

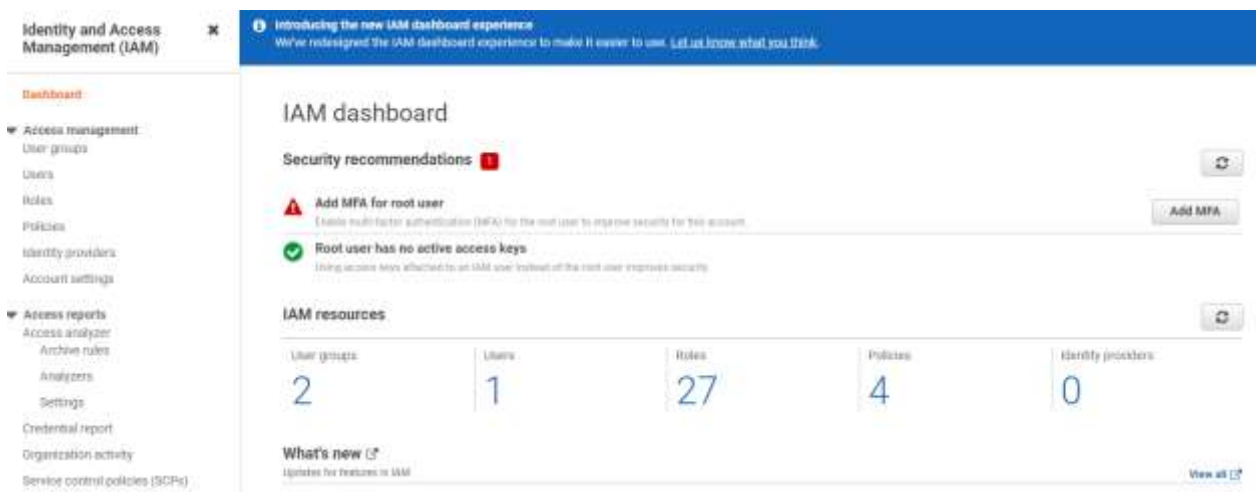
HOE 2 - Setup IAM Role and Deploy Cluster, Query with Query Editor

In this exercise we will deploy a Redshift Cluster after configuring security options and networking. You may want to delete the initial cluster.

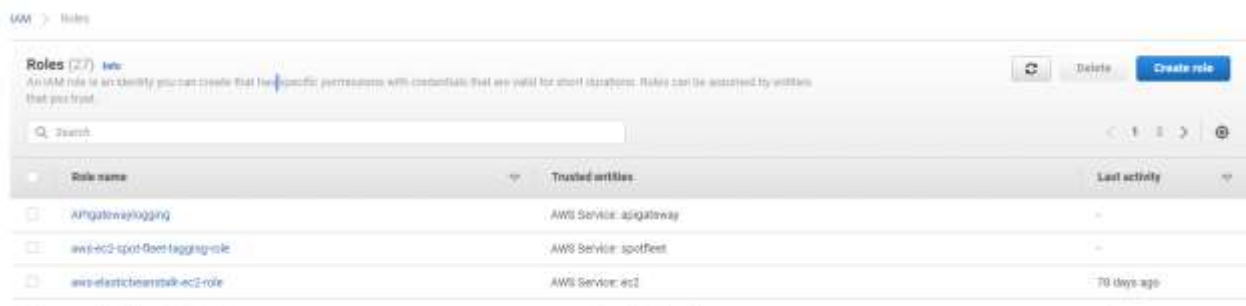
After completing Exercise 1. (if you want avoid additional cloud spend)

Before we can actually do any real work with the cluster we will need to allow access to the Redshift. To do this we would allow access by creating a role for Redshift.

Choose Roles from left panel.



1. Choose Create role from right.



In the AWS Service group, choose Redshift.

Create role

1 2 3 4

Select type of trusted entity

**AWS service**
EC2, Lambda and others

**Another AWS account**
Belonging to you or 3rd party

**Web identity**
Cognito or any OpenID provider

**SAML 2.0 federation**
Your corporate directory

Allows AWS services to perform actions on your behalf. [Learn more](#)

Choose a use case

Common use cases

EC2

Allows EC2 instances to call AWS services on your behalf.

Lambda

Allows Lambda functions to call AWS services on your behalf.

Under Select your use case, choose Redshift - Customizable, then choose Next: Permissions.

Select your use case

Redshift

Allows Redshift clusters to call AWS services on your behalf.

Redshift - Customizable

Allows Redshift clusters to call AWS services on your behalf.

Redshift - Scheduler

Allow Redshift Scheduler to call Redshift on your behalf.

* Required

Cancel

Next: Permissions

On the Attach permissions policies page, choose AmazonS3ReadOnlyAccess. You can leave the default setting for Set permissions boundary. Then choose Next: Tags.

Create role

1 2 3 4

Attach permissions policies

Choose one or more policies to attach to your new role.

Create policy



Filter policies

AmazonS3ReadOnlyAccess

Showing 1 result

Policy name	Used as
<input type="checkbox"/> AmazonS3ReadOnlyAccess	Permissions policy (2)

The Add tags page appears. You can optionally add tags. Choose Next: Review.

Create role

1 2 3 4

Add tags (optional)

IAM tags are key-value pairs you can add to your role. Tags can include user information, such as an email address, or can be descriptive, such as a job title. You can use the tags to organize, track, or control access for this role. [Learn more](#)

Key	Value (optional)	Remove
dw1	ga2	✕
Add new key		

You can add 49 more tags.

For Role name, enter a name for your role. For this tutorial, enter myRedshiftRole.

Create role

1 2 3 4

Review

Provide the required information below and review this role before you create it.

Role name* myredshiftrole

Use alphanumeric and '+*,@,_' characters. Maximum 64 characters.

Role description Allows Redshift clusters to call AWS services on your behalf.

Maximum 1000 characters. Use alphanumeric and '+*,@,_' characters.

Trusted entities AWS service: redshift.amazonaws.com

Policies  AmazonS3ReadOnlyAccess [↗](#)

Permissions boundary Permissions boundary is not set

The new role will receive the following tag

Key	Value
dw1	ga2

* Required

[Cancel](#)

[Previous](#)

[Create role](#)

Create Role.

Create role

1

2

3

4

Review

Provide the required information below and review this role before you create it.

Role name*

myredshiftrole

Use alphanumeric and '+*,@,_' characters. Maximum 64 characters.

Role description


Allows Redshift clusters to call AWS services on your behalf.

Maximum 1000 characters. Use alphanumeric and '+*,@,_' characters.

Trusted entities

AWS service: redshift.amazonaws.com

Policies

 AmazonS3ReadOnlyAccess [?](#)

Permissions boundary

Permissions boundary is not set

The new role will receive the following tag

Key	Value
dw1	ga2

* Required

Cancel

Previous

Create role

Choose the role name of the role that you just created.

IAM > Roles

Roles (Selected 1/20) [info](#)

Refresh

Delete

Create role

myredshiftrole

X

1 match

Role name	Trusted entities	Last activity
myredshiftrole	AWS Service: redshift	




Copy the Role ARN value to your clipboard

This value is the Amazon Resource Name (ARN) for the role that you just created. You use that value when you use the COPY command to load data

arn:aws:iam::900881063065:role/myredshiftrole

[Roles](#) > myredshiftrole

Summary

Role ARN	arn:aws:iam::900881063065:role/myredshiftrole  
Role description	Allows Redshift clusters to call AWS services on your behalf. Edit
Instance Profile ARNs	
Path	/
Creation time	2021-10-17 17:05 EDT
Last activity	Not accessed in the tracking period
Maximum session duration	1 hour Edit

Permissions

Trust relationships

Tags (1)

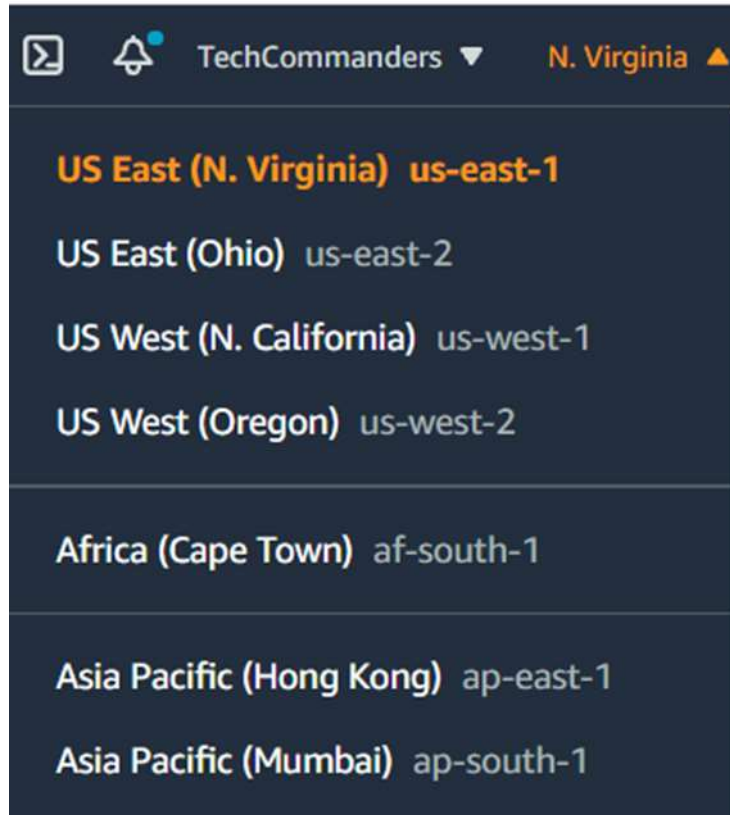
Access Advisor

Revoke sessions

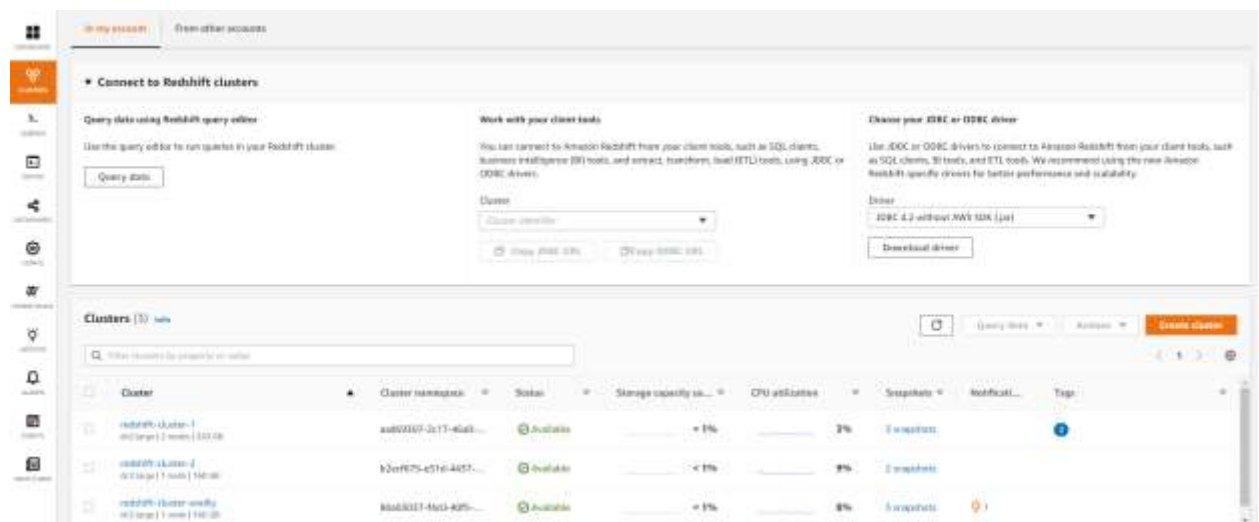
- Permissions policies (1 policy applied)

Create a Cluster

1. Select the region where the cluster is to be created using the Region menu on the top right-side corner of the screen.



On the navigation menu, choose **CLUSTERS**, then choose **Create cluster**. The **Create cluster** page appears.



In the **Cluster configuration** section, specify values for **Cluster identifier**, **Node type**, **Nodes**, and how you plan to use the cluster:

For Cluster identifier, enter mydemocluster for this tutorial.

Then Choose Production and then select a node size of dc2.large

The screenshot shows the Amazon Redshift console configuration page. On the left is a sidebar with icons for QUERIES, EDITOR, DATASHARES, CONFIG, MARKETPLACE, ADVISOR, ALARMS, and EVENTS. The main content area includes the following sections:

- Cluster identifier:** A text box containing "mydemocluster" with a red checkmark to its right. Below it, a note states: "The identifier must be from 1-63 characters. Valid characters are a-z (lowercase only) and - (hyphen)."
- What are you planning to use this cluster for?:** Two radio button options. "Production" is selected (indicated by a blue dot and a red checkmark) and is highlighted with a light blue border. Its description is "Configure for fast and consistent performance at the best price." The "Free trial" option is unselected and has the description "Configure for learning about Amazon Redshift. This configuration is free for a limited time if your organization has never created an Amazon Redshift cluster." ☒ Production
☐ Free trial
- Choose the size of the cluster:** Two buttons: "I'll choose" (selected) and "Help me choose".
- Node type:** A dropdown menu showing "dc2.large" with a red checkmark to its right. An "Info" link is next to the label. Below the dropdown, a note states: "Choose a node type that meets your CPU, RAM, storage capacity, and drive type requirements."
- Number of nodes:** A text box containing "2" with a red checkmark to its right. Below it, a note states: "Enter the number of nodes that you need." and "Range (1-32)".

To use the sample dataset that Amazon Redshift provides, in Sample data, choose Load sample data. Amazon Redshift loads the sample dataset Tickit to the default dev database and public schema.

Choose Load Sample

Configuration summary [Info](#)

dc2.large | 2 nodes

\$360.00/month

Estimated on-demand compute price

Save more than 60% of your costs by purchasing reserved nodes.

[Learn more](#) [↗](#)

320 GB

Total compressed storage

The total storage capacity for the cluster if you deploy the number of nodes that you chose.

Sample data [Info](#)

☒ Load sample data

Load sample data to your Redshift cluster to start using the query editor to query data.

Tickit (28 MB)

Tickit is the sample data set that uses a sample database called TICKIT. Tickit contains individual sample data files: two fact tables and five dimensions.

In the Database configuration section, specify values for Database name (optional), Database port , Admin user name, and Admin user password. Or choose Generate password to use a password generated by Amazon Redshift.

In this tutorial, use these values:

- Database name (optional): Enter dev.
- Database port (optional): Enter 5439.
- Admin user name: Enter awsuser.

Database configurations

Admin user name

Enter a login ID for the admin user of your DB instance.

The name must be 1-128 alphanumeric characters, and it can't be a [reserved word](#).

☐ Auto generate password

Amazon Redshift can generate a password for you, or you can specify your own password.

Admin user password

☐ Show password

Must be 8-64 characters long. Must contain at least one uppercase letter, one lowercase letter and one number. Can be any printable ASCII character except "/", "", or "@".

Admin user password: Enter a value for the password.

In the Cluster permissions section, for Available IAM roles choose the IAM role that you previously created, myRedshiftRole. Then choose Associate IAM role.

▼ Cluster permissions

Your cluster needs permissions to access other AWS services on your behalf. For the required permissions, add IAM roles with the principal "redshift.amazonaws.com". You can associate up to 30 IAM roles with this cluster. [Learn more](#)

Available IAM roles [Info](#)

Choose an IAM role ▲

Q |

Enter ARN

Choose an existing IAM role

AWSServiceRoleForRedshift
arn:aws:iam::900881063065:role/aws-service-role/redshift.amazonaws.com/AWSServiceRoleForRedshift

myredshiftrole ✓
arn:aws:iam::900881063065:role/myredshiftrole


redshifts3access
arn:aws:iam::900881063065:role/redshifts3access

Associate IAM role

Ad
these configurations are optional, and default settings have been defined to help you get started with your cluster. Turn off "Use defaults" to


Associate an IAM role to the cluster.


▼ Cluster permissions



 Your cluster needs permissions to access other AWS services on your behalf. For the required permissions, add IAM roles with the principal "redshift.amazonaws.com". You can associate up to 30 IAM roles with this cluster. [Learn more](#)

Available IAM roles [Info](#)

Choose an IAM role ▼



Associate IAM role 

Associated IAM roles	Status	
myredshiftrole  arn:aws:iam::900881063065:role/myredshiftrole 	Not applied	<div>Remove</div>

Choose Create cluster.

Additional configurations ☒ Use defaults

These configurations are optional, and default settings have been defined to help you get started with your cluster. Turn off "Use defaults" to modify these settings now.

Network Using default VPC (vpc-0762c27a) and default subnet.	Security Using default (sg-c1bd34ca) cluster security group.
Backup Automated snapshots are created about every eight hours or following every 5 GB per node of data changes, whichever comes first.	Configuration Using default.redshift-1.0 parameter group with no database encryption.
Maintenance Using current maintenance track.	

Cancel

Create cluster

Cluster will take about 5 -10 minutes to complete.

Clusters (1/4) Info			
<input type="text"/> <i>Filter clusters by property or value</i>			
<input checked="" type="checkbox"/>	Cluster	Cluster namespace	Status
<input checked="" type="checkbox"/>	mydemocluster dc2.large 2 nodes 320 GB	4ae74915-f5ce-4662-...	Modifying Creating
<input type="checkbox"/>	redshift-cluster-1 dc2.large 2 nodes 320 GB	aad69307-2c17-46a0-...	Available
<input type="checkbox"/>	redshift-cluster-2 dc2.large 1 node 160 GB	b2ecf675-e51d-4437-...	Available
<input type="checkbox"/>	redshift-cluster-oreilly dc2.large 1 node 160 GB	90a03037-f4c0-40f5-...	Available

After the cluster shows “Available” we would now want to connect to the cluster with Query Editor

Connect to Cluster from Query Editor

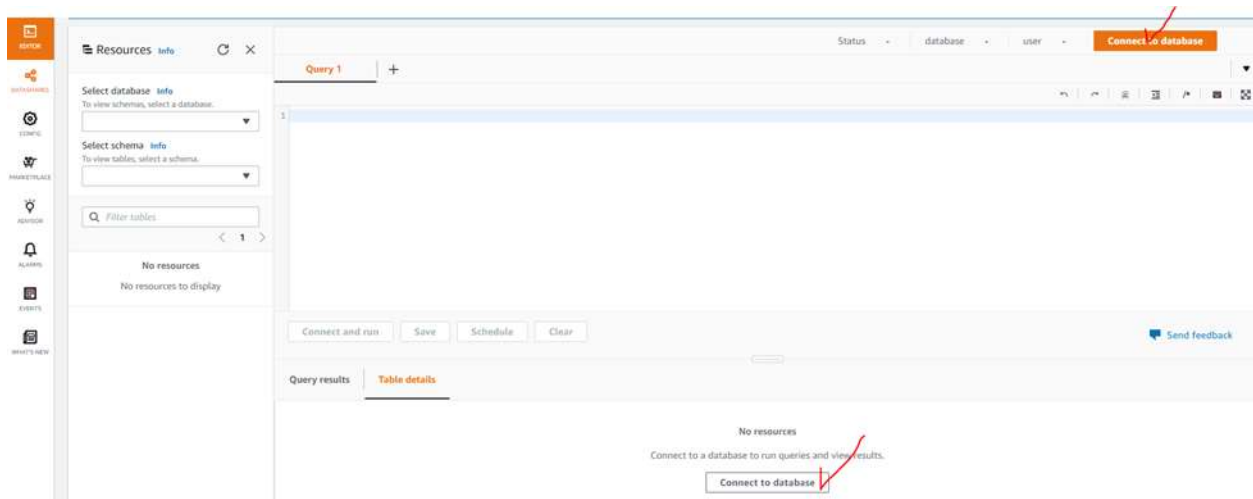
(Note we will config firewall access for access from the internet shortly)

Select the Editor Icon on the left panel.



In this scenario you can use either version of the Query Editor. V1 or V2. For the snaps below it is in V2.
Select the cluster “mydemocluster”

Select “Connect to Database”



Connect to database

✕

Connection
Select a recent database connection or create a new database connection.

☐ Use a recent connection

☒ Create a new connection ✓

Authentication

☒ Temporary credentials ✓
Use the GetClusterCredentials IAM permission and your database user to generate temporary access credentials. [Learn more](#)

☐ AWS Secrets Manager
Use a stored secret to authenticate access. [Learn more](#)

Cluster

mydemocluster (Available) ✓

Database name

dev ✓

Database user

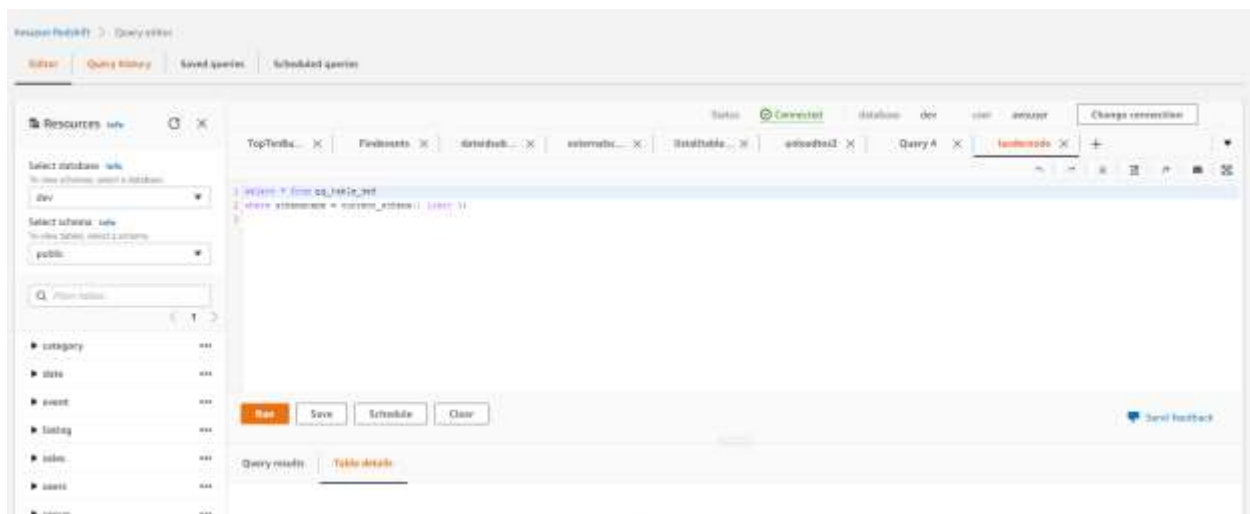
User name authorized to access your database.

awsuser ✓

Cancel **Connect** ✓

If you receive a SQL error then you likely enter the access information incorrectly. Check again

You should be connected to the database by seeing the following panels. (You wont have any queries yet but will have



Schema validation

▼ category	...
catid	
catgroup	
catname	
catdesc	
▶ date	...
▶ event	...
▶ listing	...
▶ sales	...
▶ users	...
▶ venue	...

Now lets Query the Sample Data

Copy the following query and paste into query editor.

```
-- Get definition for the sales table.  
  
SELECT *  
  
FROM pg_table_def  
  
WHERE tablename = 'sales';
```

```

1 SELECT *
2 FROM pg_table_def
3 WHERE tablename = 'sales';

```

Run Save Schedule Clear

Send Feedback

Query results Table details

Query

Completed, started on October 17, 2021 at 17:45:23
ELAPSED TIME: 00 m 00 s

Execution Data Visualize

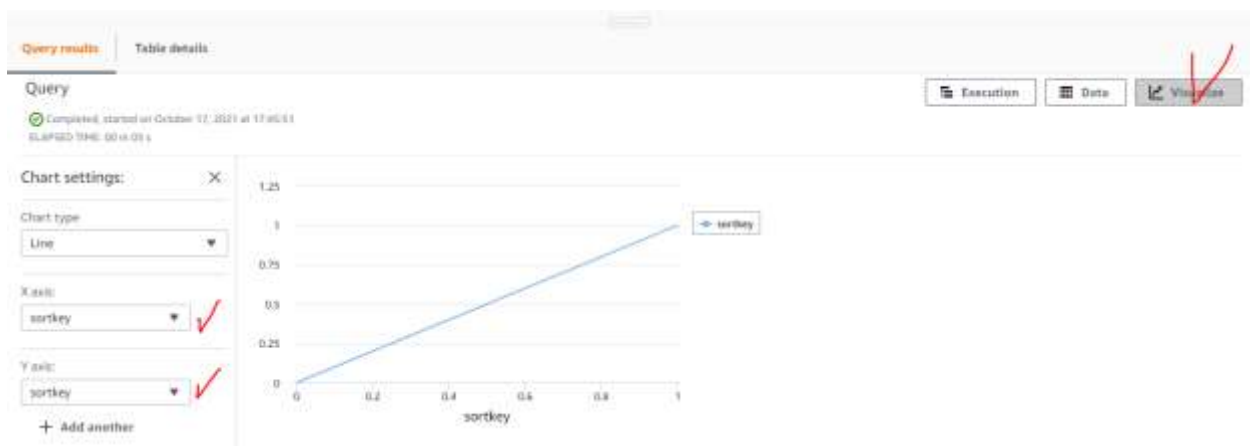
Rows returned (10)

Export

Search rows

schemaname	tablename	column	type	encoding	ispk	sortkey	notnull
public	sales	salesid	integer	utf8	false	0	true
public	sales	istid	integer	utf8	true	0	true

Notice below it also gives the functionality to visualize data.



We are done with this Hands on Exercise. Do not delete since we will be using this cluster for the next few exercises.

