AWS Academy Learner Lab

Service Information

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Purpose

The restrictions described in this document apply for your use of the AWS Academy Learner Lab.

Region restrictions

All service access is limited to the us-east-1 and us-west-2 Regions unless mentioned otherwise in the service details below. If you load a service console page in another AWS Region you will see access error messages.

Service usage and other restrictions

The following services are available in Learner Labs. Specific limitations apply as documented, and AWS services and service restrictions are subject to change.

Amazon API Gateway

- This service can assume the LabRole IAM role.

AWS App Mesh

AWS Application Auto Scaling

- This service can assume the LabRole IAM role.

AWS AppSync

Amazon Athena

- This service can assume the LabRole IAM role.

Amazon Aurora

AWS Backup

AWS Batch

- This service can assume the LabRole IAM role.

AWS Certificate Manager (ACM)

AWS Cloud9

- This service can assume the LabRole IAM role.
- Supported instance types: nano, micro, small, medium, large, and c4.xlarge.
- **Tip**: When creating a new Cloud9 instance with the *New EC2 instance* environment type, in *Network settings* choose **Secure Shell (SSH)**

AWS CloudFormation

- This service can assume the LabRole IAM role.

Amazon CloudFront

- This service can assume the LabRole IAM role.

Amazon CloudSearch

AWS CloudShell

AWS CloudTrail

- This service can assume the LabRole IAM role.
- You can create a CloudTrail, but you cannot enable CloudWatch logging for the trail.

Amazon CloudWatch

AWS CodeCommit

- This service can assume the LabRole IAM role.

AWS CodeDeploy

- This service can assume the LabRole IAM role.

AWS Config

AWS Cost and Usage Reports

AWS Cost Explorer

AWS Data Pipeline

- This service can assume the LabRole IAM role.
- Tip: If you see a warning that data pipeline:GetAccountLimits cannot be performed, you can ignore it. Also, when creating a pipeline, choose LabRole as the pipeline role and if applicable, choose LabInstanceProfile as the EC2 instance role.

AWS DeepComposer

AWS DeepLens

AWS DeepRacer

- This service can assume the LabRole IAM role.

AWS Directory Service

Amazon DynamoDB

- This service can assume the LabRole IAM role.

Amazon EC2 Auto Scaling

- This service can assume the LabRole IAM role.
- Supported instance types: nano, micro, small, medium, and large.
- Read the *Concurrently running instances limits* details documented in the EC2 service details below to be aware of further restrictions.
- Recommendation: size to your actual need to avoid using up your lab budget.

AWS Elastic Beanstalk

- This service can assume the LabRole IAM role.
- To create an application: choose **Create Application**, give it an application name, choose a platform, then choose **Configure more options**. Scroll down to the Security panel and choose **Edit**. For Service role, choose **LabRole**. If the environment is in the us-east-1 AWS Region, for EC2 key pair, choose **vockey** and for IAM *instance profile*, choose **LabInstanceProfile**. Choose **Save**, then choose **Create app**.
- Supported instance types: nano, micro, small, medium, and large. If you attempt to launch a larger instance type, it will be terminated.

Amazon Elastic Block Store (Amazon EBS)

- Maximum volume size is 100 GB.
- PIOPs not supported.

Amazon Elastic Compute Cloud (Amazon EC2)

- This service can assume the LabRole IAM role.
- Supported AMIs:
  - AMIs available in us-east-1 or us-west-2. For example, Quickstart AMIs, My AMIs, and Community AMIs.
  - AWS Marketplace AMIs are not supported.
  - AMIs such as MacOS that must launch as a dedicated instance or on a dedicated host are also not supported.
  - Recommendation**:** To launch an instance with a guest OS of ***Microsoft Windows***, ***Amazon Linux***, or one of many other popular Linux distribution, choose "**Launch instances"**, then choose from the ones available in the "Quick Start" tab.
- Supported instance types: nano, micro, small, medium, and large.
- Only On-Demand Instances are supported.
- *Concurrently running instances limits* per supported region:
  - Maximum of 9 concurrently running EC2 instances, regardless of instance size. If you attempt to launch more, the excess instances will be terminated (and nine will be left running).
  - Note**:** Services such as Amazon EMR, AWS Cloud9, and Elastic Beanstalk can launch EC2 instances. The 9 concurrent running EC2 instances limit applies across all services that create instances visible in the EC2 console.
  - Maximum of 32 vCPUs used by concurrently running instances, regardless of instance size or instance count. For example, t2.micro instances use 1 vCPU each, so you could run up to 32 of them in us-west-2 (but still only 9 of them in us-east-1 because of the other limitation listed above).

  - Note**:** The maximum 32 vCPUs limit also applies across all services that create instances visible in the Amazon EC2 console.
  - **Caution:** Any attempt to have 20 or more concurrently running instances (regardless of size) will result in *immediate* deactivation of the AWS account and all resources in the account will be immediately deleted.
  - *Recommendation***:** size to your actual need to avoid using up your cost budget.
- EBS volumes - sizes up to 100 GB and type must be General Purpose SSD (`gp2`, `gp3`) cold HDD (`sc1`), or standard.
- Key pairs - If you are creating an EC2 instance in any AWS Region other than us-east-1, the vockey key pair will not be available. In such cases, you should create a new key pair and download it when creating the EC2 instance. Then use the new key pair to connect to that instance.
- A role named **LabRole** and an instance profile named **LabInstanceProfile** have been pre-created for you. You can attach the role (via the instance profile) to an EC2 instance when you want to access an EC2 instance (terminal in the browser) using AWS Systems Manager Session Manager. The role also grants permissions to any applications running on the instance to access many other AWS services from the instance.
- **Tips:**
  - When your session ends, the lab environment may place any running instances into a 'stopped' state.
  - When you start a new session, the lab environment will start all instances that were previously stopped by you or stopped by the lab environment when the lab session ended.
  - Instances that have been stopped and started again will be assigned a new IPv4 public IP address unless you have an elastic IP address associated with the instance.
- **Recommendations:**
  - To preserve your lab budget, stop any running EC2 instances before you are done using the account for the day (and terminate them if not longer needed).
  - Be aware of all instances you keep in the account between sessions because they will run (and cut into your budget) when you start the lab again unless you remember to turn stop them manually after starting the lab.

Amazon Elastic Container Registry (Amazon ECR)

- The LabRole IAM role has read-only access to this service and as a console user you have write access to this service.

Amazon Elastic Container Service (Amazon ECS)

- Supported instance types: nano, micro, small, medium, and large.
- To avoid permissions errors, be sure to set *LabRole* as the role to use wherever you are prompted to specify a role. For example, as the task role and task execution role when creating a task definition.
- Tip: If you see a message when creating a cluster that the ECS service linked role could not be assumed, choose the back button and then try again. This sometimes happens if the service linked role does not yet exist in your account.

Amazon Elastic File System (Amazon EFS)

- This service can assume the LabRole IAM role.

Amazon Elastic Inference

Amazon Elastic Kubernetes Service (Amazon EKS)

- This service can assume the LabRole IAM role.
- Supported instance types: nano, micro, small, medium, and large.

Elastic Load Balancing (ELB)

- This service can assume the LabRole IAM role.

Amazon EMR

- This service can assume the LabRole IAM role.
- Supported instance types: nano, micro, small, medium, and large. If you attempt to launch a larger instance type, it will be terminated.
- Tip: If you have any trouble successfully launching a cluster, try using the m4.large instance type.
- Maximum of 32 vCPUs used by concurrently running EC2 instances in an AWS Region. Note that you cannot launch more than 9 instances (of any size) in a Region at once.
- **Note**: An EMR cluster will not continue to work if your session ends and then you start a new lab session. In Learner Labs, session end causes the EC2 instances that the EMR cluster uses to be stopped, and stopping an EMR cluster is not supported (by AWS). *Recommendation*: write EMR job results to S3 if you need to preserve your results, before you end your current Learner Labs session, then read the results back into a new EMR cluster as needed when you start your next Learner Labs session.

Amazon ElastiCache

Amazon EventBridge

AWS Fargate

- This service can assume the LabRole IAM role.

Amazon Forecast

- This service can assume the LabRole IAM role.

AWS Glue

- This service can assume the LabRole IAM role.

AWS Glue DataBrew

- This service can assume the LabRole IAM role.

Amazon GuardDuty

AWS Health

AWS Identity and Access Management (IAM)

- Extremely limited access. You cannot create users or groups. You cannot create roles, except service-linked roles.
- Service role creation is generally permitted. If the service needs to create a role for you, you might need to retry role creation if it fails the first time.
- A role named ***LabRole*** has been pre-created for you. This role is designed to be used when you want to attach a role to a resource in an AWS service. The role grants many AWS services access to other AWS services and has permissions similar to the permissions that you have as a user in the console.
    - Example use: Attach the *LabRole* through the instance profile named *LabInstanceProfile* to an EC2 instance for terminal in the browser access to an EC2 instance guest OS by using AWS Systems Manager Session Manager.
    - Another example: Attach the *LabRole* to a Lambda function so that the Lambda function can access Amazon S3, CloudWatch, Amazon RDS, or another service.
    - Another example: Attach the *LabRole* to a SageMaker notebook instance so that the instance can access files in an S3 bucket.

AWS IAM Access Analyzer

Amazon Inspector

AWS IoT 1-Click

AWS IoT Analytics

- This service can assume the LabRole IAM role.

AWS IoT Core

- This service can assume the LabRole IAM role.

AWS IoT Greengrass

Amazon Kendra

- This service can assume the LabRole IAM role.

AWS Key Management Service (AWS KMS)

- This service can assume the LabRole IAM role.

Amazon Kinesis

- If you create an Amazon Kinesis Data Analytics Studio notebook, choose "*Create with custom settings*". Then, choose **LabRole** in the IAM settings area.
- If you create an Amazon Kinesis Delivery Stream, choose *"Advance settings"*. Then, choose to use **LabRole**.

Amazon Kinesis Video Streams

AWS Lambda

- **Tip:** Attach the existing *LabRole* to any function that you create, if that function will need permissions to interact with other AWS services.

Amazon Lex

- This service can assume the LabRole IAM role.

Amazon Machine Learning (Amazon ML)

AWS Marketplace Subscriptions

- Extremely limited read-only access.

AWS Mobile Hub

Amazon Neptune

- Supported instance types: nano, micro, small, and medium (Tip: choose *Burstable classes* to find these).
- Supported storage types: EBS volumes - size up to 100 GB and type General Purpose SSD (gp2). PIOPS storage types are not supported.
- On-Demand DB instance class types only.
- ***Enhanced monitoring is not supported*** (you must *uncheck* this default setting in the *Additional configuration / Monitoring* panel).
- **Tip**: to preserve your lab budget, stop any running Neptune instances before you are done using the account for the day (or terminate them if not longer needed).

AWS OpsWorks

Amazon Personalize

- This service can assume the LabRole IAM role.

Amazon QuickSight

- This service can assume the LabRole IAM role.
- **Tip:** When creating the account, choose *Enterprise*. Ignore the warning "This IAM user or role may not have all the correct permissions...". For authentication method, choose *"Use IAM federated identities & QuickSight-managed users"*. For IAM role, choose the existing role named **LabRole**.

Amazon Redshift

- This service can assume the LabRole IAM role.
- Supported instance type: dc2.large
- Supported cluster size: maximum two instances

Amazon Rekognition

- This service can assume the LabRole IAM role.

Amazon Relational Database Service (Amazon RDS)

- This service can assume the LabRole IAM role.
- Supported database engines: Amazon Aurora, Oracle, Microsoft SQL, MySQL, PostgreSQL, and MariaDB. Note: if you are creating an RDS instance using a CloudFormation template, be sure to specify the engine type using lower-case letters.
- Supported instance types: nano, micro, small, and medium. (**Tip:** choose *Burstable* classes to find these).
- Supported storage types: EBS volumes, size up to 100 GB and type General Purpose SSD (gp2). PIOPS storage types are not supported.
- Only On-Demand DB instance class types are supported.
- Enhanced monitoring is not supported (you must uncheck this default setting in the Additional configuration / Monitoring panel).
- **Tip:** To preserve your lab budget, stop any running RDS instances before you finish using the account for the day (or terminate them if no longer needed).
- **Caution**: When a lab session ends, the lab environment may not stop an RDS instance or cluster that you leave running. Also, even if you do stop an RDS instance, if you leave it stopped for seven days, AWS will start it again automatically, which will increase the cost impact.

AWS Resource Groups & Tag Editor

- This service can assume the LabRole IAM role.

AWS RoboMaker

- This service can assume the LabRole IAM role.
- Supported instance types for development environments: nano, micro, small, medium, large, and c4.xlarge.

Amazon Route 53

- You cannot register a domain.

Amazon SageMaker

- This service can assume the LabRole IAM role.
- You can create SageMaker Notebook instances.
    - Supported instance types: medium, large, and xlarge.
    - GPU instance types are not supported.
- Only some of the features within SageMaker Studio are supported.
    - **Note**: To launch SageMaker Studio, choose *Launch SageMaker Studio*. Accept the default user profile, and specify LabRole as the execution role, then choose *Submit*. You will receive two not authorized messages because we cannot give you iam:CreateRole access in Learner Labs. However, the SageMaker Domain will still be created and you can still access

SageMaker Studio after a few minutes if you navigate to the SageMaker *Control panel*, and from the Launch app menu next to the user you created, choose *Studio*. This will open SageMaker Studio. From this screen, you can open resources such as a Python 3 Notebook, Python 3 Console, or Image terminal.

  - Supported instance types: medium, large, and xlarge only.
  - Some SageMaker JumpStart projects require more access permissions than we can grant in Learner Labs.
- There is limited support for **SageMaker Canvas** features.
  - In the Setup SageMaker Domain screen, choose Quick setup, and in the User profile panel choose LabRole as the role to use. Also, be sure to turn off the Enable SageMaker Canvas permissions. You will observe numerous AccessDeniedException warning, because we cannot give you iam:CreateRole access in Learner Labs. However, the SageMaker Domain will still be created and should be able to access SageMaker Canvas after a few minutes if you choose the Canvas link under Control panel in the SageMaker left side menu.
- Tips:
  - When your session ends, the lab environment may place any running SageMaker notebook instances into a 'stopped' state. Stopped SageMaker notebook instances will not be automatically restarted when you start a new session.
  - To preserve your lab budget when using SageMaker Canvas, logout of the session when you are done working with it.

AWS Secrets Manager

- This service can assume the LabRole IAM role.

AWS Security Hub

AWS Security Token Service (AWS STS)

AWS Serverless Application Repository

AWS Service Catalog

- This service can assume the LabRole IAM role.

Amazon Simple Notification Service (Amazon SNS)

- This service can assume the LabRole IAM role.

Amazon Simple Queue Service (Amazon SQS)

- This service can assume the LabRole IAM role.

Amazon Simple Storage Service (Amazon S3)

- This service can assume the LabRole IAM role.

Amazon Simple Storage Service Glacier (S3 Glacier)

- You cannot create a vault lock

Amazon Simple Workflow Service (Amazon SWF)

AWS Step Functions

AWS Storage Gateway

AWS Systems Manager

- A role named *LabRole* and an instance profile named *LabInstanceProfile* have been pre-created for you. You can attach the role (through the instance profile) to an EC2 instance when you want to access an EC2 instance (terminal in the browser) using AWS Systems Manager Session Manager.

Amazon Textract

Amazon Timestream

AWS Trusted Advisor

Amazon Virtual Private Cloud (Amazon VPC)

AWS WAF

AWS Well-Architected Tool

AWS X-Ray