Create and use MySQL on Azure

1- Create an Azure Database for MySQL resource with Azure CLI

Use the following Azure CLI az mysql server create command in the Azure Cloud Shell to create a new MySQL resource for your database.

```
$ az mysql server create    \

  --subscription 964df7ca-3ba4-48b6-a695-1ed9db5723f8 \

  --resource-group 1-94237ed1-playground-sandbox \

  --name hosniahmysql \

  --location eastus     \

  --admin-user hosniah \

  --admin-password "#Gta2021#"    \

  --ssl-enforcement Disabled      \

  --public-network-access Enabled
```

This command may take a couple of minutes to complete and creates a publicly available resource in the eastus region.

The response includes your server's configuration details including:

- The auto generated password for the admin account
- The command to connect to the server with mysql CLI

```
cloud@Azure:~$ az mysql server create      --subscription 964df7ca-3ba4-48b6-a695-1ed9db5723f8      --resource-group 1-94237ed1-playground-sandbox
--name hosniahmysql    --location eastus      --admin-user hosniah  --admin-password "#Gta2021#"     --ssl-enforcement Disabled      --public-network-a
ccess Enabled
Checking the existence of the resource group '1-94237ed1-playground-sandbox'...
Resource group '1-94237ed1-playground-sandbox' exists ? : True
Creating mysql Server 'hosniahmysql' in group '1-94237ed1-playground-sandbox'...
Your server 'hosniahmysql' is using sku 'GP_Gen5_2' (Paid Tier). Please refer to https://aka.ms/mysql-pricing  for pricing details
Make a note of your password. If you forget, you would have to reset your password with 'az mysql server update -n hosniahmysql -g 1-94237ed1-playgro
und-sandbox -p <new-password>'.
Creating mysql database 'defaultdb'...
{
  "additionalProperties": {},
  "administratorLogin": "hosniah",
  "byokEnforcement": "Disabled",
  "connectionString": "mysql defaultdb --host hosniahmysql.mysql.database.azure.com --user hosniah@hosniahmysql --password=#Gta2021#",
  "databaseName": "defaultdb",
  "earliestRestoreDate": "2021-10-16T06:59:29.813000+00:00",
  "fullyQualifiedDomainName": "hosniahmysql.mysql.database.azure.com",
  "id": "/subscriptions/964df7ca-3ba4-48b6-a695-1ed9db5723f8/resourceGroups/1-94237ed1-playground-sandbox/providers/Microsoft.DBforMySQL/servers/hosi
```

Before you can connect to the server programmatically, you need to configure your firewall rules to allow your client IP address through.

2- Add firewall rule for your client IP address to MySQL resource

By default, the firewall rules are not configured. You should add your client IP address so your client connection to the server is successful.

```
$ az mysql server firewall-rule create \

--resource-group 1-94237ed1-playground-sandbox \

--server hosniahmysql \

--name AllowMyIP --start-ip-address 51.51.51.51 \

--end-ip-address 51.51.51.51
```

```
cloud@Azure:~$ az mysql server firewall-rule create \
> --resource-group 1-94237ed1-playground-sandbox \
> --server hosniahmysql \
> --name AllowMyIP --start-ip-address 51.254.116.97 \
> --end-ip-address 51.254.116.97
{
  "endIpAddress": "51.254.116.97",
  "id": "/subscriptions/964df7ca-3ba4-48b6-a695-1ed9db5723f8/resourceGroups/1-94237ed1-playground-sandbox/providers/Microsoft.DBforMySQL/servers/hosn
iahmysql/firewallRules/AllowMyIP",
  "name": "AllowMyIP",
  "resourceGroup": "1-94237ed1-playground-sandbox",
  "startIpAddress": "51.254.116.97",
  "type": "Microsoft.DBforMySQL/servers/firewallRules"
}
```

If you don't know your client IP address, use one of these methods:

- Use the Azure portal to view and change your firewall rules, which includes adding your detected client IP
- While you can add the full range of internet addresses as a firewall rule, 0.0.0.0-255.255.255.255, this leaves your server open to attacks.

3- Create a database on the server with Azure CLI

Use the following Azure CLI az mysql db create command in the Azure Cloud Shell to create a new MySQL database on your server.

```
$ az mysql db create \

    --subscription 964df7ca-3ba4-48b6-a695-1ed9db5723f8 \

    --resource-group 1-94237ed1-playground-sandbox \

    --server-name hosniahmysql \

    --name gtaazure
```

```
cloud@Azure:~$ az mysql db create \
>     --subscription 964df7ca-3ba4-48b6-a695-1ed9db5723f8 \
>     --resource-group 1-94237ed1-playground-sandbox \
>     --server-name hosniahmysql \
>     --name gtaazure
{
  "charset": "latin1",
  "collation": "latin1_swedish_ci",
  "id": "/subscriptions/964df7ca-3ba4-48b6-a695-1ed9db5723f8/resourceGroups/1-94237ed1-playground-sandbox/providers/Microsoft.DBforMySQL/servers/hosn
iahmysql/databases/gtaazure",
  "name": "gtaazure",
  "resourceGroup": "1-94237ed1-playground-sandbox",
  "type": "Microsoft.DBforMySQL/servers/databases"
}
```

4- Get the MySql connection string with Azure CLI

Retrieve the MySql connection string for this instance with the az mysql server show-connection-string command:

```
cloud@Azure:~$ az mysql server show-connection-string \
>    --subscription 964df7ca-3ba4-48b6-a695-1ed9db5723f8 \
>    --server-name hosniahmysql
{
  "connectionStrings": {
    "ado.net": "Server=hosniahmysql.mysql.database.azure.com; Port=3306; Database={database}; Uid={username}@hosniahmysql; Pwd={password}",
    "jdbc": "jdbc:mysql://hosniahmysql.mysql.database.azure.com:3306/{database}?user={username}@hosniahmysql&password={password}",
    "mysql_cmd": "mysql {database} --host hosniahmysql.mysql.database.azure.com --user {username}@hosniahmysql --password={password}",
    "node.js": "var conn = mysql.createConnection({host: 'hosniahmysql.mysql.database.azure.com', user: '{username}@hosniahmysql',password: {password
}, database: {database}, port: 3306});",
    "php": "host=hosniahmysql.mysql.database.azure.com port=3306 dbname={database} user={username}@hosniahmysql password={password}",
    "python": "cnx = mysql.connector.connect(user='{username}@hosniahmysql', password='{password}', host='hosniahmysql.mysql.database.azure.com', por
t=3306, database='{database}')",
    "ruby": "client = Mysql2::Client.new(username: '{username}@hosniahmysql', password: '{password}', database: '{database}', host: 'hosniahmysql.mys
ql.database.azure.com', port: 3306)"
  }
}
```

This returns the connection strings for the popular languages as a JSON object. You need to replace {database}, {username}, and {password} with your own values before using the connection string.

You can connect to the newly created Database using the mysql command line from the whitelisted server using the following command:

$ mysql -h hosniahmysql.mysql.database.azure.com -u hosniah@hosniahmysql -p

```
ubuntu@vps290950:~$ mysql -h hosniahmysql.mysql.database.azure.com -u hosniah@hosniahmysql -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 63165
Server version: 5.6.47.0 MySQL Community Server (GPL)

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owners.

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

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| defaultdb          |
| gtaazure           |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
6 rows in set (0.14 sec)

mysql> []
```

5- Clean up resources

In order to delete the newly created server, you can run az mysql server delete command.

$ az mysql server delete --resource-group 1-94237ed1-playground-sandbox --name hosniahmysql

```
cloud@Azure:~$ az mysql server delete --resource-group 1-94237ed1-playground-sandbox --name hosniahmysql
Are you sure you want to perform this operation? (y/n): y
```