

# Create an RDS Subnet Group

Amazon Relational Database Service (**Amazon RDS**) makes it easy to set up, operate, and scale a relational database in the cloud. Before launching actual RDS instances, you need to configure a **DB Subnet Group**.

**Subnets** are segments of a VPC's IP address range that allow you to group your resources based on security and operational needs. A **DB Subnet Group** is a collection of subnets (typically private) that you create in a VPC and designate for your DB instances. Each DB subnet group should have subnets in at least two Availability Zones in a given region. Note that SQL Server Mirroring with a SQL Server DB instance requires at least 3 subnets in distinct Availability Zones.

When creating a DB instance in a VPC, you must select a DB subnet group. Amazon RDS uses that DB subnet group and your preferred Availability Zone to select a subnet and an IP address within that subnet to associate with your DB instance. When Amazon RDS creates a DB instance in a VPC, it assigns a network interface to your DB instance by using an IP address selected from your DB Subnet Group. If the primary DB instance of a Multi-AZ deployment fails, Amazon RDS can promote the corresponding standby and subsequently create a new standby using an IP address from an assigned subnet in one of the other Availability Zones.

You can create an RDS Subnet Group using the RDS launch wizard.

Select the RDS service from the Management Console dashboard:



From the RDS dashboard, click **Subnet Groups** from the left-hand menu.

The screenshot shows the AWS RDS Dashboard. On the left, there's a sidebar with links: Instances, Reserved Purchases, Snapshots, Security Groups, Parameter Groups, Option Groups, Subnet Groups (which is selected and highlighted in orange), Events, and Event Subscriptions. The main area has a title bar with 'Create DB Subnet Group' (highlighted in blue), 'Edit', and 'Delete' buttons. Below that is a search bar labeled 'Search DB Subnet Groups' with a magnifying glass icon and a clear 'X'. There's also a 'Filter' button. A table header row includes columns for 'Name', 'Description', 'Status', and 'VPC'. A message at the bottom right says 'No records found.'

Click **Create DB Subnet Group** to open the creation wizard.

You must fill the form using the following data:

- **Name:** cloudrds
- **Description:** rds lab
- **VPC ID:** select the available one

## Create a database cluster using RDS

Amazon Relational Database Service (**Amazon RDS**) makes it easy to set up, operate, and scale a relational database in the cloud. Amazon RDS is designed for developers or businesses who require the full features and capabilities of a relational database or who wish to migrate existing applications and tools that utilize a relational database. It gives you access to the capabilities of a **MySQL**, **Oracle**, **Microsoft SQL Server**, **MariaDB**, **Amazon Aurora**, or **PostgreSQL** database engine.

The RDS service is fully managed by Amazon. RDS will make sure that the database software stays up-to-date with the latest patches and any faulty compute instance powering your database deployment will be automatically replaced in the event of a hardware failure. You can automatically or manually create database snapshots and easily scale your infrastructure up or down using the AWS Management Console.

You can launch an RDS instance using the RDS launch wizard. Select the RDS service from the Management Console dashboard:



Select **Instances** from the left menu and click **Launch DB Instance**.

A screenshot of the AWS RDS Dashboard. On the left, there's a sidebar with options: RDS Dashboard, Instances (which is selected and highlighted in orange), Reserved Purchases, Snapshots, Security Groups, Parameter Groups, Option Groups, Subnet Groups, Events, and Event Subscriptions. The main area has a header with 'Launch DB Instance' (in blue), 'Show Monitoring', and 'Instance Actions'. Below the header is a search bar with 'Filter: All Instances' and a 'Search DB Instances...' input field. There are also buttons for 'DB Instance', 'VPC', 'Multi-AZ', 'Class', 'Status', and 'Maintenance'. A descriptive text box states: 'Amazon Relational Database Service (RDS) is a web service that makes it easy to set up, manage, and scale relational databases in the cloud. It provides automatic backup and recovery, monitoring and alerting, and integrates with other AWS services like Amazon VPC and AWS Lambda.' At the bottom right, there's a note: 'Note: Your DB instances are currently in the **Creating** state.'

The **Launch DB Instance Wizard** appears and you must select the database engine. Choose the **MySQL** database engine and click the **Select** button.

Screenshot of the AWS RDS Step 1: Select Engine interface.

The page title is "Select Engine". A sub-header says "To get started, choose a DB Engine below and click Select." Below this, there is a list of database engines:

- Amazon Aurora
- MySQL (selected)
- MariaDB
- PostgreSQL
- ORACLE
- Microsoft SQL Server

The MySQL entry is highlighted with a red circle. To its right is a blue "Select" button, which is also circled in red. At the bottom right of the page is a "Cancel" link.

The next step asks if you are planning to use the DB instance you are creating for production purposes. By selecting Yes, the failover option, Multi-AZ and the Provisioned IOPS storage option will be preselected in the following step. For this exercise, please select **Dev/Test MySQL**. Then click **Next Step**.

The screenshot shows the AWS RDS setup process at Step 2: Production?. The user has selected the MySQL engine for a Dev/Test database instance. The 'Next Step' button is highlighted with a red circle.

Step 1: Select Engine

**Step 2: Production?**

Step 3: Specify DB Details

Step 4: Configure Advanced Settings

Do you plan to use this database for production purposes?

Production

Amazon Aurora  
**Recommended**  
MySQL-compatible, enterprise-class database at 1/10th the cost of commercial databases.

MySQL  
Use Multi-AZ Deployment and Provisioned IOPS Storage as defaults for high availability and fast, consistent performance.

Dev/Test

MySQL  
This instance is intended for use outside of production or under the RDS Free Usage Tier.

Billing is based on RDS pricing

Cancel Previous **Next Step**

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On the **Specify DB Details** page, you should select the following options:

- **License Model:** general-public-license
- **DB Engine Version:** select the latest one
- **DB Instance Class:** db.t2.micro
- **Multi-AZ Deployment:** No
- **Storage Type:** General Purpose (SSD)
- **Allocated Storage:** 20GB

## Instance Specifications

DB Engine	mysql
License Model	general-public-license ▾
DB Engine Version	MySQL 5.6.35 ▾
<p> Review the <a href="#">Known Issues/Limitations</a> to learn about potential compatibility issues with specific database versions.</p>	
DB Instance Class	db.t2.micro — 1 vCPU, 1 GiB RAM ▾
Multi-AZ Deployment	No ▾
Storage Type	General Purpose (SSD) ▾
Allocated Storage*	20 GB



Provisioning less than 100 GB of General Purpose (SSD) storage for high throughput workloads could result in higher latencies upon exhaustion of the initial General Purpose (SSD) IO credit balance.

[Click here](#) for more details.

Scroll down the page and continue configuring your RDS Instance by filling-in the following fields:

- **DB Instance Identifier:** rds-lab
- **Master Username:** clouduser
- **Master Password:** myStrongRDSpwd!

## Settings

<b>DB Instance Identifier*</b>	rds-lab
<b>Master Username*</b>	cloudacademy
<b>Master Password*</b>	.....
<b>Confirm Password*</b>	.....

Retype the value you specified for Master Password.

\* Required

[Cancel](#)

[Previous](#)

[Next Step](#)

Click **Next Step**, and start configuring the Advanced Settings.

On the **Configure Advanced Settings** page, provide additional information that RDS needs to launch the MySQL DB instance.

You need to select the following options:

- **VPC**: select the available one
- **Subnet Group**: cloudrds
- **Publicly Accessible**: No
- **Availability Zone**: us-west-2a
- **VPC Security Group(s)**: Create new Security Group
- **Database Name**: rdsappdb
- **Database Port**: 3306
- **DB Parameter Group**: default
- **Option Group**: default
- **Enable Encryption**: No

## Configure Advanced Settings

### Network & Security



VPC*	Default VPC (vpc-de40f6bb)
Subnet Group	cloudacademy
Publicly Accessible	No
Availability Zone	No Preference
VPC Security Group(s)	<ul style="list-style-type: none"><li>Create new Security Group</li><li>default (VPC)</li><li>rds-launch-wizard-1 (VPC)</li></ul>

### Database Options

#### Database Name

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

#### Database Port

#### DB Parameter Group

#### Option Group

#### Enable Encryption

Continue specifying the following settings for the **Backup** and **Mainteniance** options:

- **Backup Retention Period:** 0 days
- **Backup Window:** No preference
- **Auto Minor Version Upgrade:** Yes
- **Mainteniance Window:** No preference

**Backup**

Please note that automated backups are currently supported for InnoDB storage engine only. If you are using MyISAM, refer to detail [here](#).

**Backup Retention Period**  days

A backup retention period of zero days will disable automated backups for this DB Instance.

**Backup Window**

**Monitoring**

**Enable Enhanced Monitoring**

**Maintenance**

**Auto Minor Version Upgrade**

**Maintenance Window**

Select the period in which you want pending modifications (such as changing the DB instance class) or patches applied to the DB instance by Amazon RDS. Any such maintenance should be started and completed within the selected period. If you do not select a period, Amazon RDS will assign a period randomly. [Learn More](#).

\* Required

[Cancel](#) [Previous](#) [Launch DB Instance](#)

Click **Launch DB Instance**, and then click **View Your DB Instances**.

DB Instance	VPC	Multi-AZ	Class	Status	Maintenance	Storage Type	Storage	Security Groups
rds-lab	vpc-d640f6bb	No	db.t2.micro	creating	None	General Purpose (SSD)	5 GB	rds-launch-wizard-1 (active)

**N.B.**, RDS instance creation requires **up to 10 minutes** for completion. Wait until its status becomes *available*.

## Create DB Subnet Group

To create a new Subnet Group give it a name, description, and select an existing VPC below. Once you select an existing VPC, you will be able to add subnets related to that VPC.

Name	cloudacademy	i
Description	rds lab	i
VPC ID	vpc-de40f6bb	⊕ i

Add Subnet(s) to this Subnet Group. You may add subnets one at a time below or [add all the subnets](#) related to this VPC. You may make additions/edits after this group is created. A minimum of 2 subnets is required.

Availability Zone	- Select One -		
Subnet ID	- Select One -	⊕	Add

Availability Zone	Subnet ID	CIDR Block	Action
None added			

[Cancel](#) [Create](#)

You must add the available subnets of the selected VPC. Click **add all the subnets** button for filling the subnet list and then click **Create**.

## Create DB Subnet Group

To create a new Subnet Group give it a name, description, and select an existing VPC below. Once you select an existing VPC, you will be able to add subnets related to that VPC.

Name	cloudacademy	i
Description	rds lab	i
VPC ID	vpc-de40f6bb	⊕ i

Add Subnet(s) to this Subnet Group. You may add subnets one at a time below or [add all the subnets](#) related to this VPC. You may make additions/edits after this group is created. A minimum of 2 subnets is required.

Availability Zone	- Select One -		
Subnet ID	- Select One -	⊕	Add

Availability Zone	Subnet ID	CIDR Block	Action
us-west-2a	subnet-62278f15	172.31.32.0/20	<a href="#">Remove</a>
us-west-2b	subnet-5a75ff3f	172.31.16.0/20	<a href="#">Remove</a>

[Cancel](#) [Create](#)

After a few seconds, your DB Subnet Group will be available and ready for use.

Create DB Subnet Group		Edit	Delete
Filter: <input type="text"/> Search DB Subnet Groups <span style="color: red;">X</span>			
	Name	Description	Status
<input type="checkbox"/>	<input checked="" type="checkbox"/> cloudacademy	rds lab	Complete vpc-de40f6bb

## Setup security group rules for connecting to the RDS instance

In order to use the previously created RDS instance inside the VPC, you need to **add an inbound rule to the VPC Security Group** created during the RDS instance creation.

The rules of a **Security Group** control the inbound traffic that's allowed to reach the instances that are associated with the security group and the outbound traffic that's allowed to leave them. By default, security groups allow all outbound traffic and deny all inbound traffic.

You can add new rules to a **VPC Security Group** using the AWS Management Console.

Select the VPC service from the Management Console dashboard:



Note: You've been working in the RDS console. Make sure you go back to the main console and select the **VPC** console.

In the navigation pane, click **Security Groups**. Locate and click the **rds-launch-wizard** security group.

The screenshot shows the AWS VPC Dashboard. On the left, there's a sidebar with various VPC-related options like Your VPCs, Subnets, Route Tables, etc., and a section for Security with Network ACLs and Security Groups. The 'Security Groups' option is highlighted with a yellow circle. The main area shows a table of security groups with columns for Name tag, Group ID, Group Name, VPC, and Description. One row is selected and highlighted with a red circle. Below the table, the details for the selected security group (sg-a27467c5) are shown, with tabs for Summary, Inbound Rules (which is active), Outbound Rules, and Tags. Under the Inbound Rules tab, there's an 'Edit' button, which is also highlighted with a red circle.

On the **Inbound Rules** tab, click **Edit**.

This screenshot shows the 'Edit' interface for the Inbound Rules of the sg-a27467c5 security group. The 'Inbound Rules' tab is selected. At the top, there are 'Cancel' and 'Save' buttons. Below them is a table with columns for Type, Protocol, Port Range, Source, and Remove. The Type is set to MySQL/Aurora (3306), Protocol to TCP (6), Port Range to 3306, and Source to 172.31.0.0/16. There is also an 'Add another rule' button at the bottom.

Ensure that the rule is completed using the following information:

- **Type:** MYSQL
- **Protocol:** TCP
- **Port:** 3306
- **Source:** 172.31.0.0/16

Click **Save**, and you will be ready to connect to your RDS instance inside the VPC.

## Create an EC2 instance with a key pair

You can launch an EC2 instance using the EC2 launch wizard.

Select the EC2 service from the Management Console dashboard:



From the EC2 dashboard, click **Launch Instance**.

A screenshot of the AWS EC2 Dashboard. On the left sidebar, there are several menu items: 'Events', 'Tags', 'Reports', 'Limits', 'INSTANCES' (which is expanded to show 'Instances', 'Spot Requests', and 'Reserved Instances'), and 'IMAGES' (which is expanded to show 'AMIs' and 'Bundle Tasks'). The main content area is titled 'Resources' and displays a summary of resources in the 'US West (Oregon) region': 0 Running Instances, 1 Elastic IPs; 0 Volumes, 0 Snapshots; 0 Key Pairs, 0 Load Balancers; 0 Placement Groups, 2 Security Groups. Below this, there's a section titled 'Create Instance' with the sub-instruction 'To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.' A large blue button labeled 'Launch Instance' is prominently displayed. At the bottom, a note states 'Note: Your instances will launch in the US West (Oregon) region'.

The **Choose an Amazon Machine Image (AMI)** page displays a list of basic configurations called **Amazon Machine Images (AMIs)** that serve as templates for your instance. Click **Select**

for the first listed 64-bit Amazon Linux AMI:

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start

1. Choose AMI   2. Choose Instance Type   3. Configure Instance   4. Add Storage   5. Tag Instance   6. Configure Security Group   7. Review

Cancel and Exit

Image	Name	Description	Root device type	Virtualization type	Select	64-bit
Amazon Linux	Amazon Linux AMI 2014.09.1 (HVM) - ami-b5a7ea85	The Amazon Linux AMI is an EBS backed image. It includes the 3.14 kernel, Ruby 2.1, PHP 5.5, PostgreSQL 9.3, Docker 1.2, the AWS command line tools, and repository access to many other packages.	ebs	hvm	Select	64-bit
Red Hat	Red Hat Enterprise Linux 7.0 (HVM), SSD Volume Type - ami-99bef1a9	Red Hat Enterprise Linux version 7.0 (HVM), EBS General Purpose (SSD) Volume Type	ebs	hvm	Select	64-bit

On the **Choose an Instance Type** page, you should **not** change any options. Simply make sure the default **t2.micro** is selected:

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types ▾ Current generation ▾ Show/Hide Columns

Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate
General purpose	t2.small	1	2	EBS only	-	Low to Moderate

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

Cancel Previous Review and Launch Next: Configure Instance Details

Click the **Next: Configure Instance Details** button. On this step of the wizard, make sure the following is configured:

1. Choose AMI   2. Choose Instance Type   3. Configure Instance   4. Add Storage   5. Add Tags   6. Configure Security Group   7. Review

**Step 3: Configure Instance Details**

Number of instances	1	Launch into Auto Scaling Group						
Purchasing option	<input type="checkbox"/> Request Spot instances							
Network	vpc-e9e1289   cloucademy-labs <input type="button" value="Create new VPC"/>							
Subnet	subnet-c2df2c8a   Public-A   us-west-2a <input type="button" value="Create new subnet"/> 251 IP Addresses available							
Auto-assign Public IP	Enable <input type="button" value="Create new IAM role"/>							
IAM role	None <input type="button" value="Create new IAM role"/> <b>⚠ You do not have permissions to list any IAM roles. Contact your administrator, or check your IAM permissions.</b>							
Shutdown behavior	Stop							
Enable termination protection	<input type="checkbox"/> Protect against accidental termination							
Monitoring	<input type="checkbox"/> Enable CloudWatch detailed monitoring Additional charges apply.							
Tenancy	Shared - Run a shared hardware instance <input type="button" value="Additional charges will apply for dedicated tenancy."/>							
<b>▼ Network interfaces</b> <table border="1"> <thead> <tr> <th>Device</th> <th>Network Interface</th> <th>Subnet</th> <th>Primary IP</th> <th>Secondary IP addresses</th> <th>IPv6 IPs</th> </tr> </thead> </table>			Device	Network Interface	Subnet	Primary IP	Secondary IP addresses	IPv6 IPs
Device	Network Interface	Subnet	Primary IP	Secondary IP addresses	IPv6 IPs			
<input type="button" value="Cancel"/> <input type="button" value="Previous"/> <input type="button" value="Review and Launch"/> <input type="button" value="Next: Add Storage"/>								

- Network:** Make sure the cloucademy-labs is selected for the VPC. (It is ok if no default VPC is found.)
- Subnet:** Select Public-A | US-west-2a
- Auto-assign Public IP:** Select Enable
- IAM role:** Notice that you do not have permissions to list IAM roles. That message is expected and ok. The student account has restricted privileges but the Lab will work fine without listing IAM roles.

Click **Next: Add Storage** when ready to proceed.

No changes are needed for storage so click **Next: Add Tags** to advance the wizard again.

No changes are needed for tags, so click **Next: Configure Security Group** to advance the wizard again. By default, an SSH rule is added for you. However, you may want to add one rule in order to enable a ping test. Click **Add Rule** and add the following ICMP rule so you can run a simple ping test later. (*Note:* In many production environments, allowing ping/ICMP communications is not even permitted. However, it is often allowed during initial setup and testing.) Your security group rules should look similar to the following:

**Edit inbound rules**

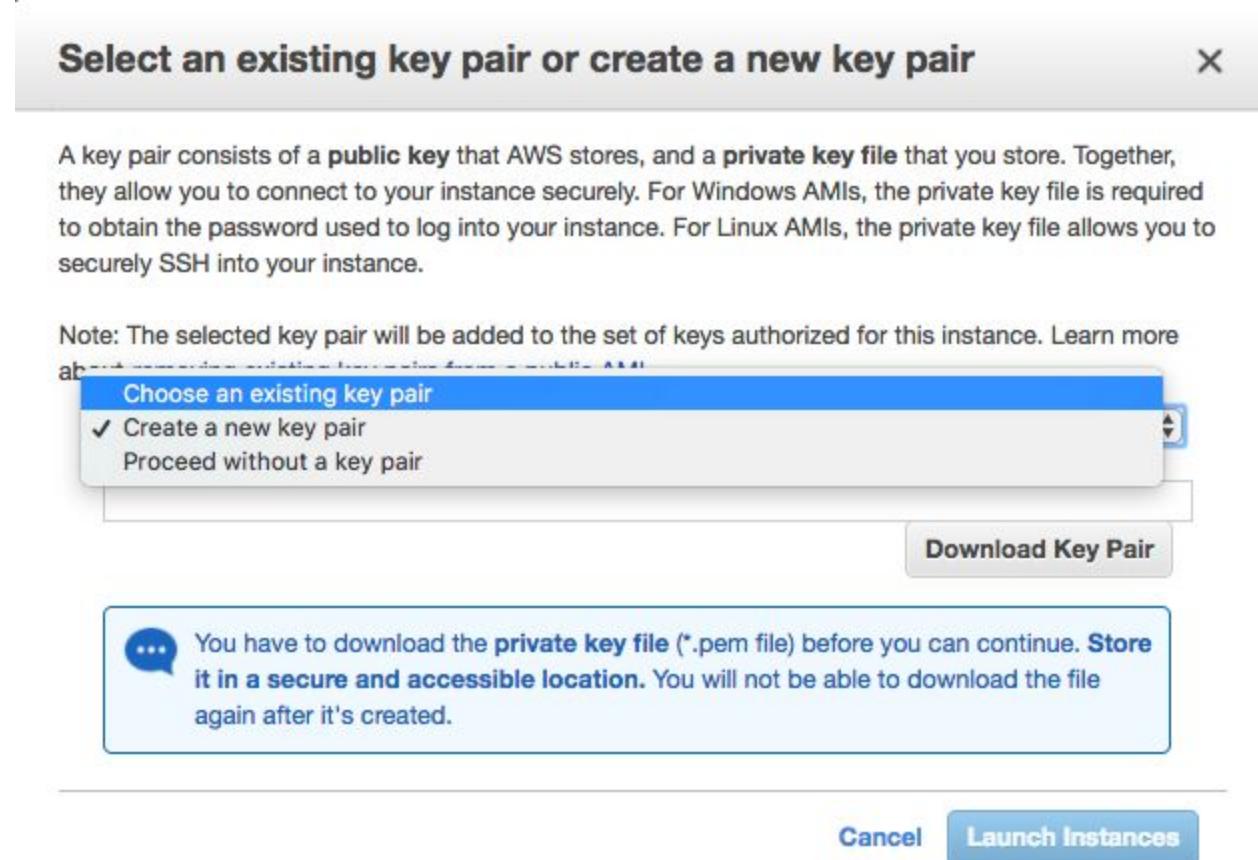
Type	Protocol	Port Range	Source
SSH	TCP	22	Custom 0.0.0.0/0 <input type="button" value="X"/>
All ICMP - IPv4	ICMP	0 - 65535	Anywhere 0.0.0.0/0, ::/0 <input type="button" value="X"/>

**Add Rule**

NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

Click **Review and Launch**, and then finally **Launch** when ready to proceed.

In the **Select an existing key pair or create a new key pair** dialog box, the drop-down menu has three options:



Depending on the Lab, you will choose a different option. The three options are primarily for the following purposes:

1. **Choose an existing key pair:** Works best for Labs that use the PEM/PPK key pairs generated for you by Cloud Academy (under the **YOUR LAB DATA** section of the Lab home page)
2. **Create a new key pair:** AWS will create a key pair for you to download and use
3. **Proceed without a key pair:** Only use this option when you know you will *not* need to SSH into the instance. This option also requires you to acknowledge you won't be able to connect to the instance.

For this Lab, select **Create a new key pair**. Name it something descriptive and memorable, then download it to your local file system. (In a later Lab Step you will use the keys to SSH into the instance.)

A confirmation page will let you know that your instance is launching. Click **View Instances** to close the confirmation page and return to the console.

On the Instances Screen, you can view the status of your instance. It will take a short time for your instance to be launched. When you launch an instance, its initial state defaults to *pending*. After the instance starts, its Instance State changes to *running*.

The screenshot shows the AWS Instances screen. At the top, there are tabs for 'Launch Instance', 'Connect', and 'Actions'. Below the tabs is a search bar and a header row with columns: Name, Status, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS, Public IP, Key Name, Monitoring, and Security Groups. A single instance is listed: 'ca-labs' (Instance ID i-08483704), t2.micro instance type, us-west-2a availability zone, running instance state, Initializing status checks, None alarm status, test key name, disabled monitoring, and launch-wizard-1 security group. Below the header, it says 'Instance: i-08483704 (ca-labs) Private IP: 10.0.0.114'. There are three tabs: 'Description' (selected), 'Status Checks', and 'Monitoring'. The 'Description' tab displays detailed instance information:

Attribute	Value
Instance ID	i-08483704
Instance state	running
Instance type	t2.micro
Private DNS	ip-10-0-0-114.us-west-2.compute.internal
Private IPs	10.0.0.114
Secondary private IPs	
VPC ID	vpc-a144e4c4
Subnet ID	subnet-5931ea2e
Network interfaces	eth0
Source/dest. check	True
EBS-optimized	False
Root device type	ebs
Root device	/dev/xvda
Block devices	/dev/xvda

On the right side, there are sections for Public DNS, Public IP, Elastic IP, Availability zone, Security groups, Scheduled events, AMI ID, Platform, IAM role, Key pair name, Owner, Launch time, Termination protection, Lifecycle, Monitoring, Alarm status, Kernel ID, RAM disk ID, Placement group, Virtualization, Reservation, and AMI launch index.

Once your instance is running, as a quick communications test from a terminal window, enter the following test:

```
$ ping <PublicIPAddress>
```

```
PING 34.214.70.142 (34.214.70.142): 56 data bytes
64 bytes from 34.214.70.142: icmp_seq=0 ttl=235 time=63.077 ms
64 bytes from 34.214.70.142: icmp_seq=1 ttl=235 time=47.070 ms
64 bytes from 34.214.70.142: icmp_seq=2 ttl=235 time=46.933 ms
```

*Hint:* The public IP address is listed on the **Description** tab of your running instance. Use Control-C or Command-C to stop the ping test.

## Connect to RDS and create a database table

Your RDS instance is ready and accessible from any EC2 instance created within the same VPC, so you can connect to the previously created EC2 instance and use the database.

The MySQL client software isn't usually installed in the Linux Amazon AMI, but you can download and install it using the YUM package manager.

Execute the following command: `sudo yum -y install mysql`

You are ready to connect to your RDS instance using the **RDS Endpoint URL**. It's automatically generated during the RDS instance creation and you can find it in the RDS instance details box.

The screenshot shows the AWS RDS Dashboard. On the left, there is a sidebar with various navigation options: Instances (selected), Reserved Purchases, Snapshots, Security Groups, Parameter Groups, Option Groups, Subnet Groups, Events, and Event Subscriptions. The main area displays a table of DB Instances. One row is selected, showing the instance name **rds-lab1**, VPC **vpc-de40f6bb**, Multi-AZ **No**, Class **db.t2.micro**, Status **available**, Maintenance **None**, and Storage Type **General Purpose (SSD)**. A red box highlights the **Endpoint** field, which contains the URL **rds-lab1.cm7rz32vmcn2.us-west-2.rds.amazonaws.com:3306**. Below the table, there are two tabs: **Configuration Details** and **Security and Network**. The **Configuration Details** tab shows the Engine (MySQL 5.6.22), License Model (General Public License), Created Time (March 26, 2015 at 12:55:29 PM UTC+1), DB Name (rds-lab1), Username (cloudacademy), Option Group (default:mysql-5-6 (in-sync)), and Parameter Group (default.mysql5.6 (in-sync)). The **Security and Network** tab shows the Availability Zone (us-west-2b), VPC (vpc-de40f6bb), Subnet Group (cloudacademy (Complete)), Subnets (subnet-62278f15, subnet-5a75ff3f), Security Groups (rds-launch-wizard (sg-366a5553) (active)), Publicly Accessible (No), Port (3306), and Certificate Authority (rds-ca-2015 (Mar 5, 2020)).

In order to complete this lab step, you must connect to your instance, using the RDS Endpoint URL, and create a table named "laboratory" in the database "rdsappdb".

Connect to your RDS instance by using the mysql client and replace `your.endpoint.aws.com` with your real endpoint URL (w/o including the host port): `mysql -h your.endpoint.aws.com -u cloudacademy -p rdsappdb`

Insert the DB Master Password (`myStrongRDSPwd!`) and the MySQL console will be ready to accept SQL queries.

**Note:** remember **NOT** to include the port number of your endpoint URL (e.g. ":3306") or you will not be able to connect to the remote host.

```
[ec2-user@ip-172-31-35-15 ~]$ mysql -h rds-lab1.cm7rz32vmcn2.us-west-2.rds.amazonaws.com -u cloudacademy -p rdsappdb
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 47
Server version: 5.6.22 MySQL Community Server (GPL)

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

mysql> CREATE TABLE laboratory (id INT, name VARCHAR(100));
Query OK, 0 rows affected (0.02 sec)

mysql> DESC laboratory;
+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+
| id    | int(11) | YES  |     | NULL    |       |
| name  | varchar(100)| YES |     | NULL    |       |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> quit;
Bye
[ec2-user@ip-172-31-35-15 ~]$
```

Create a new table in the "rdsappdb" database writing `CREATE TABLE laboratory ( id INT, name VARCHAR(100) );` and then press ENTER.

You can check if the table was successfully created using the SQL command: `DESC laboratory;`

Close your database connection writing the command: `quit;`

## Destroy an RDS instance

You can delete an RDS Instance using the AWS Management Console.

Select the RDS service from the Management Console dashboard:



From the RDS dashboard, click **Instances** from the left menu.

Select `rds-lab` from the RDS Instances list. Click on the **Instance Actions** button, then select **Delete**.

The screenshot shows the AWS RDS Dashboard. On the left, there's a sidebar with options like Instances, Clusters, Reserved Purchases, Snapshots, Security Groups, Parameter Groups, Option Groups, Subnet Groups, Events, Event Subscriptions, and Notifications. The main area shows a table for 'All Instances'. One row is selected for 'rds-lab', which is an MySQL instance in the 'available' status. A context menu is open over this row, with the 'Instance Actions' dropdown expanded. The 'Delete' option is highlighted with a red circle. Other visible options in the menu include 'See Details', 'Create Read Replica', 'Promote Read Replica', 'Take Snapshot', 'Restore to Point in Time', and 'Migrate Latest Snapshot'. Below the table, there's a section for 'Alarms and Recent Events' showing a single event from May 12 at 3:31 PM: 'DB instance created'. At the bottom of the main area, there are tabs for 'Instance Actions', 'Tags', and 'Logs'.

On the Delete DB Instance page, answer **No** to the *Create final Snapshot?* query. Check the acknowledgement checkbox, and click **Delete**.

The screenshot shows a modal dialog titled 'Delete DB Instance'. It asks 'Are you sure you want to Delete the rds-lab DB Instance?'. There are two options: 'Create final Snapshot?' with a dropdown set to 'No' and a help icon, and a checked checkbox 'I acknowledge that upon instance deletion, automated backups, including system snapshots and point-in-time recovery, will no longer be available.' Below this is a warning message in a yellow box: 'We strongly recommend taking a final snapshot before instance deletion since after your instance is deleted, automated backups will no longer be available.' At the bottom right of the dialog are 'Cancel' and 'Delete' buttons, with the 'Delete' button highlighted with a red circle.

Your RDS instance is now in the **deleting** status, which will take a few minutes to complete.