

AWS Lab 2

Spring 2023 – Due 1/30/24 at 11:59pm submitted on Canvas.

In this lab assignment, you will complete the **modules 4-7** in the AWS Cloud Practitioner Essentials Course, ID:E-N0539V

<https://explore.skillbuilder.aws/learn/course/external/view/elearning/134/aws-cloudpractitioner-essentials>

In order to complete the lab, you need to have and sign in using your amazon account. You do not need to purchase anything.

The lab is free. If you don't have an amazon account, use this link to register and get one

https://www.amazon.com/ap/register?_encoding=UTF8&openid.assoc_handle=usflex&openid.claimed_id=http://specs.openid.net/auth/2.0/identifier_select&openid.identity=http://specs.openid.net/auth/2.0/identifier_select&openid.mode=checkid_setup&openid.ns=http://specs.openid.net/auth/2.0&openid.ns.pape=http://specs.openid.net/extensions/pape/1.0&openid.pape.max_auth_age=0&openid.return_to=https://www.amazon.com/gp/yourstore/home?ie%3DUTF8%26ref_%3Dnav_newcust

Remember: the goal of IST615 is for you to learn. Don't get hung up on getting 100% of everything exactly correct if you are struggling.

Complete modules 4-7 shown below. **You do NOT need to take the quizzes associated with each module unless you would like to. If you do, you do not need to submit them in your lab submission.**

Complete the modules titled:

- **Module 4: Networking**
- **Module 5: Storage and Databases**
- **Module 6: Security**
- **Module 7: Monitoring and Analyzing**

Lab Submission and Grading:

Submit Lab #2 under the assignments tab.

Follow the instructions you'll find in the AWS lab modules and take notes and capture screen shots as you go through the lab.

Your lab reports should include a half page overview for each of the 4 modules listed above (a total of 2 pages in your summary).

Include screen captures of important events throughout each lab in your lab writeup to illustrate you have completed various steps.

To submit the lab, use this word document and append your screen captures and ½ page write-up at the end. Submit the lab using the following name

<your first name>space<your last name> space AWS Lab#2

If you have any questions, please let me know

Thank you,

Professor Rieks

Zane Alderfer

Professor Rieks

IST 615

Jan 30, 2023

AWS Lab #2

Module 4

Using a virtual private gateway can be effective in that it adds a layer of protection to your internet traffic via a VPN that develops encryption. An AWS Direct Connect establishes a private connection between your data center and a VPC.

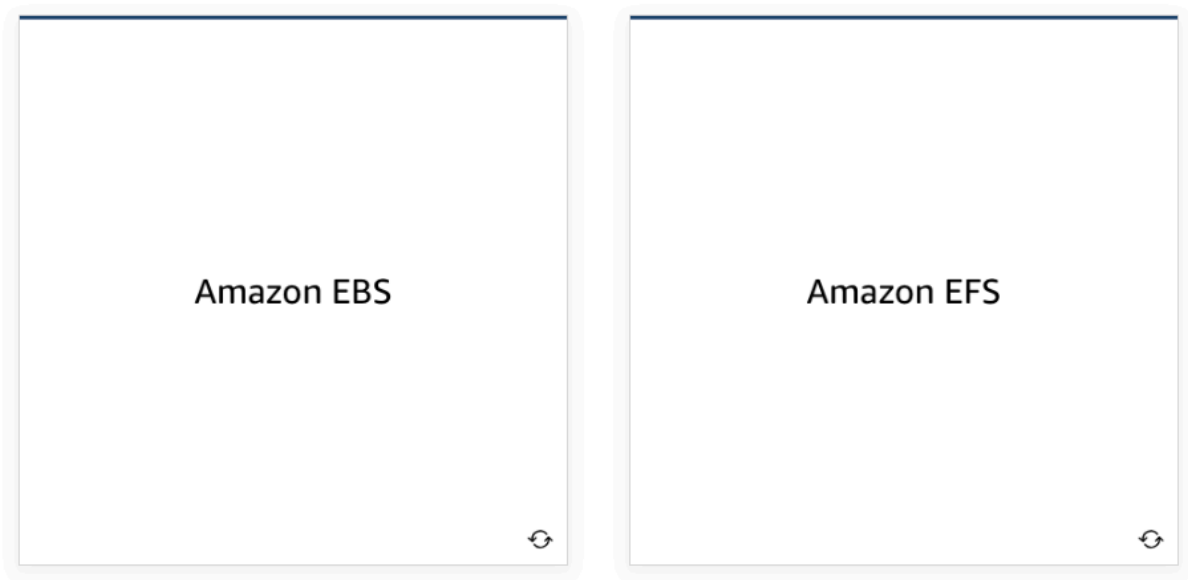


A private subnet allows you to isolate databases containing customers' personal information. A virtual private gateway creates a VPN connection between the VPC and the internal corporate network. A public subnet allows you to support the customer-facing website. Finally, an AWS

Direct Connect establishes a dedicated connection between the on-premises data center and the VPC. DNS resolution allows you to translate a domain name to an IP address.

Module 5

An EBS snapshot is an incremental backup. This is different from full backups in which all the data in a storage volume copies each time a backup occurs. An Amazon Simple Storage Service is a service that provides object-level storage. There are 8 categories of Amazon S3 storage classes: S3 Standard, S3 Standard-Infrequent Access, S3 One Zone-Infrequent Access, S3 Intelligent Tiering, S3 Glacier Instant Retrieval, S3 Glacier Flexible Retrieval, S3 Glacier Deep Archive, and S3 Outposts.



EBS stores data in a single Availability Zone while EFS stores data across multiple Availability Zones.

ID	Product name	Size	Price
1	Medium roast ground coffee	12 oz.	\$5.30
2	Dark roast ground coffee	20 oz.	\$9.27

The above picture is an example of data within a relational database retrieved from a SQL query.

Amazon RDS is a service that enables you to run relational databases in the AWS Cloud.

Amazon DynamoDB is a key-value database service. DynamoDB is serverless and allows for automatic scaling which is suitable for use cases. Amazon Redshift is a data warehousing service which allows for collection from many sources and to understand trends across your data.



AWS DMS allows the user to migrate relational, nonrelational databases and other types of data stores. Other use cases would be development and test database migrations which enable developers to test applications against production data, database consolidation combines databases into one, and continuous replication allows for continuous sending of copies of data to target sources.

Module 6

The shared responsibility model is enveloped by two categories: Customers and AWS.

Customers are responsible for the security of everything they create IN the cloud while AWS is responsible for security OF the cloud. AWS Identity and Access Management (IAM) enables you to manage access to AWS services. Some IAM features are user, groups and roles, policies and multi-factor authentication. The IAM user is an identity that you create in AWS, IAM policy is a document that allows or denies permissions to AWS services, and multi-factor authentication provides an extra layer of security. AWS Organizations allow the user to consolidate and manage multiple AWS accounts in a single location.

AWS Artifact Agreements	+
AWS Artifact Reports	+

AWS Artifact is a service that allows for on-demand access to AWS security. Artifact Agreements allow users to grant individual accounts accepted agreements to AWS security. Artifact Reports are compliance reports from third-party members for auditing purposes. There is denial of service which is a deliberate attempt to make a website or application unavailable to users.

AWS Shield Standard	+
AWS Shield Advanced	+

The AWS Shield protects applications from distributed denial of services. A shield standard automatically protects from the most common, frequently occurring types of DDoS attacks. AWS shield advanced protects against more sophisticated DDoS attacks.

Module 7

Amazon CloudWatch is a web service that enables you to monitor and manage metrics for alarm actions. Alarms automatically perform actions if the value of your metric has gone above or below a predefined threshold. Cloudtrail records API calls for your account. This includes the API caller, time of the call, and source IP address of the API caller. Insights allow the user to detect unusual API activities. A trusted advisor is a web service that inspects your environment and provides recommendations to encourage best AWS practices.

For each category:

- The green check indicates the number of items for which it detected **no problems**.
- The orange triangle represents the number of recommended **investigations**.
- The red circle represents the number of recommended **actions**.

The Trusted Advisor dashboard allows you to review checks for cost optimization, performance, security, fault tolerance, and service limits. The categories above show what each indicator means.