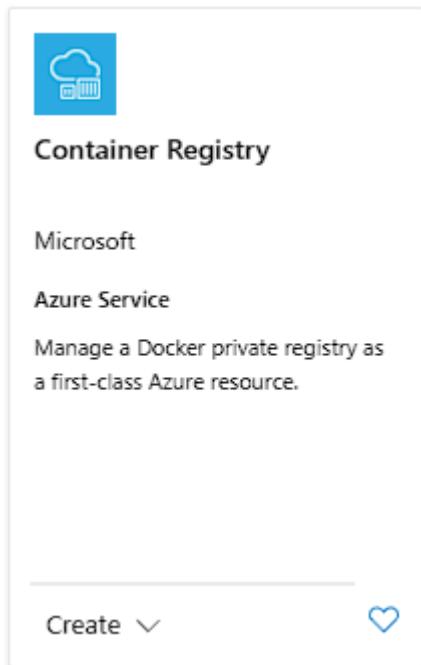




# LAB: SETUP FOR CONTAINERIZING AN APPLICATION

## 😊 STEP 1: CREATE AN AZURE CONTAINER REGISTRY

1. Log into azure portal. Go to create resources.
2. Then search for container registry.
3. Open this one.



4. Select your resource group.
5. Then give it a unique name.
6. Select your location or region.
7. Then select your pricing plan as Standard.
8. Now go to review page and create your very first container registry.
9. When it is deployed then click on go to resources.

Basics Networking Encryption Tags Review + create

Azure Container Registry allows you to build, store, and manage container images and artifacts in a private registry for all types of container deployments. Use Azure container registries with your existing container development and deployment pipelines. Use Azure Container Registry Tasks to build container images in Azure on-demand, or automate builds triggered by source code updates, updates to a container's base image, or timers. [Learn more](#)

#### Project details

Subscription \*

Free Trial

Resource group \*

app-grp

[Create new](#)

#### Instance details

Registry name \*

appregistry334422



.azurecr.io

Location \*

North Europe

Use availability zones ⓘ



i Availability zones are activated on premium registries and in regions that support availability zones. [Learn more](#)

Pricing plan \* ⓘ

Standard



[Review + create](#)

[< Previous](#)

[Next: Networking >](#)

Microsoft.ContainerRegistry | Overview ⚡ ...

Deployment

Search

✓ Your deployment is complete

Deployment name : Microsoft.ContainerRegistry  
Subscription : Free Trial  
Resource group : app-grp

Start time : 12/31/2023, 12:56:14 AM  
Correlation ID : 858a11fc-d26c-49ca-bac5-c12f73863453

> Deployment details  
▽ Next steps

[Go to resource](#)

Give feedback  
[Tell us about your experience with deployment](#)

10. If you go on to the resource on the left-hand side, if you go on to your repositories, when you upload your images onto the container registry, it will actually come as a repository within the registry itself.

## Services

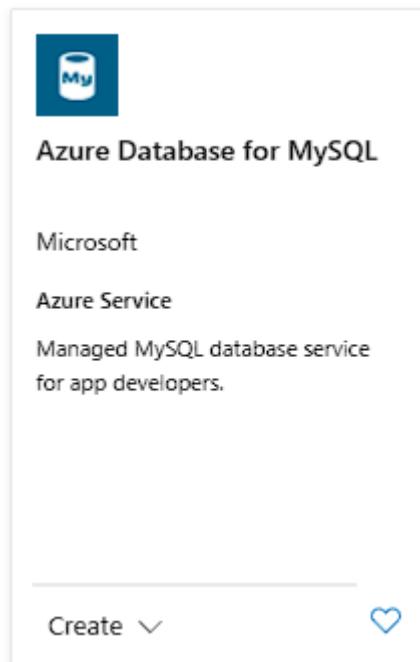
-  Repositories
-  Webhooks
-  Geo-replications
-  Tasks
-  Connected registries (Preview)
-  Cache



A screenshot of the Azure Services blade. At the top, there's a header with a 'New to ACR' notification about artifact streaming. Below the header is a search bar labeled 'Search to filter repositories ...'. Underneath the search bar, there are two sections: 'Repositories ↑↓' and 'Cache Rule'. The 'Repositories' section has a note 'No result'.

## STEP 2: CONTAINERIZE AN APPLICATION

1. You are going to create a machine based on MYSQL Database service.
2. For that go to create resources and search MYSQL Database service.
3. From the search options you need to choose this one.



4. Now click on create then create your MYSQL database.
5. When you are on the next page you will have two options to choose from.
6. Here you need to choose Flexible server.

## How do you plan to use the service?

**Flexible server**

Best for production workloads that require zone resiliency, predictable performance, maximum control with IOPs scaling, custom maintenance window, cost optimization controls and simplified developer experience.

[Create](#) [Learn More ↗](#)

**Wordpress + MySQL Flexible server**

Wordpress is state of the art publishing platform with a focus on aesthetics, web standards and usability. Use this template to create Wordpress on APP Service and Azure Database for MySQL Flexible Server in a Virtual network.

[Create](#) [Learn More ↗](#)

7. Now you have to choose your resource group.

### Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ	<input type="text" value="Free Trial"/>
Resource group * ⓘ	<input type="text" value="app-grp"/> <a href="#">Create new</a>

8. Then you need to give a unique server name.
9. Then select your region, workload type should be for development.
10. Keep the rest things to default.

### Server details

Enter required settings for this server, including picking a location and configuring the compute and storage resources.

Server name * ⓘ	<input type="text" value="mysqlserver223344"/> ✓
Region * ⓘ	<input type="text" value="North Europe"/> ↴
MySQL version * ⓘ	<input type="text" value="8.0"/> ↴
Workload type ⓘ	<input type="radio"/> <b>For small or medium size databases</b> <input type="radio"/> <b>Tier 1 Business Critical Workloads</b> <input checked="" type="radio"/> <b>For development or hobby projects</b>
Compute + storage ⓘ	<b>Burstable, B1ms</b> 1 vCores, 2 GiB RAM, 20 GiB storage, Auto scale IOPS <b>Geo-redundancy : Disabled</b> <a href="#">Configure server</a>
Availability zone ⓘ	<input type="text" value="No preference"/> ↴

11. Now select the authentication method as MYSQL authentication only
12. Then give a user name and password.
13. Now move to next page.

Authentication method

MySQL authentication only  
 Microsoft Entra authentication only  
 MySQL and Microsoft Entra authentication

Admin username \*  ✓

Password \*  ✓

Confirm password \*  ✓

---

[Review + create](#)

[Next : Networking >](#)

14. In the networking section the connectivity method should be set to public access.

Basics    **Networking**    Security    Tags    Review + create

Configure networking access and security for your server.

#### Network connectivity

You can connect to your server by specifying a public IP address, creating private endpoints or from within a selected virtual network.

Connectivity method   Public access (allowed IP addresses) and Private endpoint  
 Private access (VNet Integration)

**i** Connections from the IP addresses configured in the Firewall rules section below will have access to this server. By default, no public IP addresses are allowed. [Learn more](#)

15. Click on public access if it is not checked by default.
16. Then in the firewall rules, click on allow public access from any azure service within azure to this server.
17. Then you need to add current client IP address.
18. Now just move to review page and create your MySQL database server.
19. Wait till the deployment is complete.

#### Public access

- Allow public access to this resource through the internet using a public IP address ⓘ

#### Firewall rules

Inbound connections from the IP addresses specified below will be allowed to port 3306 on this server. [Learn more ↗](#)

- Allow public access from any Azure service within Azure to this server ⓘ

+ Add current client IP address ( 192.140.153.172 ) + Add 0.0.0 - 255.255.255.255

Firewall rule name	Start IP address	End IP address	
ClientIPAddress_2023-12-31_1-9-18	192.140.153.172	192.140.153.172	
<input type="text"/> Firewall rule name	<input type="text"/> Start IP address	<input type="text"/> End IP address	

20. Once your deployment is complete go to resources.

#### Your deployment is complete

 Deployment name: MySQLFlexibleServer\_2a5bdeedc8674287b7205... Start time: 12/31/2023, 1:12:11 AM  
Subscription: [Free Trial](#) Correlation ID: 47361d02-02af-4b47-9a17-12bbf2abbf97   
Resource group: [app-grp](#)

✓ Deployment details

✗ Next steps

[Learn how to manage your server](#) Recommended  
[For public access connectivity, setup a firewall rule to connect to the server](#) Recommended  
[Learn about private access connectivity method](#) Recommended  
[Setup monitoring alerts](#) Recommended

[Go to resource](#)

21. You are going to use a file for this lab and you can get that file from [GitHub](#).

22. Once you get that file open it with Microsoft Visual Studio.

23. Here you need to change server address.

24. Then your user's name and your password.

25. Once it has been done leave it for the time being.

```

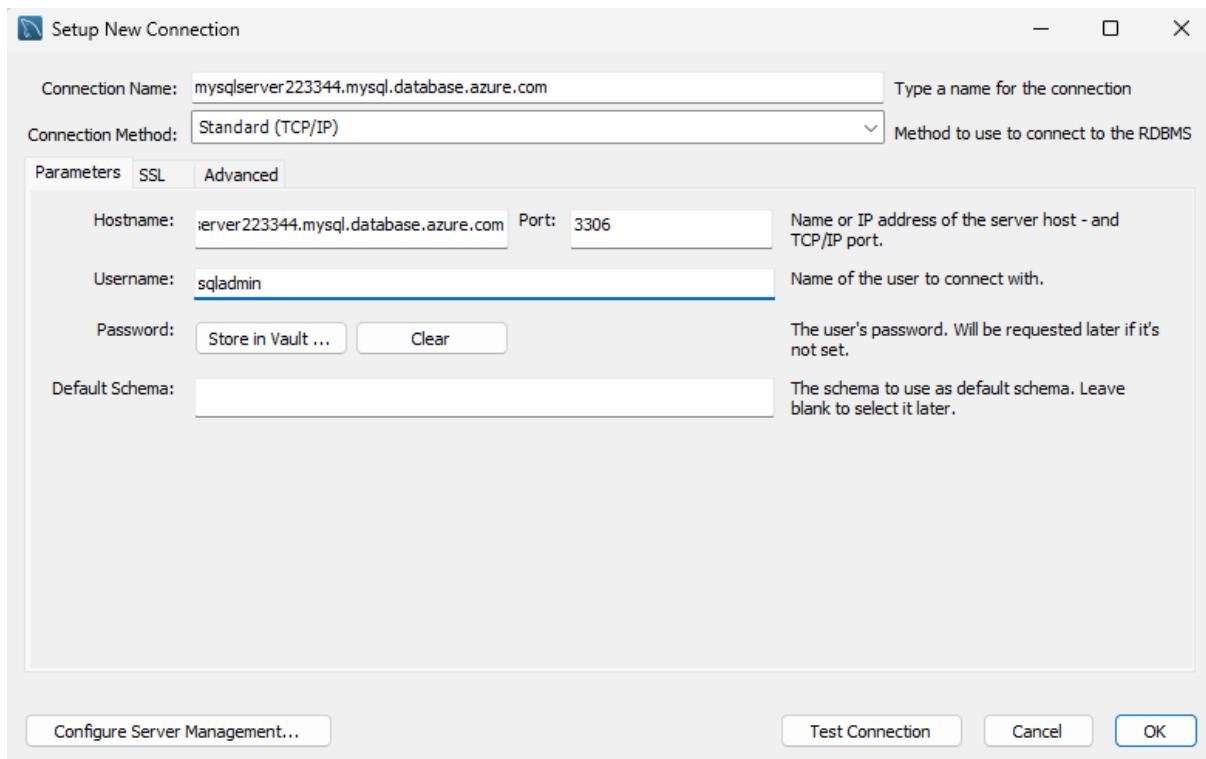
1  using MySql.Data.MySqlClient;
2  using sqlapp.Models;
3  using System.Data.SqlClient;
4
5  namespace sqlapp.Services
6  {
7      // This service will interact with our Product data in the SQL database
8      2 references
9      public class CourseService
10     {
11         private static string dbConnectionString = "server=mysqlserver223344.mysql.database.azure.com;user=sqldadmin;password=Password123;database=appdb";
12
13         1 reference
14         MySqlConnection GetConnection()
15         {
16             return new MySqlConnection(dbConnectionString);
17         }
18
19         public List<Course> GetCourses()
20         {
21             List<Course> _list = new List<Course>();
22             string _statement = "SELECT CourseID,CourseName,rating from Course";
23             MySqlConnection _connection = GetConnection();
24             MySqlCommand _sqlcommand = new MySqlCommand(_statement, _connection);
25
26             _connection.Open();
27
28             using (MySqlDataReader _reader = _sqlcommand.ExecuteReader())
29             {
30                 while (_reader.Read())
31                 {
32                     Course _course = new Course()
33                     {
34                         CourseID = _reader.GetInt32(0),
35                         CourseName = _reader.GetString(1),
36                         Rating = _reader.GetDecimal(2);
37                     };
38                 }
39             }
40         }
41     }
42 }

```

26. Now you need to install MySQL Workbench in your local system. If you already have that then use it.
27. Open MySQL Workbench. Click on the plus icon, a setup window will open to create a new connection.

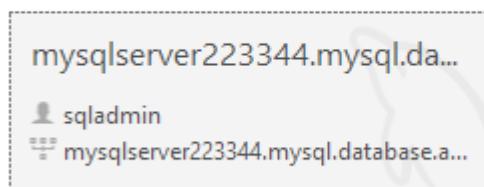
## MySQL Connections

28. Then you need to go to azure portal and copy the server's name which SQL database has created for use.
29. Once you have copied it, then paste it in the MySQL workbench.
30. Its your choice to give connection name whatever you like.
31. Then in the host's name paste the server's name because it will help you to connect your workbench with the SQL database.
32. Now you need to give your username which you used while creating the database.
33. Then click on test connection, it will ask for your password then it will test out your connection to see whether there is any error or not.
34. If there is no error then it will show you a message that the connection was successful.



35. Once you have successfully connected with the database. The connection will look like this in the workbench.

## MySQL Connections + ↴



36. Click on this connection. It will open up the editor, where you can write commands to create a table.
37. Now you are going to create a table.
38. The command to create table are mentioned below use those commands to create a table.

```
create database appdb;
```

```
use appdb;
```

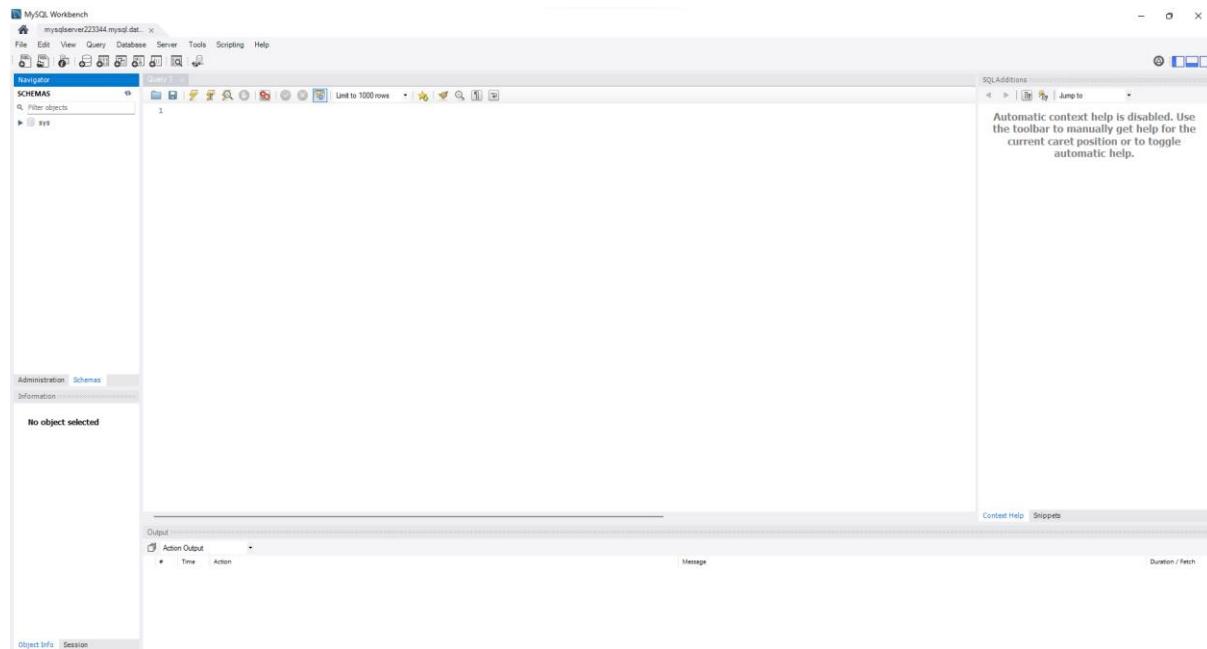
```
CREATE TABLE Course
(CourseID int, CourseName varchar(1000), Rating numeric(2,1));
```

```
INSERT INTO Course(CourseID,CourseName,Rating) VALUES(1,'AZ-204 Developing Azure solutions',4.5);
```

```
INSERT INTO Course(CourseID,CourseName,Rating) VALUES(2,'AZ-303 Architecting Azure solutions',4.6);
```

```
INSERT INTO Course(CourseID,CourseName,Rating) VALUES(3,'DP-203 Azure Data Engineer',4.7);
```

```
SELECT * FROM Course;
```



Query 1 × SQLAdditions

1 • create database appdb;

2

3

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Context Help Snippets

Output:

Action Output

#	Time	Action	Message	Duration / Fetch
1	03:28:26	create database appdb	1 row(s) affected	0.031 sec

Query 1 × SQLAdditions

1 • use appdb;

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Context Help Snippets

Output:

Action Output

#	Time	Action	Message	Duration / Fetch
1	03:28:26	create database appdb	1 row(s) affected	0.031 sec
2	03:28:52	use appdb	0 row(s) affected	0.000 sec

Query 1

```
CREATE TABLE Course
(CourseID int, CourseName varchar(1000), Rating numeric(2,1));
```

SQLAdditions :::::

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Context Help Snippets

Output

#	Time	Action	Message	Duration / Fetch
1	03:30:49	CREATE TABLE Course (CourseID int, CourseName varchar(1000), Rating ...)	0 row(s) affected	0.062 sec

Query 1

```
INSERT INTO Course(CourseID,CourseName,Rating) VALUES(1,'AZ-204 Developing Azure solutions',4.0);
INSERT INTO Course(CourseID,CourseName,Rating) VALUES(2,'AZ-303 Architecting Azure solutions',4.0);
INSERT INTO Course(CourseID,CourseName,Rating) VALUES(3,'DP-203 Azure Data Engineer',4.7);
```

SQLAdditions :::::

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Context Help Snippets

Output

#	Time	Action	Message	Duration / Fetch
1	03:30:49	CREATE TABLE Course (CourseID int, CourseName varchar(1000), Rating ...)	0 row(s) affected	0.062 sec
2	03:31:18	INSERT INTO Course(CourseID,CourseName,Rating) VALUES(1,'AZ-204 D...)	1 row(s) affected	0.000 sec
3	03:31:18	INSERT INTO Course(CourseID,CourseName,Rating) VALUES(2,'AZ-303 Ar...)	1 row(s) affected	0.016 sec
4	03:31:18	INSERT INTO Course(CourseID,CourseName,Rating) VALUES(3,'DP-203 A...)	1 row(s) affected	0.000 sec

Query 1

1 •    **SELECT \* FROM Course;**

2

3

The screenshot shows the MySQL Workbench interface. At the top is a toolbar with various icons. Below it is a query editor window titled "Query 1" containing the SQL command "SELECT \* FROM Course;". The results grid below shows three rows of data:

	CourseID	CourseName	Rating
▶	1	AZ-204 Developing Azure solutions	4.5
	2	AZ-303 Architecting Azure solutions	4.6
	3	DP-203 Azure Data Engineer	4.7

	CourseID	CourseName	Rating
▶	1	AZ-204 Developing Azure solutions	4.5
	2	AZ-303 Architecting Azure solutions	4.6
	3	DP-203 Azure Data Engineer	4.7

39. Once the table is created successfully. Then you need to go to Microsoft Visual Studio.
40. There you are going to run that project locally to see if it gets connects to your database.
41. Hence you can see that it has connected to the database and it showing all the records that you created in the workbench.

mysqldatabase - Microsoft Edge

sqlapp Home Privacy

This is a list of Courses

Course ID	Course Name	Rating
1	AZ-204 Developing Azure solutions	4.5
2	AZ-303 Architecting Azure solutions	4.6
3	DP-203 Azure Data Engineer	4.7