Amazon RDS Lab

AWS Essentials

Version 3.1

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For feedback, suggestions, or corrections, please email: aws-course-feedback@amazon.com.

Introduction

Overview

Amazon Relational Database Service (Amazon RDS) is a web service that makes it easy to set up, operate, and scale a relational database in the cloud. It provides cost-efficient and resizable capacity while managing time-consuming database administration tasks, freeing you up to focus on your applications and business.

Amazon RDS gives you access to the capabilities of a familiar MySQL, Oracle or Microsoft SQL Server database engine. This means that the code, applications, and tools you already use today with your existing databases can be used with Amazon RDS. Amazon RDS automatically patches the database software and backs up your database, storing the backups for a user-defined retention period and enabling point-in-time recovery. You benefit from the flexibility of being able to scale the compute resources or storage capacity associated with your Database Instance (DB Instance) via a single API call. Please review http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/CHAP_GettingStarted.html for further information about Amazon AWS RDS features.

Topics Covered

The following Amazon RDS topics are covered in this lab:

- Overview of the RDS Management Console
- Creating and modifying Security Groups
- Launching a MySQL instance
- Connecting to and utilizing the MySQL instance
- Working with and adjusting the database

The Scenario

As the operations focused individual in the start-up business, Asperatus Tech, you are tasked with coming up with a low cost, high availability solution for your customer facing website. Your website will host a myriad of documents for your customers, as well as video and static content. A distributed workforce will iterate upon the content. You have reached the final step in this process, configuring a relational database using RDS.

Using Amazon RDS

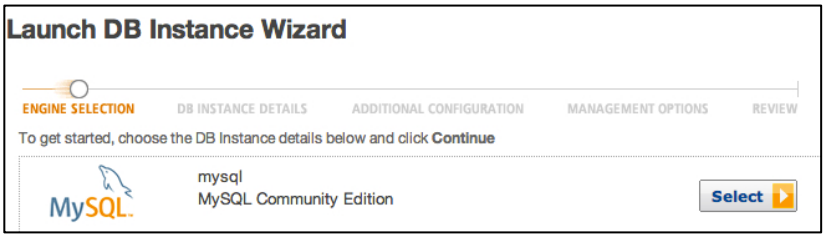
The AWS Management Console

Please review the instructions included within the first lab for opening and configuring the console.

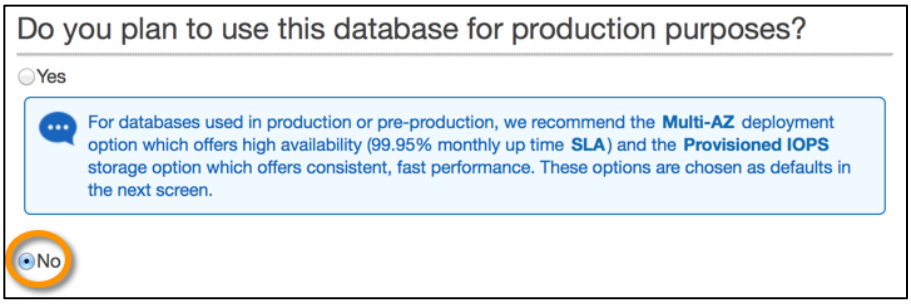
Amazon RDS Basics

You will now tackle managing Asperatus Tech data within a relational database. In this section, you will create and modify security groups, launch an instance, and learn about the RDS Management Console.

1. Click the **RDS** link to open the RDS Management Console.
2. Click **Launch a DB Instance**.
3. On the "Engine Selection" panel, choose the **MySQL** instance and click **Select**.



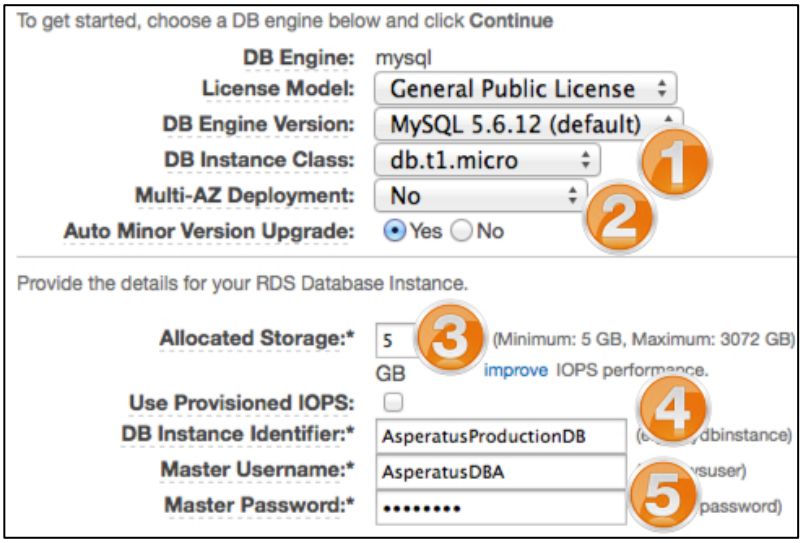
4. Choose **No** to the question "Do you plan to use this instance for production?" This option enables multi-az deployment and for the lab is not necessary. You would want to review this for your own organization. Click **Next Step.**



5.

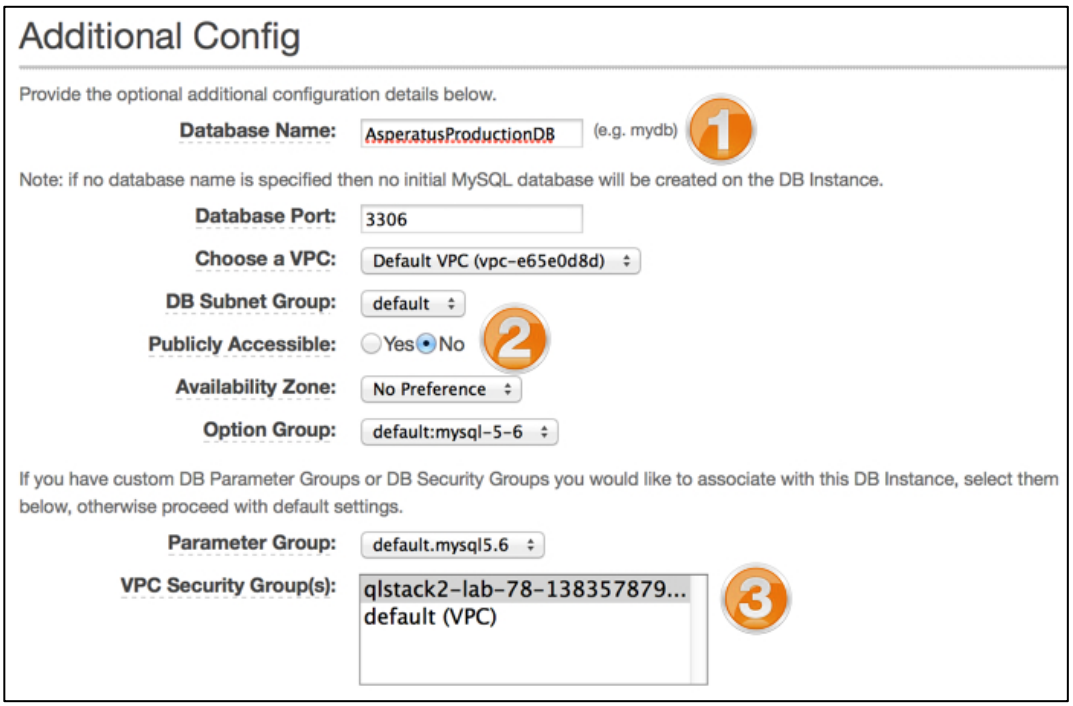
6. On the "DB Instance Details" panel, type or choose the following:

   (1) For **DB Instance Class**, choose **db.t1.micro**.
   (2) For **Multi-AZ Deployment**, choose **No**.
   (3) For **Allocated Storage**, type **5** (GB).
   (4) For **DB Instance Identifier**, type a name such as **AsperatusProductionDB**.
   (5) For **Master Username** and **Master Password** type values such as **AsperatusDBA** and **password**.
   (6) Accept the remaining default values and click **Next Step**.



7. On the “Additional Configuration” panel, type or choose the following:

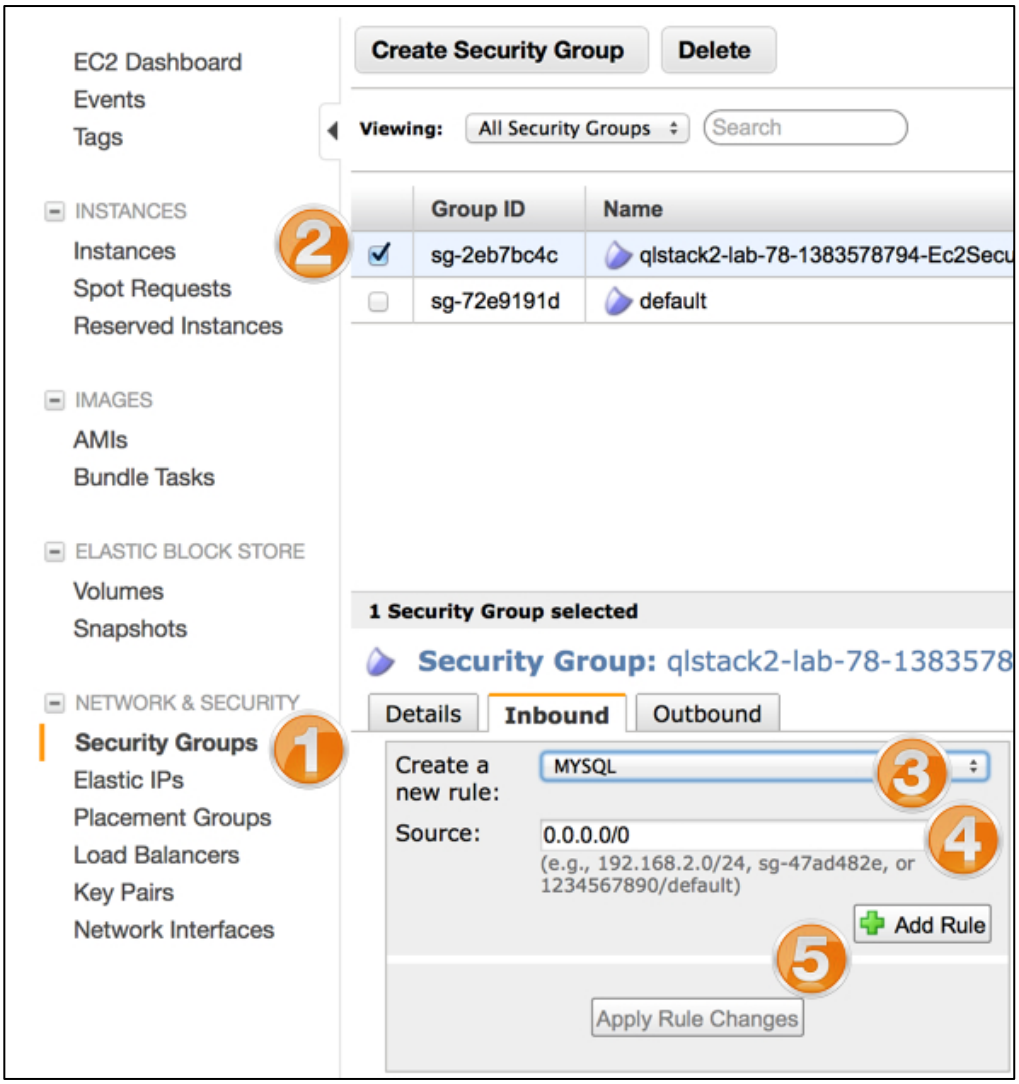
   (1) For **Database Name**, type a value such as **AsperatusProductionDB**.
   (2) For **Publicly Accessible**, tick **No**.
   (3) For **DB Security Group(s)**, select the group containing the text *qlstack* in its name.
   (4) Accept the remaining default values and click **Next Step**.



8. Make note of the options available for backups on the “Management Options” panel, tick **Yes** for **Enabled Automatic Backups** and click **Next Step**.
9. Review your options on the “Review” panel and then click **Launch DB Instance**. After a short time, you will have a functional MySQL relational database server.
10. Click the link **View your DB instances on the DB Instances page** to return to the RDS instances page.

11. You will need to allow connections to the MySQL port, 3306, in order for your Windows server instances to connect to the database. To do so:

    (1) Go to **EC2 > Network & Security > Security Groups**
    (2) Tick the security group containing *qlstack* in its name
    (3) Choose **Inbound** in the lower panel and choose **MYSQL** for the new rule
    (4) Validate **0.0.0.0/0** is present as source. If not, add it.
    (5) Click **Add Rule** then **Apply Rule Changes**

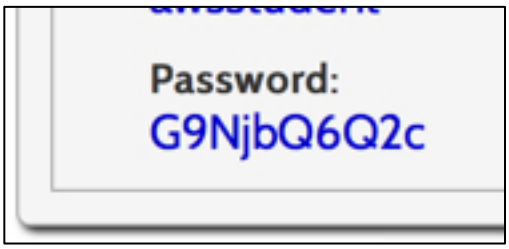


Using RDS

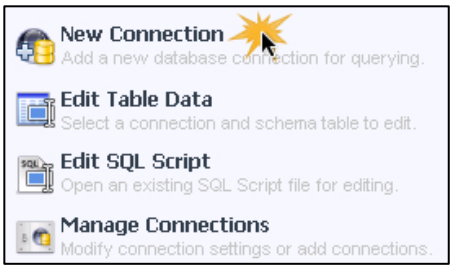
As an Asperatus engineer, you will likely need to have operational knowledge of connectivity to the relational database (RDS) for troubleshooting purposes. In this section, you learn how to connect to the MySQL database using the MySQL tools from your EC2 instance.

Connecting to the RDS database

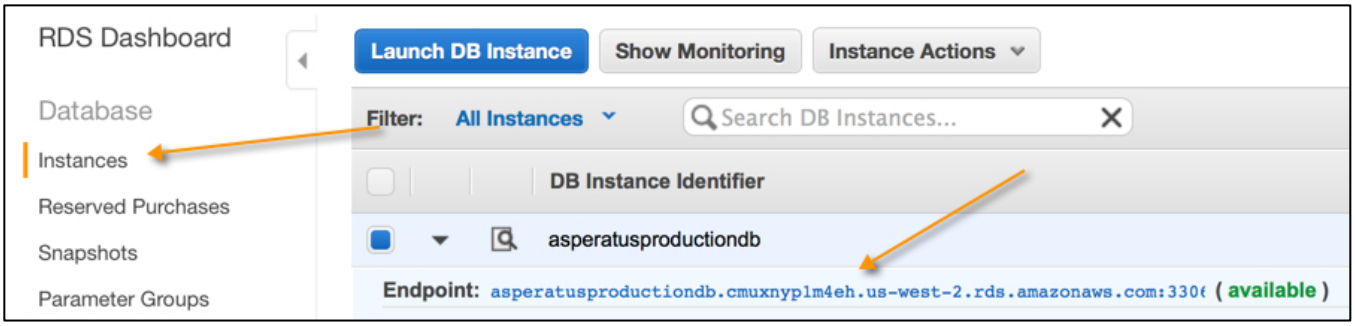
1. Using Remote Desktop Connection, log into one of your Windows EC2 instances. For assistance, see the steps in the EC2 lab.
   Note: The Windows server password is the password listed on the *qwik*LAB page:



2. From the **Start** menu, click **All Programs > MySQL > MySQL Workbench 5.2 CE**.
3. In MySQL Workbench, click **New Connection**.

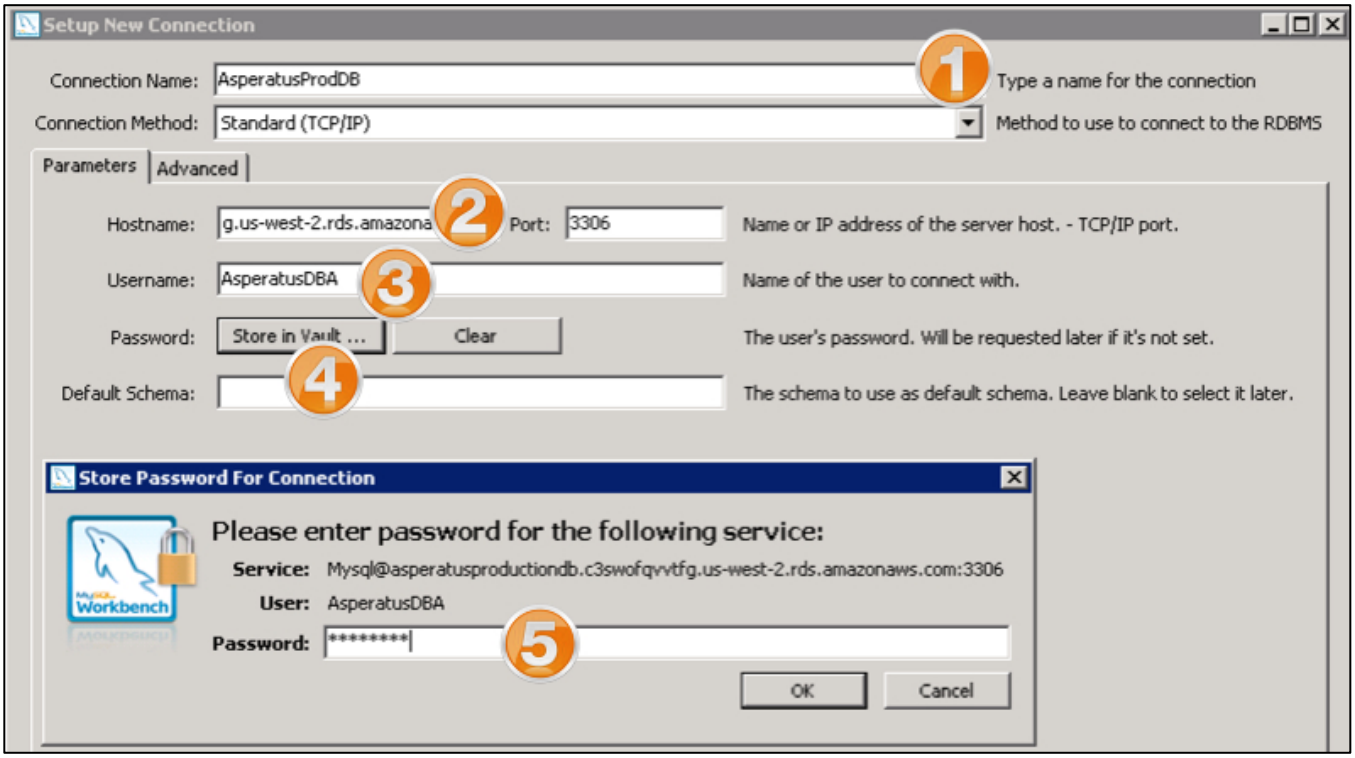


4. You need the connection details to create the new connection. To retrieve the connection details, open **RDS > Database > Instances**. Tick your instance name. Immediately below will be your **Endpoint**. Copy the entire string into notepad or a similar utility.

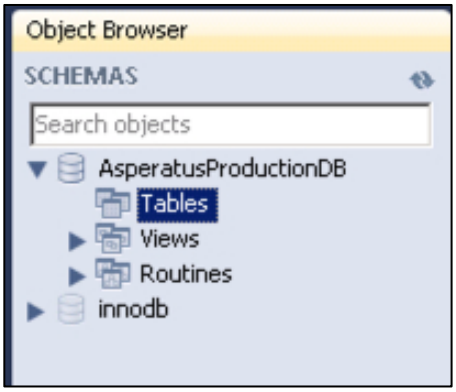


5. Return to your Windows server instance you are using to connect to the RDS database instance, and in the "Setup New Connection" dialog, type or choose the following:

   (1) For Connection Name, type a value such as **AsperatusProductionDB**.
   (2) On the Parameters tab, for Hostname, paste the full Endpoint name (without the ":3306").
   (3) For Username, type the value you specified earlier (**AsperatusDBA**).
   (4) Click **Store in Vault**
   (5) Type the password you specified earlier and click **OK**.
   (6) Click **Test Connection**.



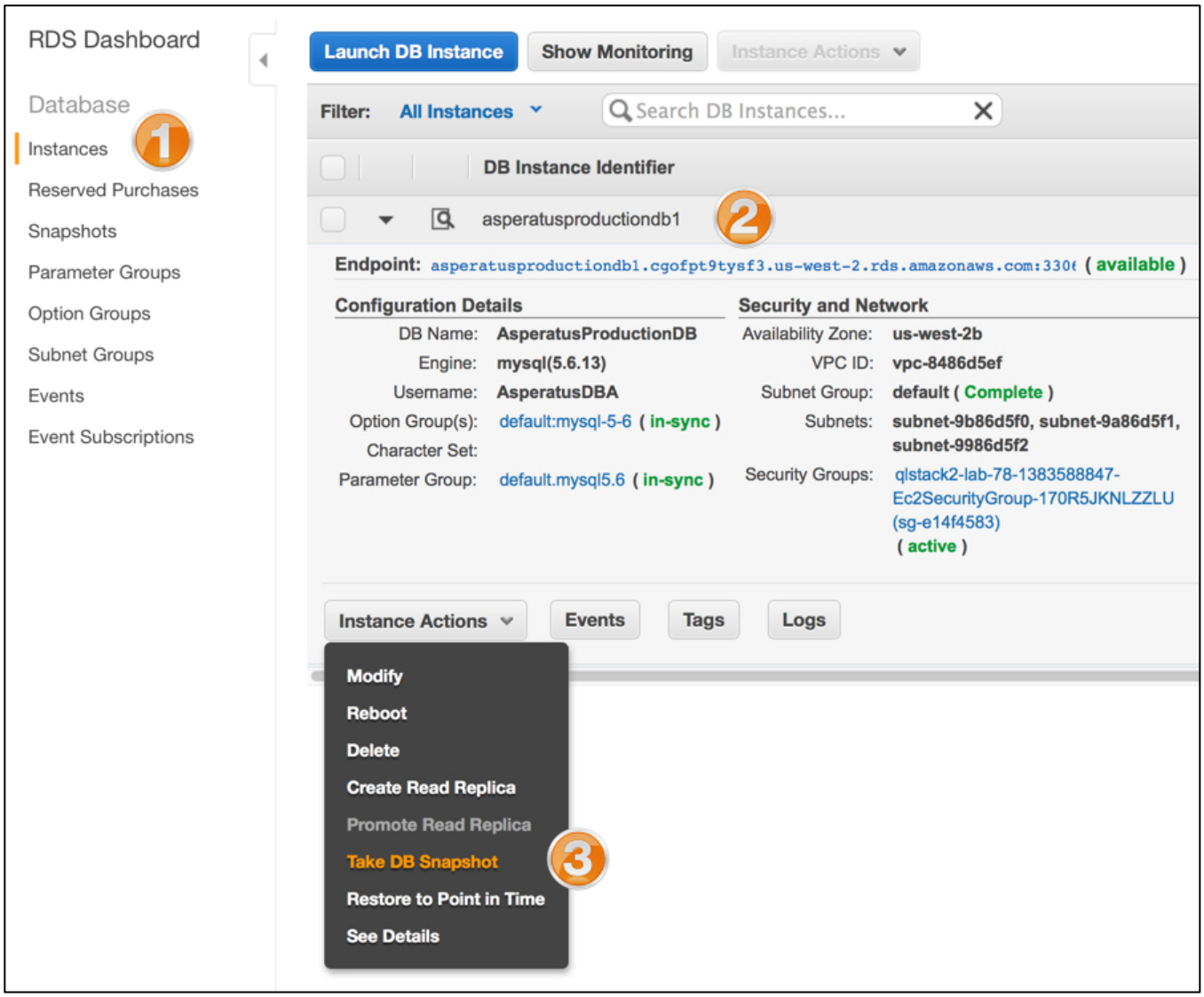
6. Click OK to dismiss the connection confirmation dialog.
7. Click **OK** in the “Setup New Connection” dialog. This closes the window and returns you to MySQL Workbench.
8. In MySQL workbench, double-click your database **AsperatusProductionDB**.
9. The SQL Editor window opens, showing a successful connection to your database.
10. Expand your database name (**AsperatusProductionDB**). The “Object Browser” allows you to view various schema objects.



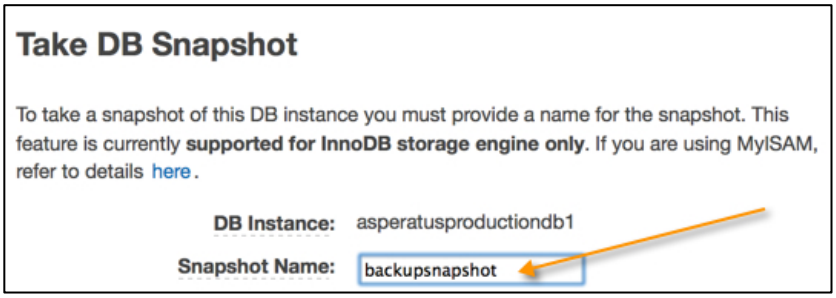
RDS Management

In this section you use the RDS Management Console to modify RDS functionality, to create snapshots, to adjust maintenance windows, and to create a deployment across multiple availability zones.

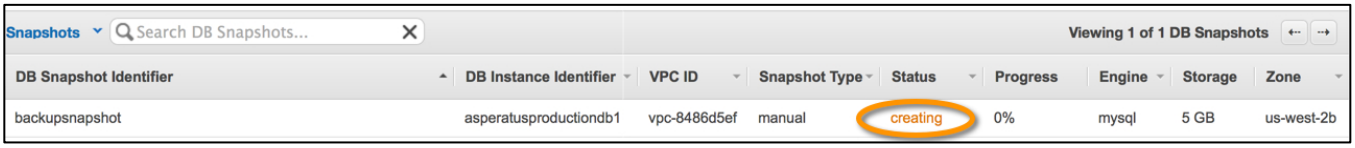
1. Take a database snapshot by:
   (1) Go to **RDS Management Console > Instances**
   (2) Select your **database instance**
   (3) Click **Instance Actions > Take DB Snapshot**



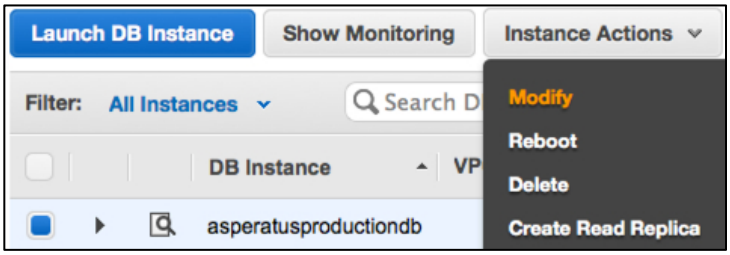
2. In the **Take DB Snapshot** window, input a snapshot name and click **Yes, Take Snapshot**



3. The RDS Management Console shows the progress of the snapshot in the **Status** column.

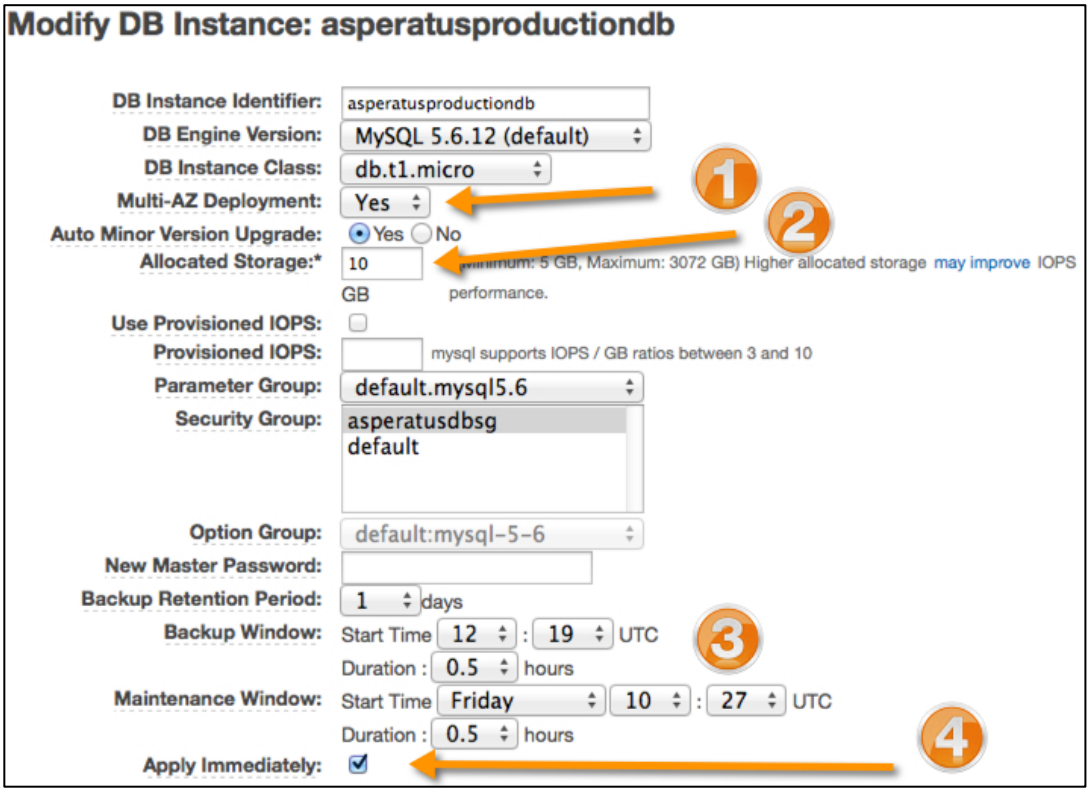


4. In the left panel of the RDS Management Console, click **Instances**.
5. Tick your instance, click **Instance Actions**, and choose **Modify**.

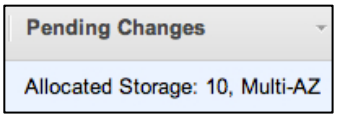


6. The “Modify DB Instance” dialog allows you to increase database size, to change the maintenance window, and to deploy your database across Availability Zones. To modify your database instance, type or choose the following:

   (1) For **Multi-AZ Deployment**, choose **Yes**.
   (2) For **Allocated Storage**, type **10** (GB).
   (3) Set the **Maintenance Window** to **Sunday**, **09:25** UTC for **.5** hours.
   (4) Check **Apply Immediately**.



7. Click **Modify DB Instance**.
8. Your pending changes display in the RDS dashboard.



9. After a short time, the changes are committed. This section demonstrates how easy it is to modify a database instance and to make it redundant across multiple availability zones.

Conclusion

Congratulations! You now have successfully:

- Viewed the RDS Management Console
- Created and modified Security Groups
- Launched a MySQL instance
- Connected to and utilized a MySQL instance
- Worked with and adjusted a database

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