

Setup Guide [For Q3]

Getting Started

1. Create an AWS Academy account

You will receive an email from <u>notifications@instructure.com</u> inviting you to participate in the **AWS Academy Learner Lab – Associate Services** course. Your AWS Academy allows you to access EC2, Elastic MapReduce and S3 storage. Click on the button to **Join AWS Academy** in the email to proceed.

Cour	rse Invitation
(i)	Some content in this message has been blocked because the sender isn't in your Safe senders list. I trust content from notifications@instructure.com. Show blocked content
AA	AWS Academy <notifications@instructure.com>Image: Image: Image:</notifications@instructure.com>
	You've been invited to participate in a class at <mark>AWS</mark> Academy . The class is called AWS Academy Learner Lab - Associate Services [7621]. Course role: Student
	Name: rbakhtiani3@gatech.edu Email: rbakhtiani3@gatech.edu Username: none
	You'll need to register with Canvas before you can participate in the class.
	Get Started
	Reply Forward

You will be taken to the Canvas page. When it appears, click on the "Create My Account" button.



Now, fill in the requested information (e.g. e-mail address, password, etc.). Once submitting, you'll be able to log in to your account at the following URL: <u>https://awsacademy.instructure.com/login/canvas</u>

When you arrive at the login URL you will see a screen like this:

a	WS academy
Em	all aslirhävi3@gatech.edu
Pas	sword
s Son	itay signed in Lag In Lag In
He He	de Privaryauley Acceptate Use Folcy Facebook Teitter

Please enter your e-mail address and password used when setting up the AWS Canvas account (not the Canvas account for the CSE 6242 course). Click the "Log In" button. You will then see the AWS Canvas home screen. Click on the "Dashboard" tab on the far left. You should see a screen like this one (although the number of courses on your screen will differ):

aws	Notifications. Tell us how and a Notification Preferences	when you would like to be notified of even	ts in Canvas.		Co	ming Up	View Calendar week
Account	Dashboard			:	Re No	cent Feedback	(
					1	/iew Grades	
Courses	:	:	1				
Calendar							
E Inbox	AWS Academy Learner Lab - Asso ALLAv1-7621	AWS Academy Cloud Foundations ACFv2EN-Educator-3781	AWS Academy Introduction to Clo AICv1Sem1EN-4354-Educator				
History	ą	4) (A) (A)	- - 				
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Click on the "AWS Academy Learner Lab" course button. You should see the following screen (the course homepage).

	Home		ារី View Course Stream
Account	Modules		View Course Calendar
ریک Dashboard	Discussions		□ View Course Notifications
Courses			To Do
			Nothing for now
Calendar			Recent Feedback
a E			Nothing for now
		AWS Academy Learner Lab - Associate Services provides a long-running sandbox environment for ad-hoc exploration of AWS services. Access to the AWS resources set up in this environment is retained for the duration	
History		of this course. Your budget (\$100) is limited so you should exercise caution to prevent charges that will deplete	
(?) Help		your budget too quickly. If you exceed your budget, you will lose access to your environment and lose all of your work.	
		Each session lasts for 4 hours by default, although you can extend a session to run longer by pressing the start	
		button to reset your session timer. At the end of each session, any resources you created in the account will be preserved. Some AWS resources, such as EC2 instances, may be automatically shut down, while other resources.	
		such as RDS instances will be left running. Keep in mind that some AWS features cannot be stopped and can still	
		incur charges. For example, an Elastic Load Balancer or a NAT. You may wish to delete those types of resources and recreate them as needed to test your work during a session. You will have access to this environment for the	
		duration of the class you are enrolled in. When the class ends, your access to the learner lab will also end.	
I←		Get Started	

Click on the "Modules" link on the near-left menu. A list of course modules will appear:

aws acaterna	Home	· Course trendome and other view	
<u> </u>	Modules	X Pre-Course Survey	
Account	Discussions	ϕ° AWS Academy Learner Lab Student Guide	
යි. Dashboard			
2		AWS Academy Learner Lab Compliance and Security	Complete All Items
Courses		ϕ^{\diamond} $\ $ Learn how to effectively use the Academy Learner Lab	
Calendar		Be Module Knowledge Check 100 pts Some at least 70.0	0
History		AWS Academy Learner Lab	
Help			
		AWS Academy Learner Lab Resources	
		ϕ^{0} $\ \ $ Demo - How to Access Learner Lab	
		ϕ^2 Demo - General Troubleshooting Tips	

Click on the "Launch AWS Academy Learning Lab". You'll see a screen like the following screen:



Next, click on the "Start Lab" button on the top right. You'll see an agreement from Vocareum. Scroll to the bottom of the agreement and click "I agree." Next, click "Start Lab" at the top. It will take a few minutes for the account to be set up. Once the red circle next to AWS turns green in top left, click the Green button and a new window will open. Do take time to

AWS 🔵	Used \$0 of \$100	03:15	Start Lab	End Lab	i AWS Details	i Readme	් Reset	x

You are now in the AWS management console! It will look something like this [right top corner].

Federated Login:	
vocstartsoft/user625	
Account:	
4000	
My Account	
My Organization	
My Service Quotas	
My Billing Dashboard	
Orders and Invoices	
Switch Role	

If you have any problems with this process, please let the course staff know on EdStem via the dedicated AWS Setup thread.

2. Create storage buckets on S3

We need S3 for storing the final results of the assignment which will be submitted to the autograder.

Data (or objects) in S3 are stored in what we call "**buckets**". You can think of buckets as folders. All S3 buckets need to have unique names.

1. In the AWS Management Console click on S3 under All services \rightarrow Storage.

In the S3 console, click on Create Bucket.

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2. Create a bucket: Enter the following details (bucket name and region) then click **Create Bucket** at the bottom of the screen. **Keep all other settings the same.**

Bucket Name Format: cse6242-<GT username>

Example: cse6242-gburdell3

Region: US East (N. Virginia)

VERY IMPORTANT: Please select **"US East (N. Virginia)**" only. If you have buckets in other regions, data transfer charges would apply.

Create bucket uckets are containers for data stored in S3. Learn more General configuration Bucket name cse6242-gburdell3	e letters. See rules for bucket naming [2]	nazon S3 > Create bucket	
uckets are containers for data stored in S3. Learn more General configuration Bucket name cse6242-gburdell3	e letters. See rules for bucket naming	reate bucket	
General configuration Bucket name cse6242-gburdell3	e letters. See rules for bucket naming 🔀	ckets are containers for data stored in S3. Learn more 🗹	
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cse6242-gburdell3	e letters. See rules for bucket naming	Bucket name	
	e letters. See rules for bucket naming 🔀	cse6242-gburdell3	
Bucket name must be unique and must not contain spaces or uppercase letters. See rules for bucket naming 🔀		Bucket name must be unique and must not contain spaces or uppercase b	letters. See rules for bucket naming 🔀
AWS Region		AWS Region	
US East (N. Virginia) us-east-1	▼	US East (N. Virginia) us-east-1	•
Convisettings from existing bucket - ontional		Only the bucket settings in the following configuration are copied.	
Copy settings from existing bucket - optional Only the bucket settings in the following configuration are copied.		Choose bucket	
Copy settings from existing bucket - optional Only the bucket settings in the following configuration are copied. Choose bucket			

3. A new bucket will appear in the S3 console. Clicking on it will show you that it is empty.

We are done with creating S3 buckets at this point.

3. Create an Athena Workgroup

This section will cover creating a Workgroup in Amazon Athena. For further information about workgroups in Athena, click <u>here</u>.

1. Go to Amazon Athena. Select Workgroups on the left menu. Click "Create workgroup".

Amazon Athena $\qquad imes$	Amazon Athena 📏 Workgroups
Query editor Notebook editor <u>New</u>	Workgroups (1) Info Use workgroups to separate users, teams, applications, workloads, and to set limits on amo the entire workgroup process. You can also view query-related metrics in AWS CloudWatch.
■ Jobs	Actions Create workgroup
Workflows Powered by Step Functions	Q Filter workgroups
 Administration Workgroups 	O primary - Athena engine ver Pendi
Capacity reservations New Data sources	

- 2. Make sure the region specified in the top-right corner of the page is **N. Virginia.** Otherwise click on it and from the drop-down choose N. Virginia.
- We will now fill out the various configuration fields to create a new Workgroup:
 a. Give your workgroup a <u>name</u>. It can be anything you want.

Workgrou Enter a unique	p details name for your workgroup. To change the workgroup name, delete the workgroup and recreate it with a new name.
Workgroup n	ame
hw3-q3	
Workgroup nan _(underscore), .	ne must be from 1-128 characters and must be unique per region of your account. Valid characters are a-z, A-Z, 0-9, (period) and -(hyphen). This value cannot be changed after creation.
Description -	optional

b. Select "Apache Spark" as the Analytics Engine.

ose the type of engine	
Athena SQL Athena SQL engine for interactive queries.	• Apache Spark Highly-scalable serverless Spark engine.
SQL	Spark
jine version	

c. Under Additional Configurations, choose "LabRole" as the existing IAM service role. Version 0

Additional configurations O Use defaults

Turn on "Use Defaults" to have Athena create a new IAM role and calculation result location in 53 to help you get started with the workg locations that you will use in your Spark applications. Turn off "Use defaults" if you wish to provide your own role or calculation result lo

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•	IAM role configuration
Not	rebooks require permissions to call other AWS services on your behalf.
Ser	vice role to authorise Athena
0	Create and use a new service role
0	Use an existing service role
Ser	vice role
L	abRole
Viev	w this Service role in IAM console 🖸
Not	tebook and calculation code encryption key management
Not	tebook and calculation code encryption key management Info Use AWS owned key
Not	tebook and calculation code encryption key management Info Use AWS owned key A key that AWS owns and manages for you.
Not O	tebook and calculation code encryption key management Info Use AWS owned key A key that AWS owns and manages for you. Choose a different AWS KMS key (advanced)

- d. Select "Create workgroup" to finish.
- 4. Import the hw3-q3 skeleton notebook.

4. Get started with the skeleton

In this section we will import the skeleton file to the workgroup and run our first cell.

1. Select your newly created workgroup from the list and then click "Import file". Import the q3.ipynb file provided in the skeleton.

rant access to the workgroup, create an	AM policy 🔀 and attach it to a user, group, or role. Learn more 🗹	
Overview details		
Vorkgroup name Iw 3-q3	Description -	Content encryption AWS owned
nalytics engine ySpark engine version 3 Override client side settings	Calculation results location s3://202667119616-us-east-1-athena-results- bucket-o0pel94bbj 🖸	Result encryption - Publish metrics to AWS CloudWatch
I/A Vorkgroup status	Role ARN arn:aws:iam::202667119616:role/LabRole 🖸	Turned on Created on
urned on	Workgroup ARN	2023-06-28T20:58:34.968-04:00
Intehooks Sessions Tags		
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Q. Search notebooks	G Act	

- 2. Run the first code cell which will import PySpark, followed by a cell which should contain **sc** to start the Spark Application so you can start programming the assignment.
- 3. Once you have finished coding, you can export the notebook from "Notebook Explorer" by selecting your notebook and clicking "Export File" from the Actions dropdown.

Amazon Athena 📏 Notebook explorer					
Notebook explorer		Workgroup	hw3-q3	•	
Notebooks (1) Info	C	Actions 🔺	Import file	Create noteboo	k
Q Search notebooks		Rename		< 1	>
Name	✓ Last edited	Delete			~
0 03	2023-06-28	Export file			
ч	2025-00-20	Session history			

Troubleshooting

1. If you get an error saying your credentials are invalid, when logging in

ß	aws				
	Amazon Web Services Sign In				
	The credentials in your login link were invalid. Please contact your administrator.				
	To logout, click here				
	Terms of Use Privacy Policy © 1996-2022, Amazon Web Services, Inc. or its affiliates.				
	An amazon.com company				
	The credentials in your login link were invalid. Please contact your administrator. To logout, click here Terms of Use Privacy Policy © 1996-2022, Amazon Web Services, Inc. or its affiliates. An amazoncom company				

Click the logout link and then try again. If that still does not work, try clearing your cache and cookies in your browser. You can also use Incognito mode in your browser or a completely different browser if none of those options work.

2. Take time to read the Learner Lab documentation on the Lab Screen! It is full of helpful information.

