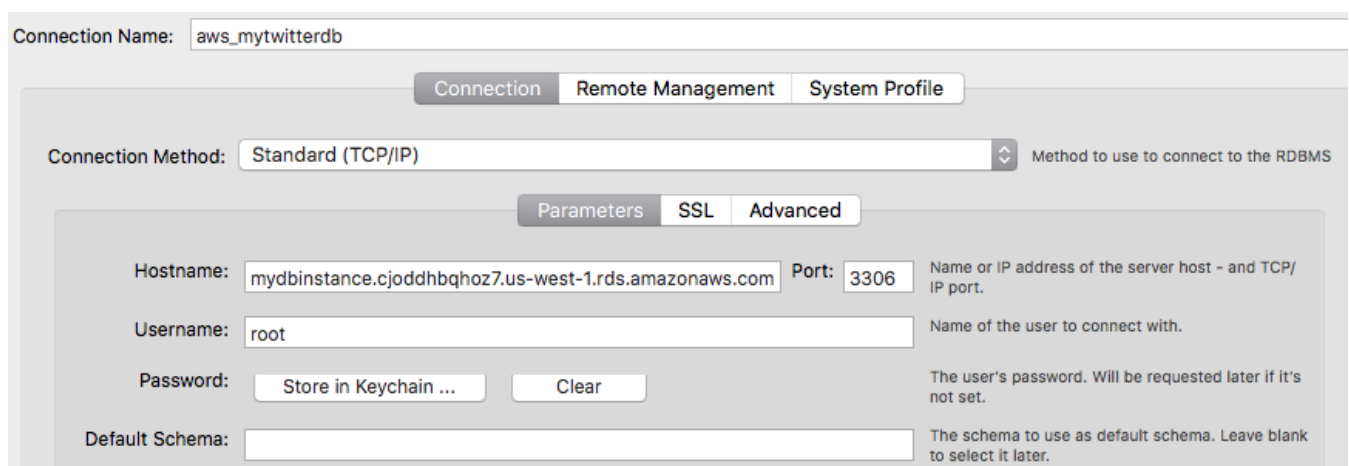
Manage your database user credentials through AWS IAM users and roles.

☒ Disable

In your Amazon RDS console for your instance, it should show DB instance status = creating. When status = available an endpoint under “Connect” should be generated and you should be able to connect using only the endpoint, master username, and password.

STEP 2: Connect Database Admin tool to AWS RDS

Now, with MySQL workbench click the (+) button to create a new connection. Copy your generated endpoint to hostname and enter your username and password to get connected.



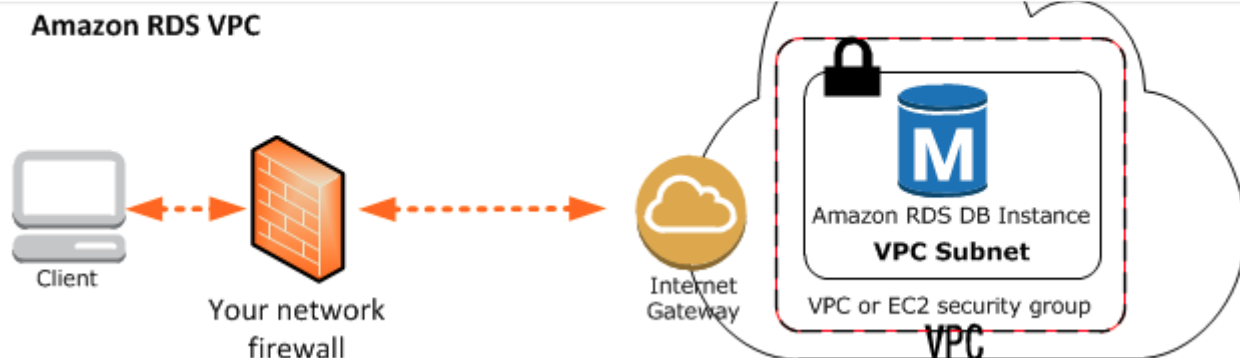
The screenshot shows the MySQL Workbench 'New Connection' dialog. The 'Connection Name' is 'aws_mytwitterdb'. The 'Connection Method' is 'Standard (TCP/IP)'. The 'Parameters' tab is selected, showing the following fields: 'Hostname' (mydbinstance.cjoddbqhoz7.us-west-1.rds.amazonaws.com), 'Port' (3306), 'Username' (root), 'Password' (with 'Store in Keychain...' and 'Clear' buttons), and 'Default Schema' (empty). To the right of each field is a descriptive tooltip. The 'System Profile' tab is also visible at the top.

Alternatively, you could enter

```
$mysql -h putEndPointHere.com -P 3306 -u root -p
```

Now, most guides state that you should now be connected. Unfortunately, this was not the case for me. My database was online, so I suspect it was the VPC (Virtual Private Cloud) configuration.

To make Medium work, we log user data. By using Medium, you agree to our [Privacy Policy](#), including cookie policy.



https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/USER_VPC.html

From above, we can see that clients do not connect directly to the DB. Instead, we connect to a VPC, which can set various rules for who can connect. For different types of DB access through VPC, check out [Amazon's Detailed Guide](#).

Security and network

Availability zone

us-west-1a

VPC

vpc-799cde1e

Subnet group

default

Subnets

subnet-3e636659

subnet-97d680cc

Security groups

rds-launch-wizard-1 (sg-071ff5fca424c95f3)
(active)

Publicly accessible

Yes

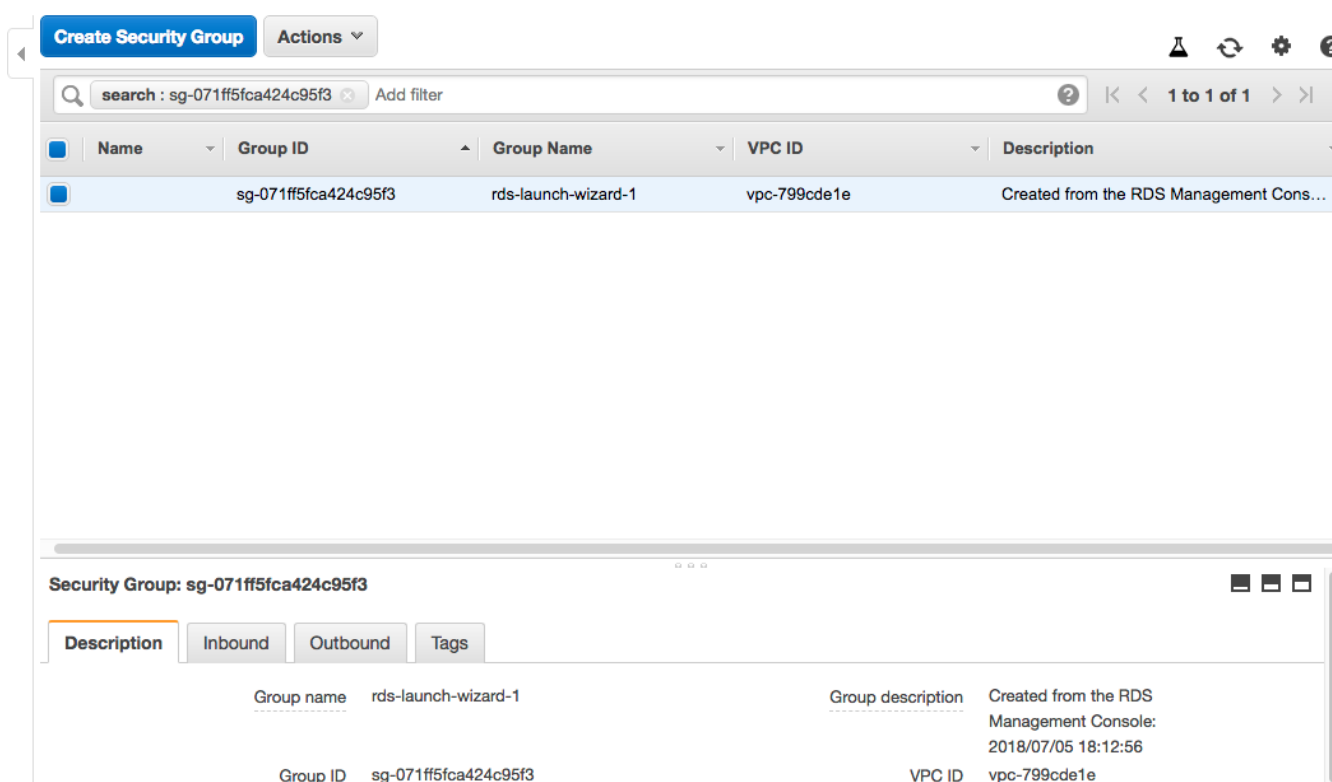
Certificate authority

rds-ca-2015 (Mar 5, 2020)

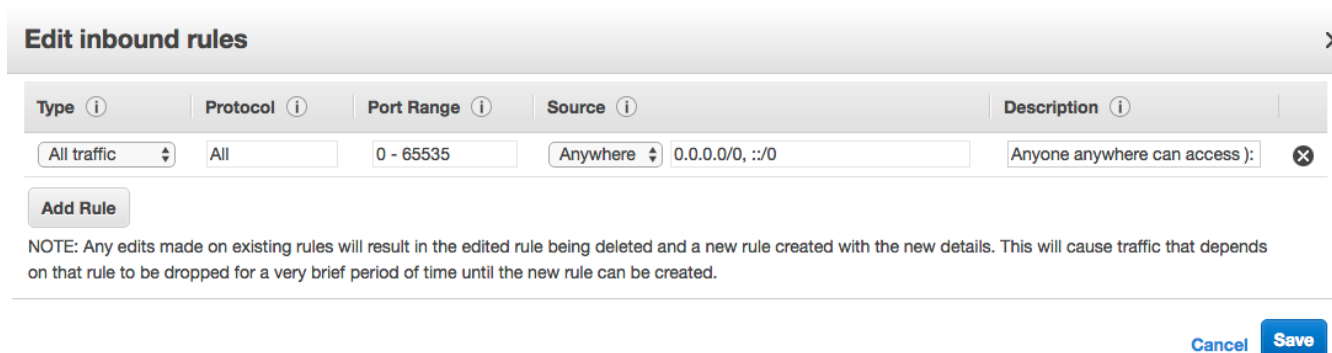
In our db instance, under “Security and Network”, I see that our DB is publicly accessible, which means devices outside of our VPC are allowed to connect to it. That’s

To make Medium work, we log user data. By using Medium, you agree to our [Privacy Policy](#), including [1...](#) ×
cookie policy.

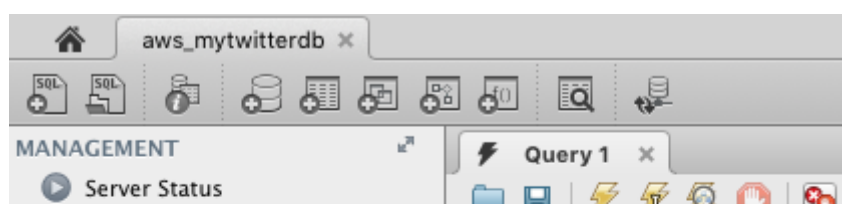
A EC2 Management console should pop up. (Our RDS is protected by a VPC OR EC2 security group).

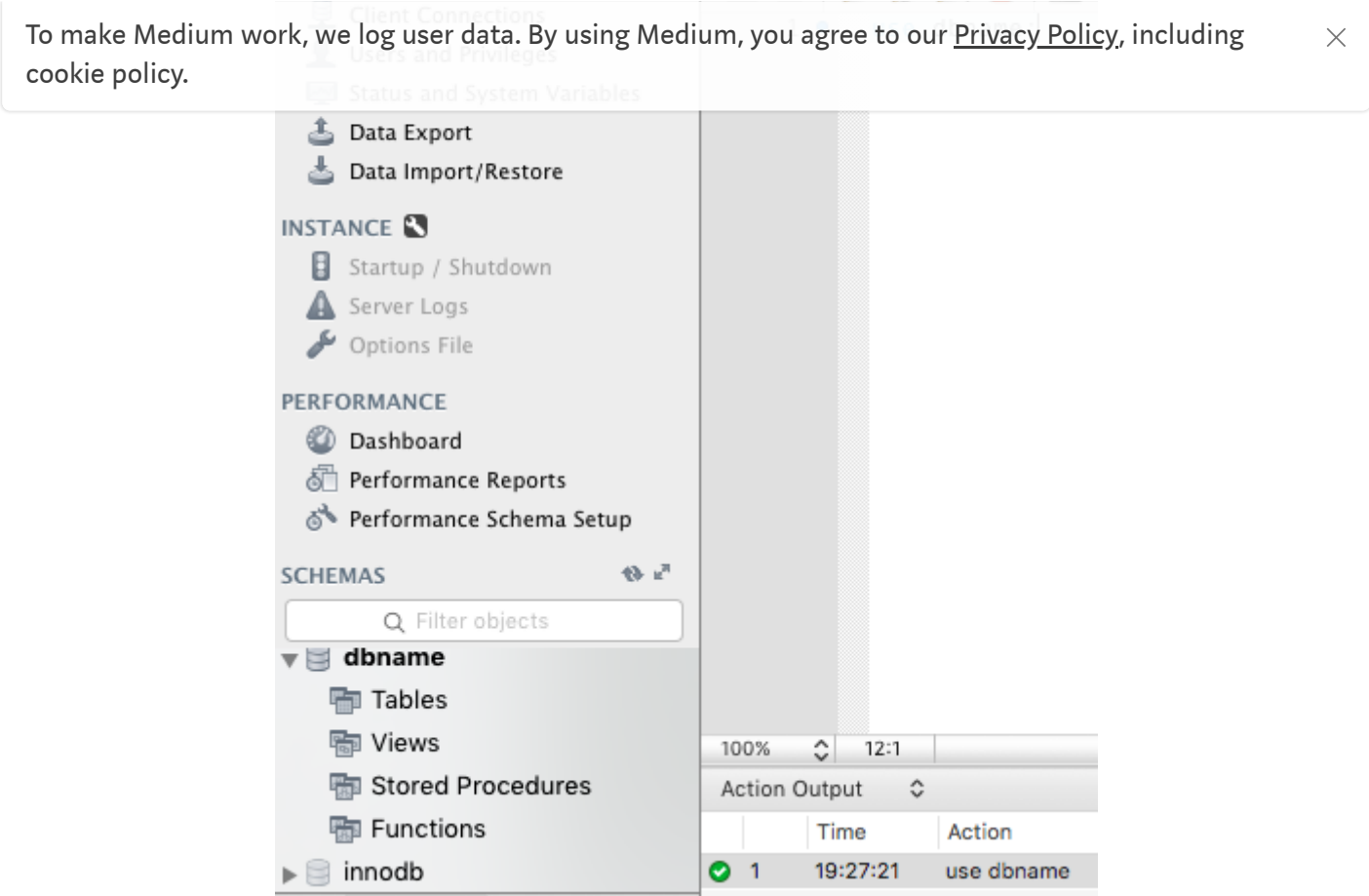


On the bottom lets click Inbound, then edit, to change these rules. Let's go ahead and allow any type of traffic, with any protocol, from anywhere to access our database on any port, (definitely not secure).



And viola! That should work. You should be able to query the DB now.





Connected on MySQL Workbench

```
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 54
Server version: 5.6.39-log MySQL Community Server (GPL)

Copyright (c) 2000, 2016, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

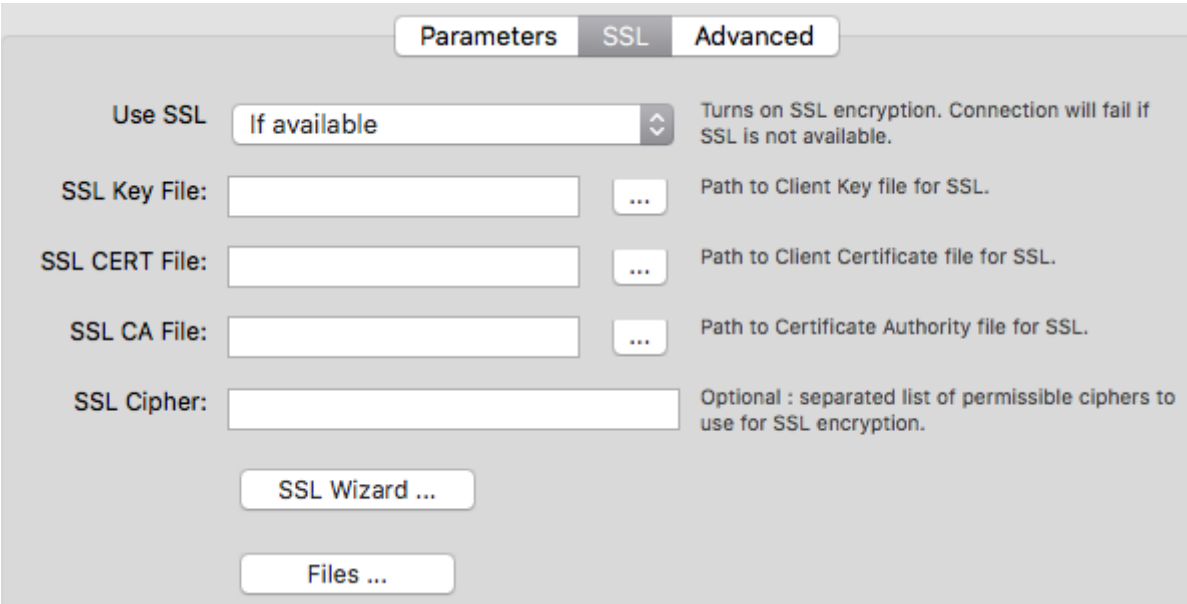
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql>
```

Connected on terminal, checkout the [commands cheat sheet](#)

Unfortunately, our VPC security nightmare. Let’s make things a little more secure by restricting access to just our IP address, with the TCP protocol, and only on port 3306 (where our db is open).



probably don't want to keep manually updating your IP address either. A longterm solution would be using [EC2 Key pairs](#), but that's a topic for another time.



SSL key pair options in MySQL workbench

Finally, you instantiating a different DB, like PostGreSQL is not so different. Besides the engine option, you'd also need a different admin tool, such as [PGAdmin](#). Otherwise, the inputs for hostname, master user name, and password are the same.