THE ORION PAPERS
AWS Solutions Architect (Associate)
Exam Course Manual
Linux Academy
Keller, Texas
United States of America

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To All Linux Academy Students:

Welcome to Linux Academy’s AWS Certified Solutions Architect (associate level) prep course. As part of this course, we are introducing an exciting innovation in AWS instruction - called The Orion Papers.

The Orion Papers is a non-linear, visual, interactive guide designed to enhance your learning and understanding of AWS. This guide can be used independently of the video lessons, but is meant to be supplemental and used in conjunction with the video lessons and live labs provided on linuxacademy.com.

Thank you for joining us on this AWS adventure!

Sincerely,

Thomas B. Haslett

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Course Author
Welcome to the Appendix for the Orion Papers

Here you will find helpful resources and links to aid in your exploration of AWS.

Select a resource in the navigation panel above to explore various parts of this appendix.
**AWS Account & Services Layer**

The Account & Services Layer represents how you create, access, and manage an AWS account and its services. From how you interact with an AWS account and managing user rights, to how you access and use various AWS services and features.

*This layer is all about account management & managing services.*
AWS Physical & Networking Layer

The Physical & Networking Layer represents the global infrastructure of AWS in terms of where resources are physically located around the world and how data flows through the AWS network.

This layer is all about how AWS is organized, and how internal and external communication with AWS works.

On-premise Data Center

On-Premise Servers

AWS Infrastructure “Container”

AWS Edge Location

AWS Region
  i.e. us-east-1

AWS Region
  i.e. us-west-1

AWS Region
  i.e. eu-central-1

AWS Region
  i.e. ap-northeast-1

Customers
(front end/public access)

Web Browser
(http)

Open Internet

AWS Users
(back end/private access)

SSH

Terminal
(ssh/rdp)
Moving into a pure networking view, this diagram represents how **data is routed** through AWS's networking infrastructure for **highly available and fault tolerant web application**. Identifying the methods of access for both customers (front end) and developers (back end).
Hybrid architecture allows you to combine resources located in the AWS cloud with resources located on-premise, and use them as if they were located in the same environment.
Moving into a more detailed view of IAM, here you can view an example of various ways different users and resources access an S3 bucket. Including all the IAM components required, such as Users, Groups, Roles, Policies, and API Keys.
AWS Account & Services Layer (storage services)

AWS’s main storage service is S3. As represented in the diagram, S3 has many different methods of importing, exporting, and syncing data with on-premise networks.
AWS Account & Services Layer
(compute services)

AWS’s main compute service is EC2 - which are virtual servers you can provision in the AWS cloud. AWS also offers a newer service called Lambda, which is a serverless option for a different kind of computing requirements.
AWS offers a wide range of database services, with its primary offerings including both RDS (SQL) and DynamoDB (NoSQL). Also included in the database category are options for high-performance (ElastiCache) and data warehousing (Redshift) datasets.
AWS Account & Services Layer

(Application Services)

Application and messaging services provided by AWS offer a great variety of solutions - from receiving important alerts and creating decoupled environments, to managing every task required in workflow.

On-premise Data Center

On-Premise Servers

Hybrid Environments

AWS Infrastructure "Container"

AWS Compute Services

Notifications

Queue Management

Workflow Management

SNS

SQS

SWF

AWS Account (i.e Production Account)

IAM

Open Internet

AWS Console

AWS Users (prod. account)

AWS Root Account Holder

Account Connection Tools

Go Back

Appendix
**AWS Account & Services Layer**

*(Deployment Services)*

*CloudFormation* and *Elastic Beanstalk* offer two great options for quick and efficient deployment of application infrastructure.

*CloudFormation* to manage infrastructure as code, and *Elastic Beanstalk* to easily deploy out simple single tier applications.

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On-premise Data Center

**Hybrid Environments**

On-Premise Servers
AWS Account & Services Layer
(Monitoring Services)

AWS offers two primary monitoring services (CloudWatch and CloudTrail), which can work together or independently, that allow you to effectively keep tabs on the status of your environment and who is taking what actions inside of it.
AWS Account & Services Layer (Analytic Services)

AWS provides to primary service for data analytics. **Kinesis** for real-time data processing, and **Elastic MapReduce** for Hadoop framework data processing.
AWS Essentials Section (12):

*Lambda*

**Section (12) Topics Include:**

- Introduction to AWS Lambda
- Overview of Serverless Computing
- Pricing/Cost Overview
- Using Lambda to Execute Code