

## **DBMS 2022**

### **Innovative Project: Amazon RDS**

#### **What are we going to do?**

Migrating to Cloud SQL from Amazon RDS for MySQL Using Database Migration Service

#### **Overview:**

Database Migration Service provides options for one-time and continuous jobs to migrate data to Cloud SQL using different connectivity options, including IP allowlists, VPC peering, and reverse SSH tunnels.

In this lab, you migrate a MySQL database from an Amazon RDS instance for MySQL to Cloud SQL for MySQL using a one-time Database Migration Service job and an IP allowlist for connectivity. After you create and run the migration job, you will check that the database has been successfully migrated to your Cloud SQL for MySQL instance.

#### **Objectives:**

In this project, we configure a one-time Database Migration Service job to migrate databases from a cloud-based MySQL instance to Cloud SQL for MySQL.

Create a profile for a source connection to a cloud-based MySQL instance (Amazon RDS for MySQL).

Create and run a one-time migration job using Database Migration Service.

Verify that the migration job has completed successfully.

**Setup:**

For each lab, you get a new GCP project and set of resources for a fixed time at no cost.

---

**01:30:00** Make sure you signed into Qwiklabs using an incognito window.

Note the lab's access time (for example, \_\_\_\_\_) and make sure you can find it.

There is no pause feature. You can restart if needed, but you have to start at the beginning.



When ready, click \_\_\_\_\_.

Note your lab credentials. You will use them to sign in to Cloud Platform Console.

**Caution:** When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked.

[Learn more.](#)

[Open Google Console](#)

**Username**

student-01-23efd9347325@



**Password**

gCXLv23N4fPN




**GCP Project ID**

qwiklabs-gcp-01-d7c92c04





Click Open Google Console.


Click Use another account and copy/paste credentials for this lab into the prompts.



## Choose an account

Your.Email@gmail.com


google1381214\_student@qwiklabs.net  
*Signed out*

Use another account


Open Google Console

**Caution:** When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked. [Learn more.](#)


Username

google2727032\_student@qwiklabs.n 

Password

k68CZXsxMZ 

GCP Project ID

qwiklabs-gcp-4fbfecac8667e457 

[New to labs? View our introductory video!](#)

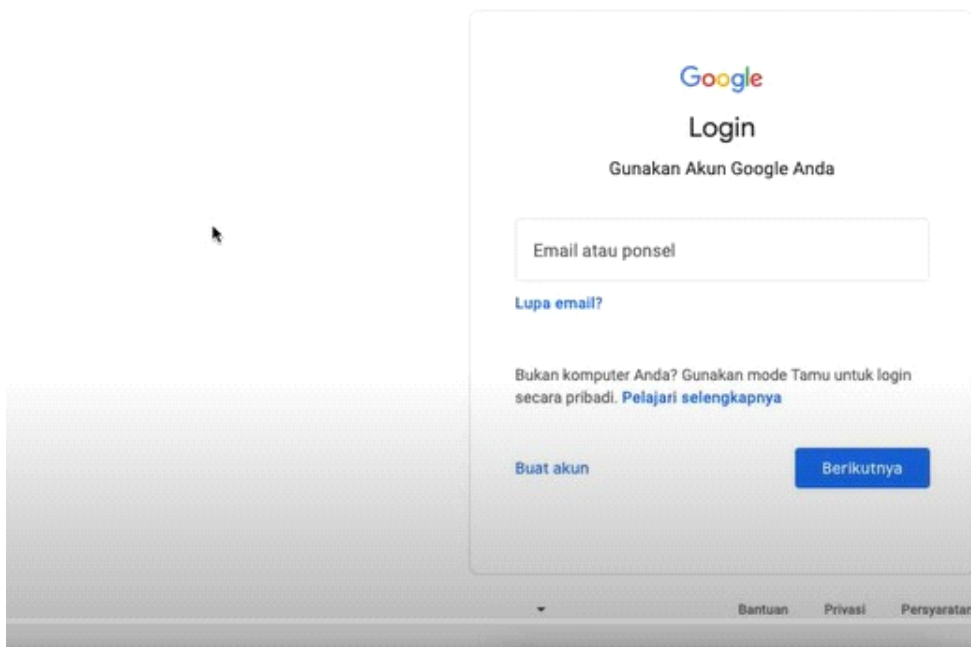
Accept the terms and skip the recovery resource page.

Do not click End Lab unless you are finished with the lab or want to restart it. This clears your work and removes the project.

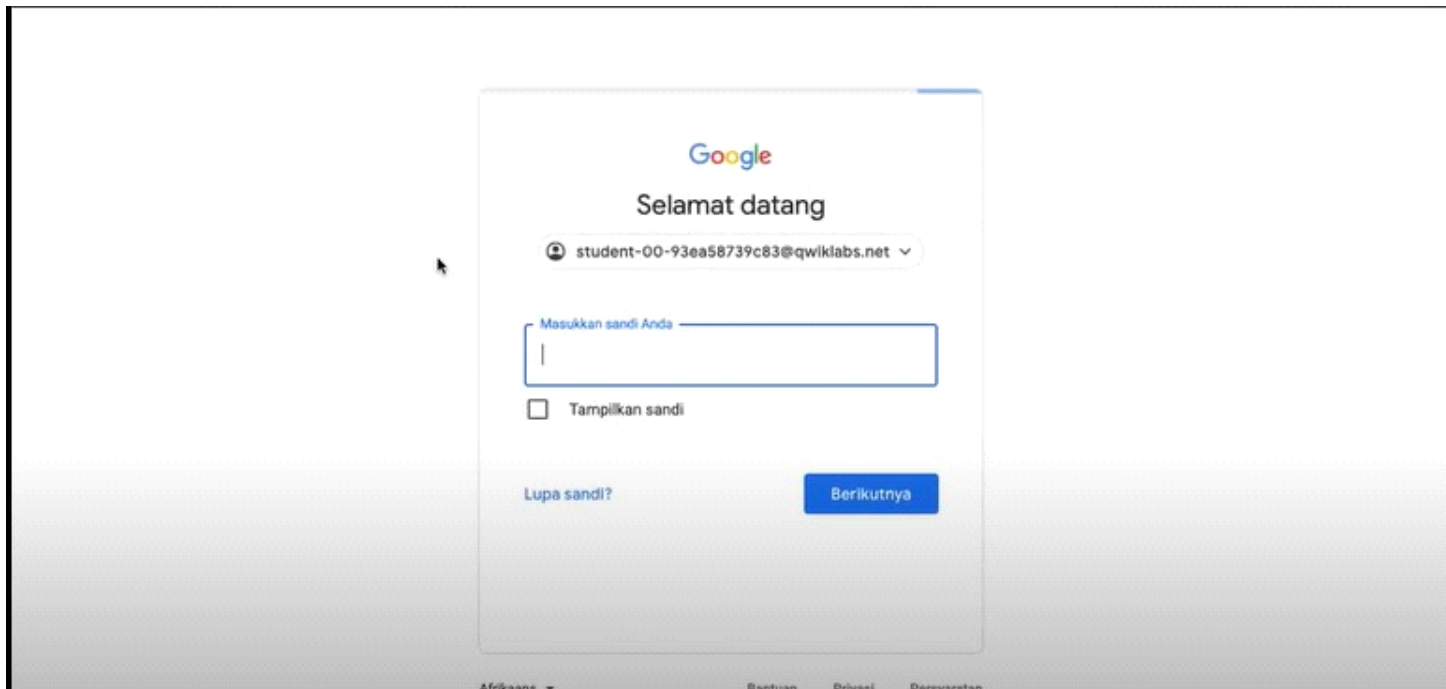
Copy the username, and then click Open Google Console. The lab spins up resources, and then opens another tab

that shows  
the Choose an account page.

The Sign in page opens. Paste the username that you copied from the Connection Details panel. Then copy and paste the password.



In the same way, copy the password from previous page and paste it in the password section



Click through the subsequent pages:

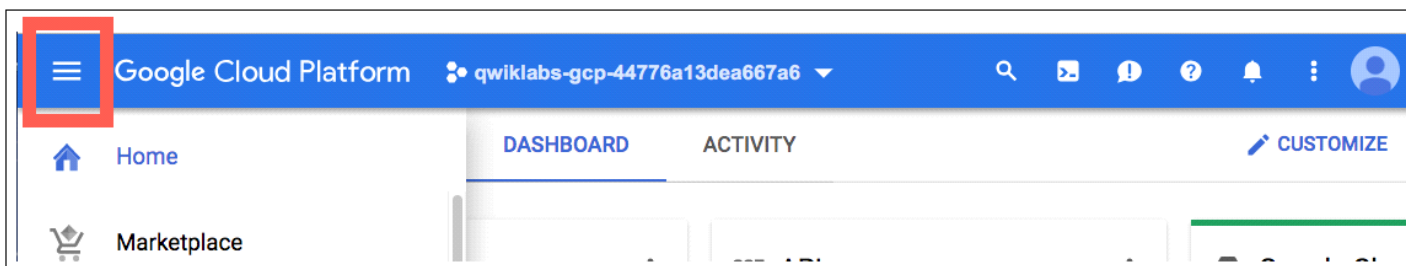
Accept the terms and conditions.

Do not add recovery options or two-factor authentication (because this is a temporary account).

Do not sign up for free trials.

After a few moments, the GCP console opens in this tab.

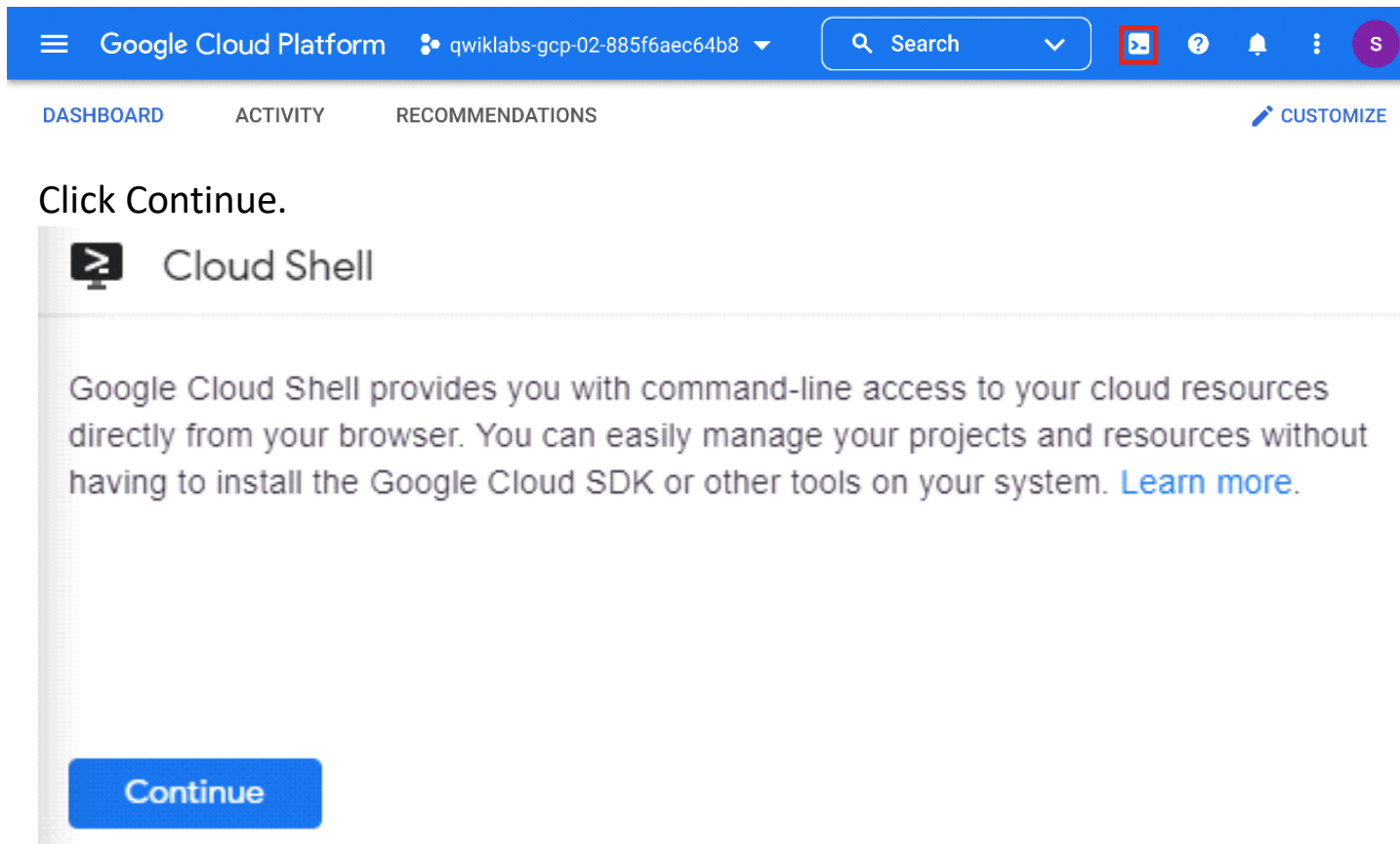
You can view the menu with a list of GCP Products and Services by clicking the Navigation menu at the top-left, next to "Google Cloud Platform".



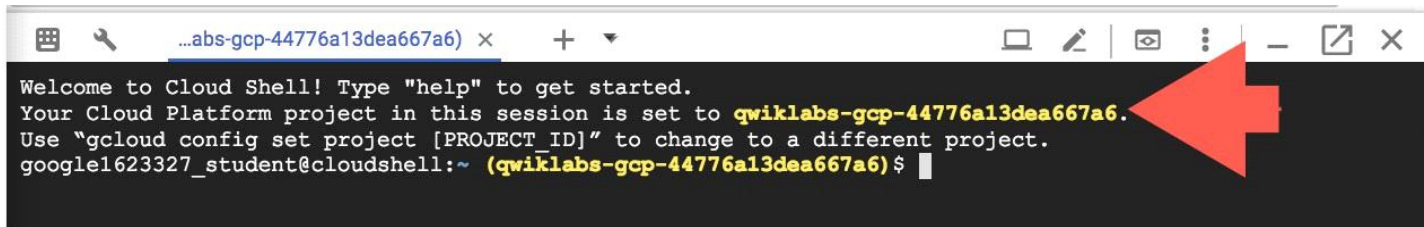
## **Activate Google Cloud Shell**

Google Cloud Shell is a virtual machine that is loaded with development tools. It offers a persistent 5GB home directory and runs on the Google Cloud. Google Cloud Shell provides command-line access to your GCP resources.

In GCP console, on the top right toolbar, click the Open Cloud Shell button.



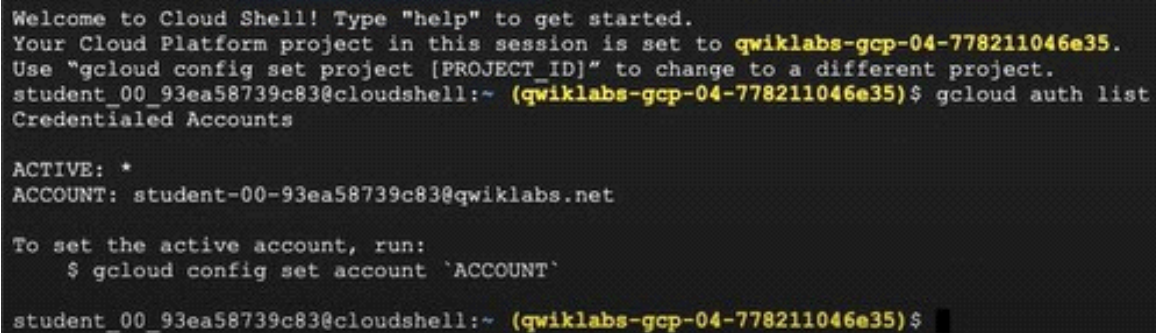
It takes a few moments to provision and connect to the environment. When you are connected, you are already authenticated, and the project is set to your PROJECT\_ID. For example:



```
...abs-gcp-44776a13dea667a6) x + -
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to quwiklabs-gcp-44776a13dea667a6.
Use "gcloud config set project [PROJECT ID]" to change to a different project.
google1623327_student@cloudshell:~ (quwiklabs-gcp-44776a13dea667a6)$
```

gcloud is the command-line tool for Google Cloud Platform. It comes pre-installed on Cloud Shell and supports tab-completion.

- You can list the active account name with this command: `gcloud auth list`



```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to quwiklabs-gcp-04-778211046e35.
Use "gcloud config set project [PROJECT ID]" to change to a different project.
student_00_93ea58739c83@cloudshell:~ (quwiklabs-gcp-04-778211046e35)$ gcloud auth list
Credentialed Accounts

ACTIVE: *
ACCOUNT: student-00-93ea58739c83@quwiklabs.net

To set the active account, run:
$ gcloud config set account 'ACCOUNT'

student_00_93ea58739c83@cloudshell:~ (quwiklabs-gcp-04-778211046e35)$
```

Output:

- You can list the project ID with this command: `gcloud config list project`

Output:

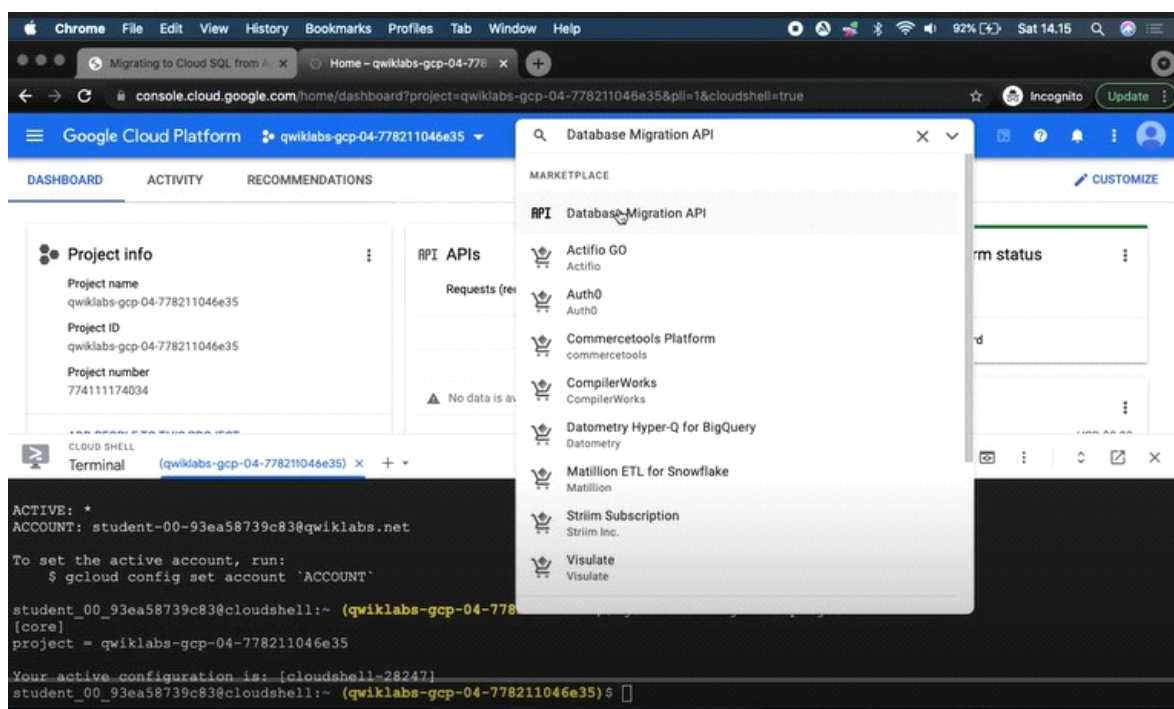


```
student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35)$ gcloud config
[core]
project = qwiklabs-gcp-04-778211046e35

Your active configuration is: [cloudshell-28247]
student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35)$
```

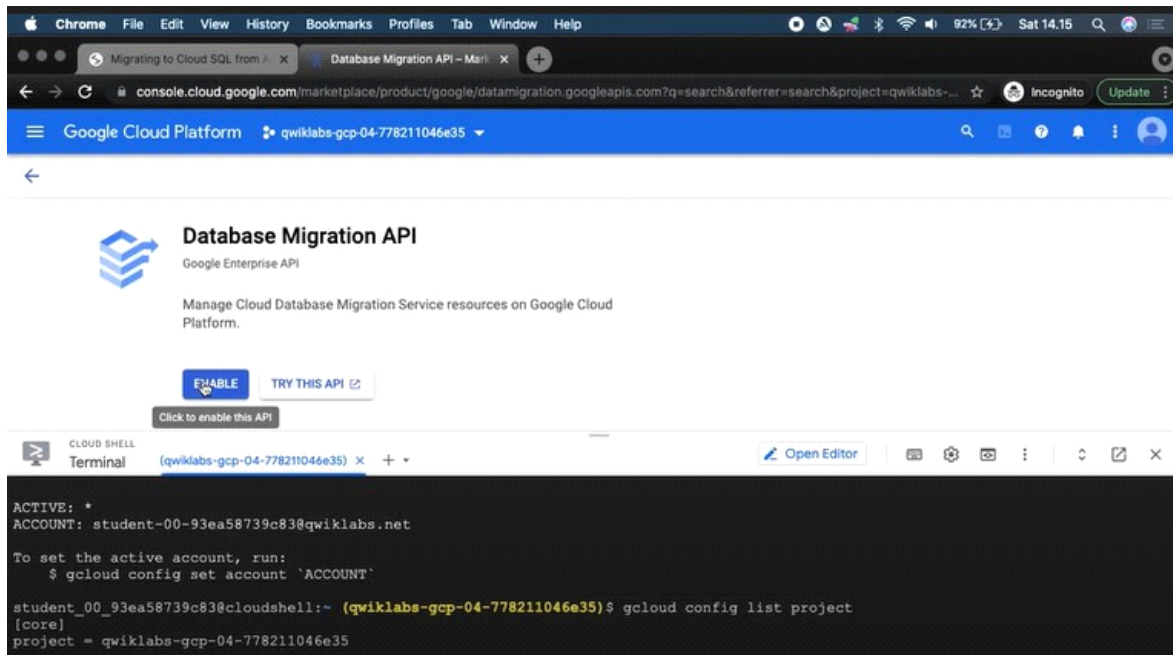
## Verify that the Database Migration API is enabled

In the Google Cloud Console, enter Database Migration API in the top search bar.



Click on the result for Database Migration API. This page will either show status information or give you the option to enable the API.

If necessary, enable the API.



## Task 1. Install and configure the AWS CLI tool in Cloud Shell

Although AWS configuration tasks can be completed in the AWS console, this lab uses the AWS CLI to complete these tasks in Cloud Shell. In this task, you install the AWS CLI tool in Cloud Shell to access the AWS resources from Google Cloud.

To install the AWS CLI tool in Cloud Shell, run the following commands:

- ```
curl
"<https://awscli.amazonaws.com/awscli-ex
e-linux-x86_64.zip>" -o "awscliv2.zip"
unzip
awscliv2.zip
sudo ./aws/
install
```

Output:

```

student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35)$ curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100 42.4M  100 42.4M    0     0  49.8M      0  --:--:-- --:--:-- --:--:-- 49.8M
student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35)$ unzip awscliv2.zip
Archive:  awscliv2.zip
  creating: aws/
  creating: aws/dist/
  inflating: aws/install
  inflating: aws/THIRD_PARTY_LICENSES
  inflating: aws/README.md
  creating: aws/dist/_struct/
  creating: aws/dist/awscli/
  creating: aws/dist/botocore/
  creating: aws/dist/cryptography/

  inflating: aws/dist/botocore/data/signer/2017-08-25/waiters-2.json
  creating: aws/dist/lib/python3.8/
  creating: aws/dist/lib/python3.8/config-3.8-x86_64-linux-gnu/
  inflating: aws/dist/lib/python3.8/config-3.8-x86_64-linux-gnu/Makefile
  inflating: aws/dist/cryptography-3.3.2-py3.8.egg-info/top_level.txt
  inflating: aws/dist/cryptography-3.3.2-py3.8.egg-info/AUTHORS.rst
  inflating: aws/dist/cryptography-3.3.2-py3.8.egg-info/WHEEL
  inflating: aws/dist/cryptography-3.3.2-py3.8.egg-info/LICENSE.BSD
  inflating: aws/dist/cryptography-3.3.2-py3.8.egg-info/RECORD
  inflating: aws/dist/cryptography-3.3.2-py3.8.egg-info/LICENSE.PSF
  inflating: aws/dist/cryptography-3.3.2-py3.8.egg-info/INSTALLER
  inflating: aws/dist/cryptography-3.3.2-py3.8.egg-info/LICENSE.APACHE
  inflating: aws/dist/cryptography-3.3.2-py3.8.egg-info/LICENSE
  inflating: aws/dist/cryptography-3.3.2-py3.8.egg-info/METADATA
  creating: aws/dist/zlib/cpython-38-x86_64-linux-gnu/
  inflating: aws/dist/zlib/cpython-38-x86_64-linux-gnu/soib.cpython-38-x86_64-linux-gnu.so
student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35)$ sudo ./aws/install
You can now run: /usr/local/bin/aws --version
student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35)$

```

- To configure the AWS CLI tool in Cloud Shell, run the following command:

aws configure

Enter the required information to configure the AWS CLI tool:

| Property                     | Value                                       |
|------------------------------|---------------------------------------------|
| AWS Access Key ID [None]     | enter the provided value for AWS Access Key |
| AWS Secret Access Key [None] | enter the provided value for AWS Secret Key |

|                              |                                             |
|------------------------------|---------------------------------------------|
| Default region name [None]   | us-east-1                                   |
| Default output format [None] | to accept the default, do not enter a value |

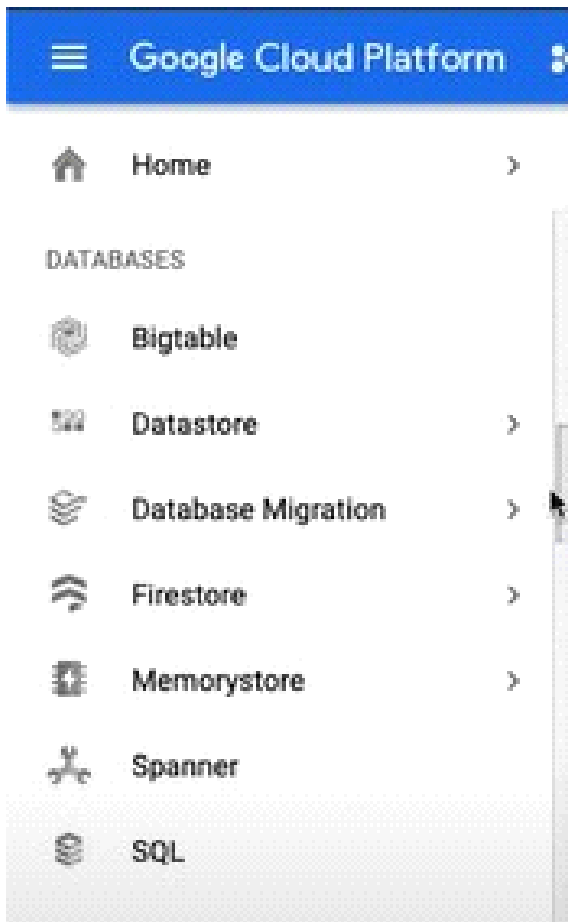
```
student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35) $ aws
AWS Access Key ID [None]: AKIAQQQNTTEBUWICS4U2T
AWS Secret Access Key [None]: 5d6uAo4jHh3aebZ9A1LlHiaJkHb4U4UsOfC/vVpd
Default region name [None]: us-east-1
Default output format [None]:
student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35) $
```

You have now configured the AWS CLI tool.

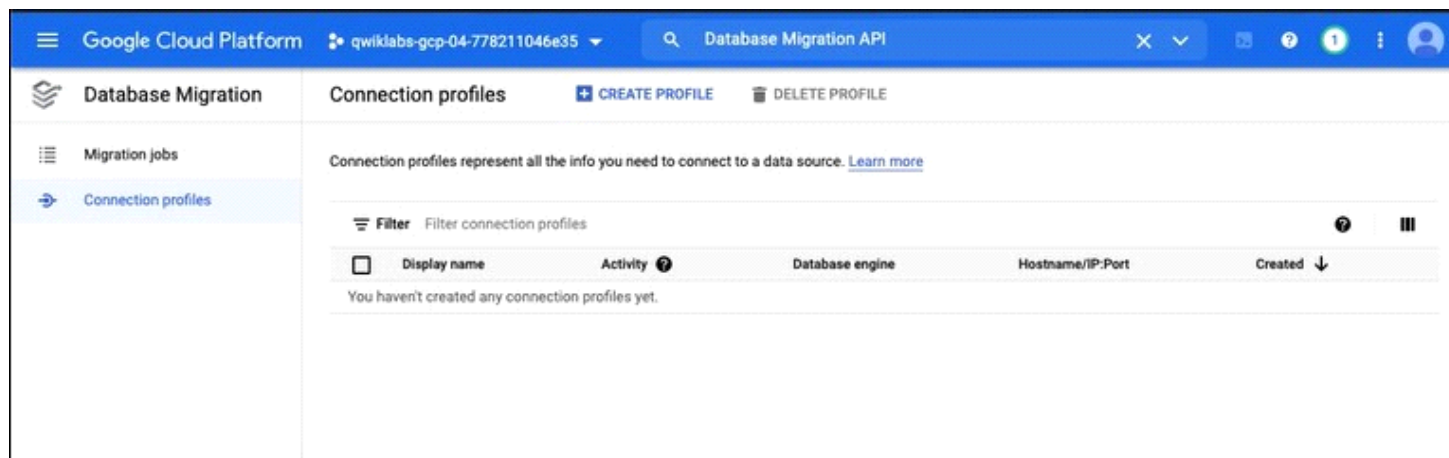
## **Task 2. Create a new connection profile for the Amazon RDS instance for MySQL**

A connection profile stores information about the source database instance (such as Amazon RDS for MySQL) and is used by Database Migration Service to migrate data from the source to your destination Cloud SQL database instance. After you create a connection profile, it can be reused across migration jobs.

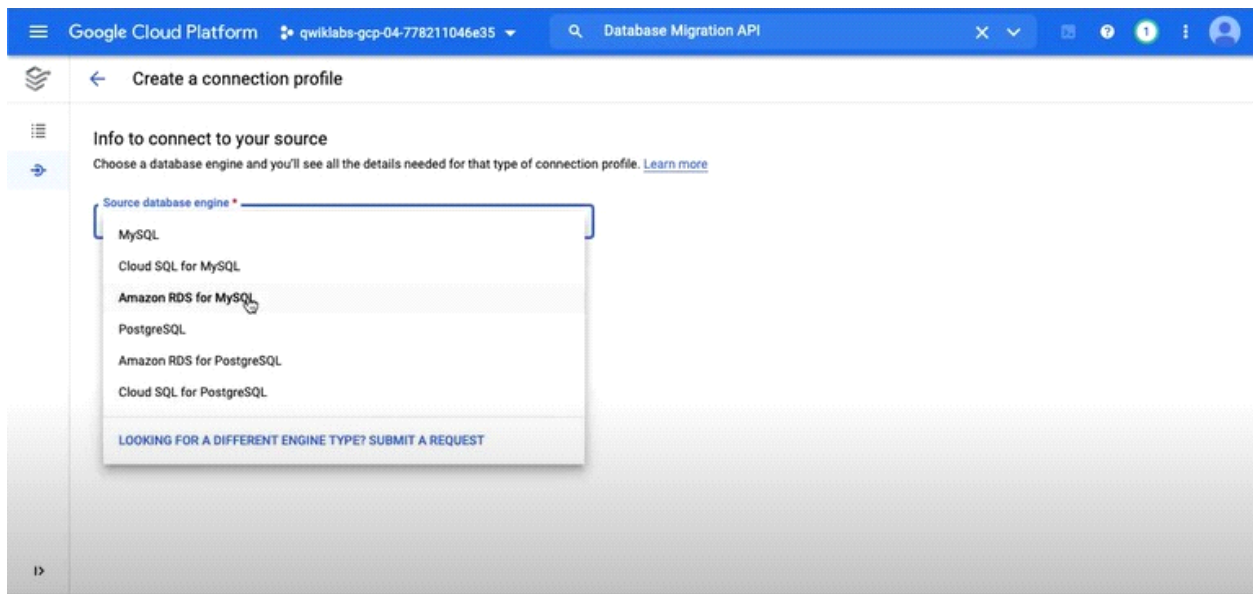
In the Google Cloud Console, on the Navigation menu (☰), click Database Migration > Connection profiles.



Click Create Profile.



For Source database engine, select Amazon RDS for MySQL.



Enter the required information for a connection profile:

| Property                | Value                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------------|
| Connection profile name | mysql-rds                                                                                                 |
| Connection profile ID   | keep the auto-generated value                                                                             |
| Hostname or IP address  | enter the IP address you identified for the Amazon RDS instance in the Setup tasks (such as 54.84.181.60) |
| Port                    | 3306                                                                                                      |
| Username                | admin                                                                                                     |
| Password                | changeme                                                                                                  |

## Info to connect to your source

Choose a database engine and you'll see all the details needed for that type of connection profile. [Learn more](#)

|                                                                                                             |            |
|-------------------------------------------------------------------------------------------------------------|------------|
| Source database engine *                                                                                    |            |
| Amazon RDS for MySQL                                                                                        |            |
| Connection profile name *                                                                                   |            |
| mysql-rds                                                                                                   |            |
| Must be less than 60 characters. 9/60                                                                       |            |
| Connection profile ID *                                                                                     |            |
| mysql-rds                                                                                                   |            |
| Lowercase letters, numbers, or hyphens. It must be unique in this project and cannot be changed later. 9/60 |            |
| Hostname or IP address *                                                                                    | Port *     |
| qm1p85r4aunhll0.culzkd914d51.us-east-1                                                                      | 3306       |
| Username *                                                                                                  | Password * |
| admin                                                                                                       | *****      |

Because you will use an IP allowlist as the connectivity option, you are providing a public address for the source.

For Region, select us-central1 (Iowa). For the Encryption Type, select None. Click Create.



### Connection profile region

Connection profiles, like all resources, are saved in a region. Region selection doesn't impact which migration jobs can use them, or which regions can connect to the data location itself, but can impact availability in the case of regional downtime.

Region \*  
us-central1 (Iowa) ▼

Permanent. For performance, keep your data close to services that need it.

### Secure your connection

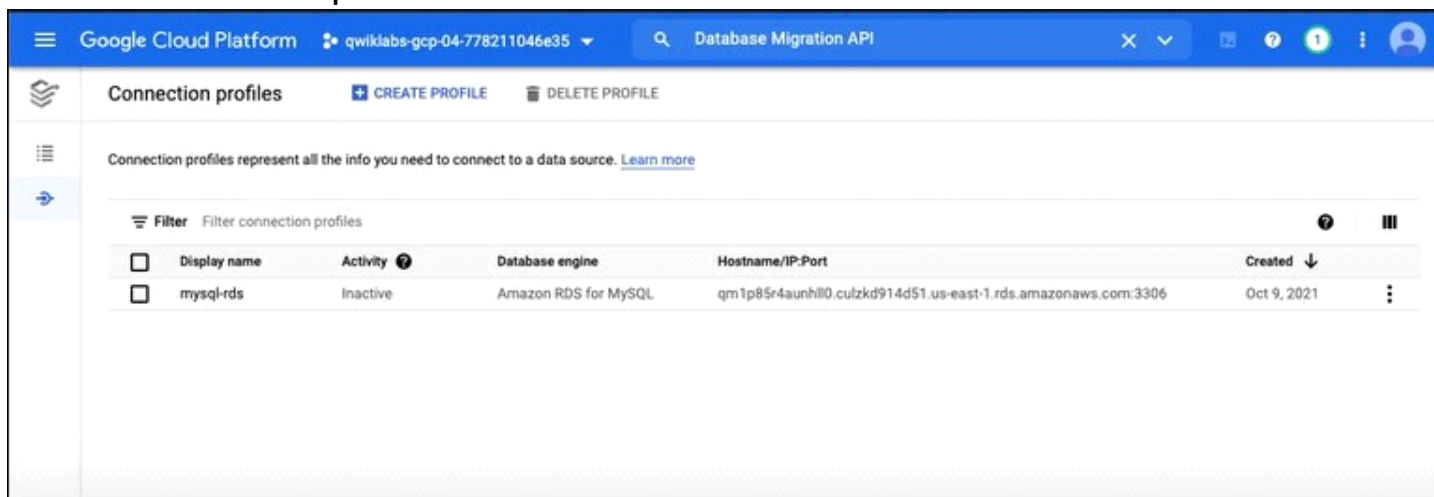
Choose an encryption type, and you'll see the SSL/TLS details needed. [Learn more](#)

Encryption type \*  
None ▼

CREATE

CANCEL

A new connection profile named mysql-rds will appear in the Connections profile list.



| Filter                   | Filter connection profiles |            |                      |                                                               |             |
|--------------------------|----------------------------|------------|----------------------|---------------------------------------------------------------|-------------|
| <input type="checkbox"/> | Display name               | Activity ? | Database engine      | Hostname/IP:Port                                              | Created ↓   |
| <input type="checkbox"/> | mysql-rds                  | Inactive   | Amazon RDS for MySQL | qm1p85r4aunhll0.culzkd914d51.us-east-1.rds.amazonaws.com:3306 | Oct 9, 2021 |

### Task 3. Create a one-time migration job

When you create a new migration job, you first define the source database instance using a previously created connection profile.

Then, you create a new destination database instance and configure connectivity between the source and destination instances.

In this task, you will use the migration job interface to

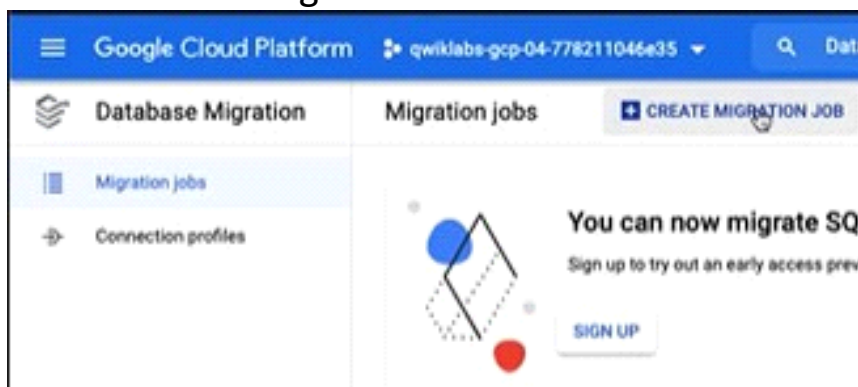


create a new Cloud SQL for MySQL instance and set it as the destination for the one-time migration job from the source Amazon RDS for MySQL instance.

- Create a new migration job

☰ In the Google Cloud Console, on the Navigation menu ( ), click Database Migration

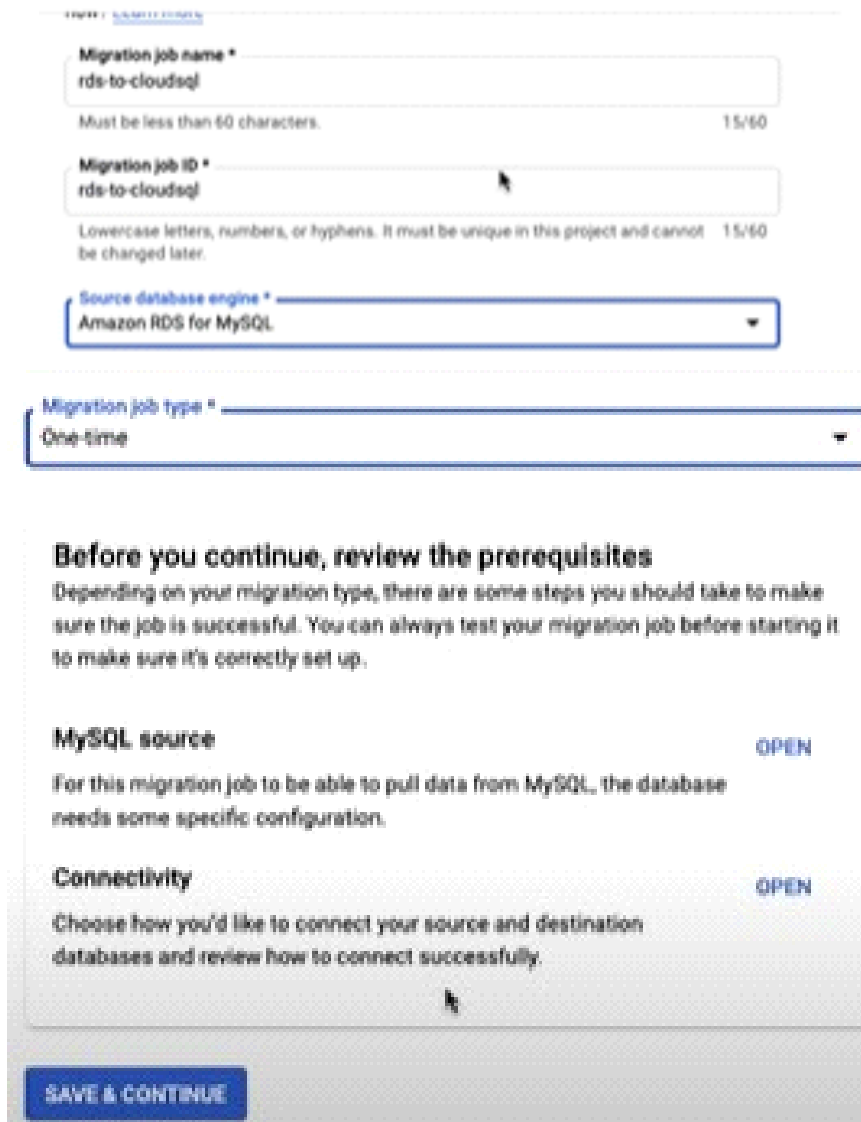
Click Create Migration Job.



For Create a migration job, on the Get Started tab, use the following values:

| Property               | Value                         |
|------------------------|-------------------------------|
| Migration job name     | rds-to-cloudsql               |
| Migration job ID       | keep the auto-generated value |
| Source database engine | Amazon RDS for MySQL          |
| Destination region     | us-central1 (Iowa)            |
| Migration job type     | One-time                      |

Leave all other settings as default.



The screenshot shows the 'SAVE & CONTINUE' step in the AWS DMS console. It contains three input fields: 'Migration job name' with the value 'rds-to-cloudsql', 'Migration job ID' with the value 'rds-to-cloudsql', and 'Source database engine' with the value 'Amazon RDS for MySQL'. Below these fields is a 'Migration job type' dropdown menu set to 'One-time'. A section titled 'Before you continue, review the prerequisites' provides instructions and links to 'MySQL source' and 'Connectivity' documentation. At the bottom is a 'SAVE & CONTINUE' button.

Migration job name \*

rds-to-cloudsql

Must be less than 60 characters. 15/60

Migration job ID \*

rds-to-cloudsql

Lowercase letters, numbers, or hyphens. It must be unique in this project and cannot be changed later. 15/60

Source database engine \*

Amazon RDS for MySQL

Migration job type \*

One-time

**Before you continue, review the prerequisites**

Depending on your migration type, there are some steps you should take to make sure the job is successful. You can always test your migration job before starting it to make sure it's correctly set up.

**MySQL source** [OPEN](#)

For this migration job to be able to pull data from MySQL, the database needs some specific configuration.

**Connectivity** [OPEN](#)

Choose how you'd like to connect your source and destination databases and review how to connect successfully.

**SAVE & CONTINUE**

Click Save & Continue.

- Define the source instance

For source connection profile, select mysql-rds. Leave the defaults for the other settings.

**Define your source**

Your data source's connection profile represents all the info needed to connect. Choose a connection profile that already exists, or create a new one. [Learn more](#)

**Source database engine**  
Amazon RDS for MySQL

Select source connection profile \*

Filter [type to filter]

mysql-rds

[CREATE A CONNECTION PROFILE](#)

After you select the source connection profile, you can see its configuration details, including source hostname or IP address, port, username, and encryption type.

Click **Save & Continue**.

**Source details** [VIEW DETAILS](#)

|                           |                                                         |
|---------------------------|---------------------------------------------------------|
| Connection profile ID     | mysql-rds                                               |
| Source hostname or IP     | qm1p85e4sunh10-culzkd914d51.us-east-1.rds.amazonaws.com |
| Port                      | 3306                                                    |
| Username                  | admin                                                   |
| Region                    | us-central1                                             |
| Encryption type (SSL/TLS) | None                                                    |

[SHOW DATA DUMP OPTIONS](#)

[SAVE & CONTINUE](#)

- Create the destination instance

Enter the required information to create the destination instance on Cloud SQL:

| Property                | Value          |
|-------------------------|----------------|
| Destination Instance ID | mysql-cloudsql |

|                  |                            |
|------------------|----------------------------|
| Root password    | supersecret                |
| Database version | Cloud SQL for MySQL 5.7    |
| Zone             | Any                        |
| Connections      | Public IP                  |
| Machine type     | Standard (1 vCPU, 3.75 GB) |
| Storage type     | SSD                        |
| Storage capacity | 10                         |

|  |  |
|--|--|
|  |  |
|--|--|

Destination instance ID \*

mysql-cloudsql

Use lowercase letters, numbers, and hyphens. Start with a letter. Note that the ID can't be changed later.

Password \*

supersecret



GENERATE

Set a password for the default admin user "root". [Learn more](#)

Database version \*

Cloud SQL for MySQL 5.7



Can be at most one version above the source version

### Choose region and zone

For better performance, keep your data close to the services that need it. Region is permanent, while zone can be changed any time.

You have the [location.org](#) policy in affect that is restricting your regions.

Region

us-central1 (Iowa)



Zone \*

Any



☒ Public IP

Authorize a network or use [Cloud SQL Proxy](#) to connect to this instance. [Learn more](#)

Standard

☒ 1 vCPU, 3.25 GB

☐ 2 vCPU, 7.5 GB

☐ 4 vCPU, 15 GB

☐ Custom

storage type

Choice is permanent. Storage type affects performance.

☒ SSD (Recommended)

Most popular choice. Lower latency than HDD with higher QPS and data throughput.

☐ HDD

Lower performance than SSD with lower storage rates.

Storage capacity

10 - 65,536 GB. Higher capacity improves performance, up to the limits set by the machine type. Capacity can't be decreased later.

☒ 10 GB

☐ 20 GB

☐ 100 GB

☐ 200 GB

☐ Custom

☒ Enable automatic storage increases

If enabled, whenever you are nearing capacity, storage will be incrementally (and permanently) increased. [Learn more](#)

Click Create & Continue.

☒ Enable automatic storage increases

If enabled, whenever you are nearing capacity, storage will be incrementally (and permanently) increased. [Learn more](#)

SHOW OPTIONAL CONFIGURATIONS

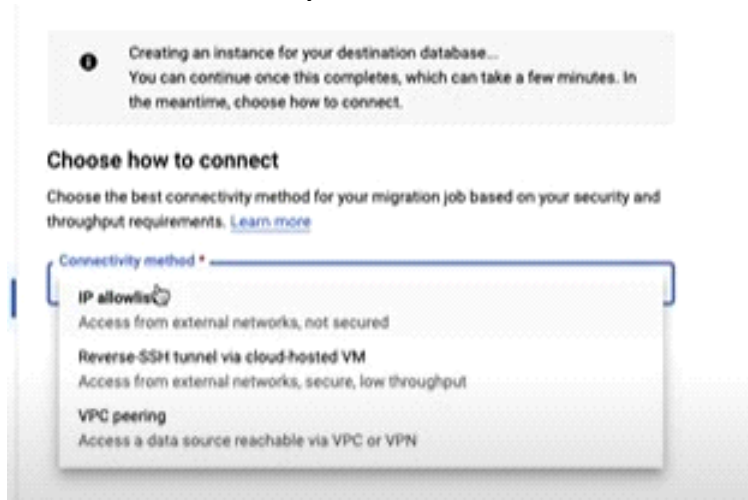
CREATE & CONTINUE

When prompted to confirm, click Create Destination & Continue.

- Define the connectivity method

A message will state that your destination database instance is being created. Continue to step 1 while you wait.

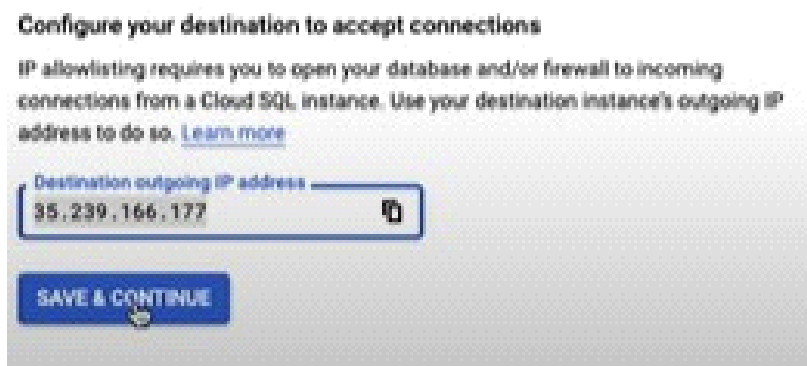
For Connectivity method, select IP allowlist.



When the destination database (Cloud SQL for MySQL) is created, the IP address will be available.

Copy the Destination outgoing IP address (such as 35.239.140.158) to configure the IP allowlist on the Amazon RDS instance.

Click Save & Continue.



Leave this window open. You will modify the IP allowlist on the Amazon RDS instance in the next task.

#### **Task 4. Configure the IP allowlist on source instance**

To allow connections between the source and destination instances, you need to modify the IP allowlist on the source. For Amazon RDS, you accomplish this by modifying a Database Security Group with the public IP address of the destination instance (such as Cloud SQL).

Although this task can be completed in the AWS console, you will use the AWS CLI to complete this task in Cloud Shell.

To modify the IP allowlist on the Amazon RDS instance, run the following command in Cloud Shell:

Replace <sg\_id> with the provided value for AWS RDS Database Security Group (such as sg-06700713f70076ad8) on this page, and replace <a.b.c.d> with the Destination outgoing IP address of your Cloud SQL instance (such as 35.239.140.158).

- `aws ec2 authorize-security-group-ingress \`  
    `--group-id <sg-id> \`  
    `--protocol tcp \`  
    `--port 3306 \`

```
student_00_93ea58739c83@cloudshell:- (qwiklabs-gcp-04-778211046a35)$ aws ec2 authorize-se
> --group-id sg-00ffaf36e67c41104 \
> --protocol tcp \
> --port 3306 \
> --cidr 35.239.166.177/32
```

`--cidr <a.b.c.d>/32`

Output:

```
> --cidr 35.239.166.177/32
{
  "Return": true,
  "SecurityGroupRules": [
    {
      "SecurityGroupRuleId": "sgr-0709b87b0348a9665",
      "GroupId": "sg-00ffaf36e67c41104",
      "GroupOwnerId": "035461996649",
      "IsEgress": false,
      "IpProtocol": "tcp",
      "FromPort": 3306,
      "ToPort": 3306,
      "CidrIpv4": "35.239.166.177/32"
    }
  ]
}
student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35)$
```

The IP address for the Cloud SQL instance has now been added to the IP allowlist on the Amazon RDS instance.

### **Task 5. Test and run a one-time migration job**

Return to the migration job window and review the summary.



## Test and create your migration job

Review the details you entered for this migration job, and make sure to test it before creating. You can create this job without starting it, or start it immediately.

|                                 |                                                              |
|---------------------------------|--------------------------------------------------------------|
| Migration job name              | rds-to-cloudsql                                              |
| Source database engine          | Amazon RDS for MySQL                                         |
| Destination database engine     | Cloud SQL for MySQL                                          |
| Type                            | One-time                                                     |
| Connection profile display name | mysql-rds                                                    |
| Hostname:Port                   | qm1p85r4aunhl0.culzkd914d51.us-east-1.rds.amazonaws.com:3306 |
| Destination instance ID         | mysql-cloudsql                                               |
| Region                          | us-central1                                                  |
| Connectivity method             | IP allowlist                                                 |
| Outgoing IP address             | 35.239.166.177                                               |

Click Test Job.

After a successful test, click Create & Start Job.

## Test the migration job

Test your job to make sure all prerequisites were fulfilled to ensure your source can connect to your destination.

TEST JOB

CREATE JOB

CREATE & START JOB

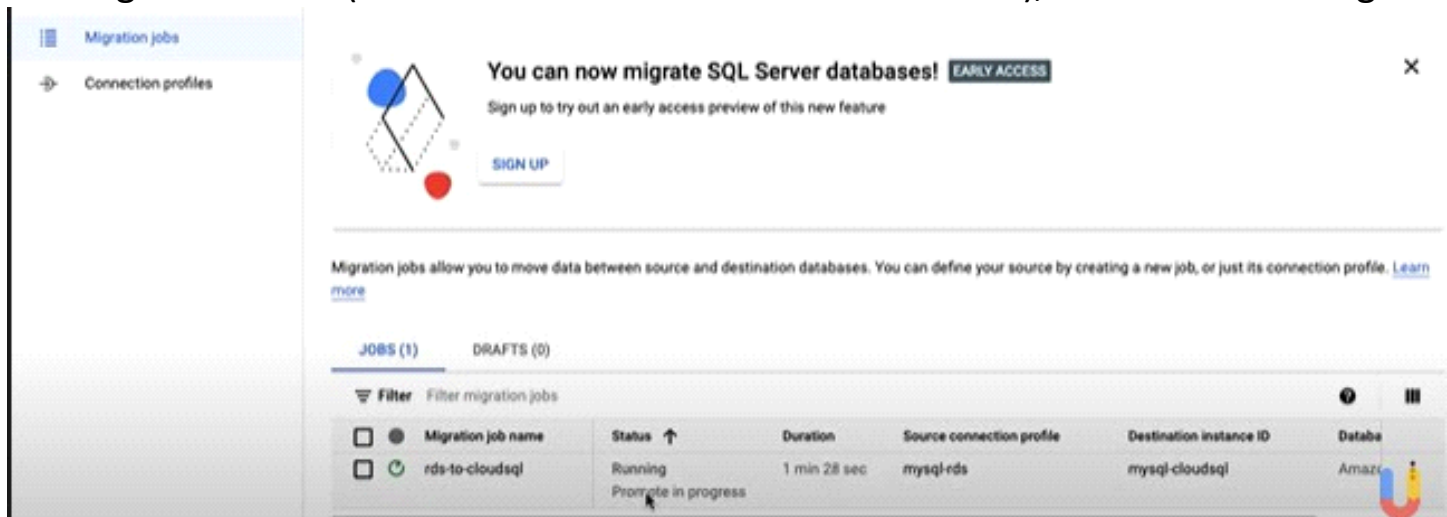
Note: Be sure to click on the button for CREATE & START

JOB to ensure that the job is successfully started.

If prompted to confirm, click Create & Start.

## **Task 6. Review status of the one-time migration job in DMS**

≡ In the Google Cloud Console, on the Navigation menu ( ), click Database Migration



Click the migration job rds-to-cloudsql to see the details page. Review the migration job status.

### **rds-to-cloudsql job**

|                           |                               |
|---------------------------|-------------------------------|
| Status                    | Completed Promote in progress |
| Migration type            | One-time                      |
| Destination instance ID   | mysql-cloudsql                |
| Migration job ID          | rds-to-cloudsql               |
| Destination engine        | Cloud SQL for MySQL           |
| Region                    | us-central1 (Iowa)            |
| Source connection profile | mysql-rds                     |
| Connectivity method       | IP allowlist                  |
| Created                   | Oct 9, 2021, 2:23:15 PM       |
| Duration                  | 2 min 14 sec                  |
| Completed                 | Oct 9, 2021, 2:36:50 PM       |

SHOW LESS DETAILS

If you have not started the job, the status will show as Not started. You can choose to start or delete the job.

After the job has started, the status will show as Starting and then transition to Running.

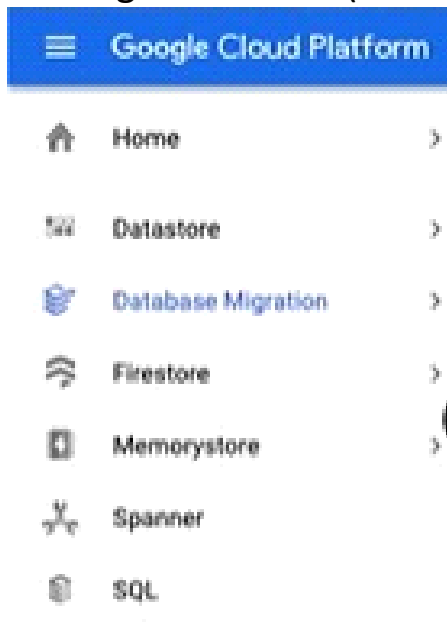
When the job status changes to Completed, the migration job has completed successfully, and you can move on to the next task.

## **Task 7. Confirm the data in Cloud SQL for MySQL**

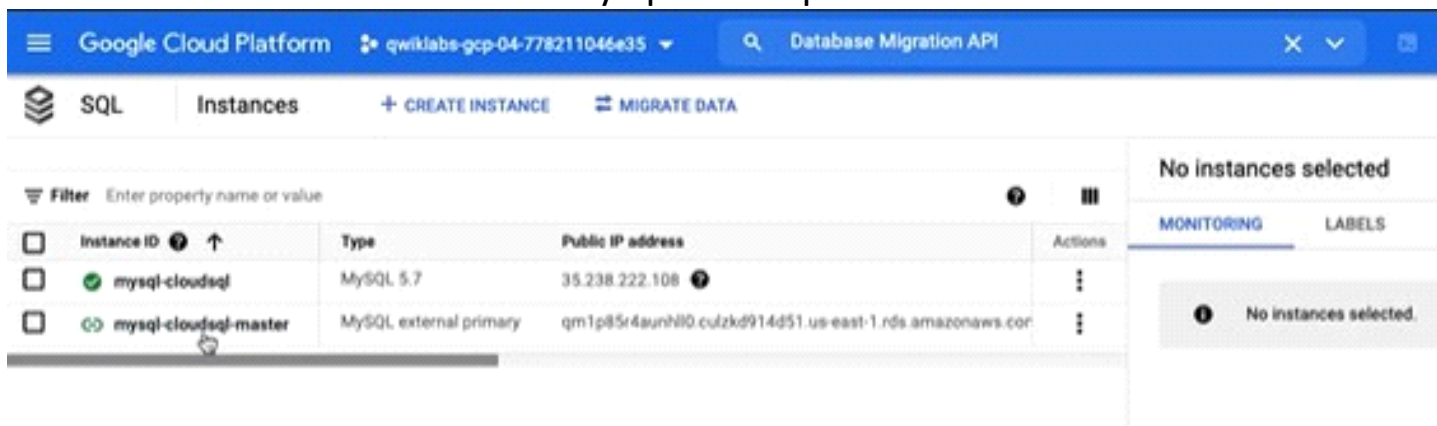
Check MySQL databases in Cloud SQL

≡ In the Google Cloud Console, on the Navigation menu (

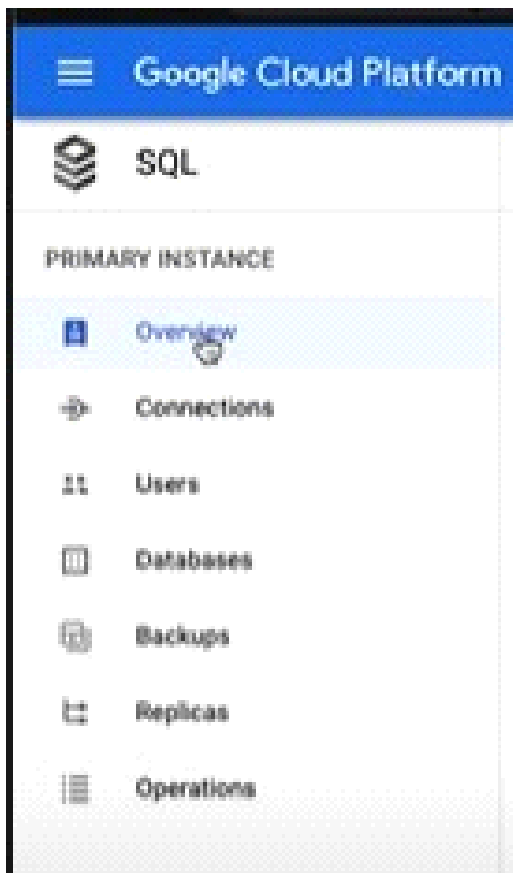
), click Databases > SQL.



Click on the instance ID called mysql-cloudsql.



In the Primary Instance menu, click Databases.



Notice that the databases called customers\_data and sales\_data have been migrated to Cloud SQL.

| Databases                                                                                                            |                   |               |        |   |
|----------------------------------------------------------------------------------------------------------------------|-------------------|---------------|--------|---|
| All instances > mysql-cloudsql                                                                                       |                   |               |        |   |
|  <b>mysql-cloudsql</b><br>MySQL 5.7 |                   |               |        |   |
|  CREATE DATABASE                    |                   |               |        |   |
| Name ↑                                                                                                               | Collation         | Character set | Type   |   |
| customers_data                                                                                                       | latin1_swedish_ci | latin1        | User   | ⋮ |
| information_schema                                                                                                   | utf8_general_ci   | utf8          | System | ⋮ |
| innodb                                                                                                               | latin1_swedish_ci | latin1        | User   | ⋮ |
| mysql                                                                                                                | utf8_general_ci   | utf8          | System | ⋮ |
| performance_schema                                                                                                   | utf8_general_ci   | utf8          | System | ⋮ |
| sales_data                                                                                                           | latin1_swedish_ci | latin1        | User   | ⋮ |
| SourceMySQLDatabase                                                                                                  | latin1_swedish_ci | latin1        | User   | ⋮ |
| sys                                                                                                                  | utf8_general_ci   | utf8          | System | ⋮ |

## Connect to MySQL database

In the Primary Instance menu, click Overview.

In Connect to this instance panel, click on Open cloud shell button.

The command to connect to MySQL will pre-populate in Cloud Shell:

- Run the above command.

```
gcloud sql connect mysql-cloudsql
--user=root --quiet
```

If prompted, click  
Authorize for the API.

When prompted for a password, which you previously set,  
enter: supersecret

```
student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35)$ gcloud sql connect mysql-cloudsql --us
Allowlisting your IP for incoming connection for 5 minutes...done.
Connecting to database with SQL user [root].Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 36
Server version: 5.7.34-google-log (Google)

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owners.

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

mysql> █
```

You have now activated the MySQL interactive console. Review data in Cloud SQL for MySQL database  
To select the database in the MySQL interactive console, run the following command:

```
mysql> use customers_data;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> select count(*) from customers;
+-----+
| count(*) |
+-----+
|      5030 |
+-----+
1 row in set (0.20 sec)

mysql> █
```

There are 5,030 records in the customers table that was migrated from the Amazon RDS instance for MySQL.

Exit the MySQL interactive console:

exit

```
mysql> exit
Bye
student_00_93ea58739c83@cloudshell:~ (qwiklabs-gcp-04-778211046e35)$ █
```

End Lab

End the Lab in the website where we started.

