AWS Cloud Architect Syllabus

Contact Info

While going through the program, if you have questions about anything, you can reach us at support@udacity.com. For help from Udacity Mentors and your peers visit the Udacity Classroom.

Nanodegree Program Info

Play a critical role in an organization's cloud computing strategy as an AWS Cloud Architect. Learn to plan, design, and implement secure cloud infrastructure in AWS at scale. Begin by designing and building high availability infrastructure, and then move on to building scalable, secure, and cost-optimized architecture. Finally, explore and execute best practices and strategies around securing access to cloud services and infrastructure.

Prerequisite Skills

A well-prepared learner is able to:

- Web Development (HTML, CSS)
- Object-Oriented Programming
- Linux Command Line Basics
- Have 1-2 years of experience in developing apps or managing cloud infrastructure that have been deployed using AWS.
- Basic understanding of and some hands on experience using compute, networking, storage, and database AWS services.
- Familiarity with concepts related to web application architecture, hosting, infrastructure, and components (e.g. web servers and databases, SSL certificates, CDN etc).
- Equivalent experience to having completed Cloud DevOps Engineer Nanodegree program or Cloud Developer Nanodegree program.

Required Software

- AWS Educate Starter Account
- Travis CI Account
- GitHub
- DockerHub
- AWS CLI
- Python 3.6 or latest

Version: 1.0.0

Length of Program: 65 Days*

* This is a self-paced program and the length is an estimation of total hours the average student may take to complete all required coursework, including lecture and project time. Actual hours may vary.

Part 1: Welcome to the AWS Cloud Architect Nanodegree program

Part 2: Design for Availability, Reliability, and Resiliency

Project: Recoverability In AWS

Supporting Lessons

Lesson	Summary
Introduction to Availability, Reliability, and Resiliency	In this lesson, you will review the course prerequisites and history of the high level concepts. You will learn what makes these topics important and you'll get a glimpse at the course project.
AZs and Regions	Overview of AWS Regions and Availability Zones and how they are used to enable high availability and geographic redundancy.
Building For Resiliency	In this lesson you will learn how to make individual AWS services resilient. You'll look at native and non-native services and learn about the difference between them with regard to high availability
Business Objectives	A look at how resilience and availability are measure by your business and how these engineering concepts integrate with the day-to-day business world.
Monitor, React, and Recover	Now that you've seen how to build highly available systems, you'll take a look at how to make sure that these systems are up and running and what to do when problems do occur.

Part 3: Design for Performance and Scalability

Project: Design, Provision and Monitor AWS Infrastructure at Scale

In this project, you will plan, design, provision, and monitor infrastructure in AWS using industry-standard and open source tools.

Supporting Lessons

Lesson	Summary
Introduction to Design for Cost, Performance, and Scalability	Welcome to the course! In this lesson we'll start with a discussion of the importance of performance efficiency, look at the history of performance in the cloud and get you set up for the rest of the course.
Cost and Monitoring	Managing cloud spend is quoted as one of the major challenges facing organizations today. This lesson will help you understand the challenges of costs in the cloud and give you some tools to help you manage those costs.
Cloud Performance and Optimization	Performance and cloud resources are closely related to costs and resource allocation. In this lesson, we will explore ways to utilize AWS services to optimize performance.
Infrastructure as Code	Writing Infrastructure as Code
Serverless Computing	Serverless computing is an architecture model where a cloud provider offers scalable, flexible, and low-cost backend services as needed.

Part 4: Design for Security

Project: Securing the Recipe Vault Web Application

Supporting Lessons

Lesson	Summary
Introduction to Designing for Security	The who, what, when, and why of Designing for Security in the cloud.
Securing Access to Cloud Services	After this lesson, you will be able to secure access for both AWS users and applications, apply security best practices such as identity federation, and fine tune least privilege access permissions.
Securing Access to Cloud Infrastructure	After this lesson, you will be able to access cloud resources securely, protect against data exfiltration, ensure compliance, and configure VPC endpoints to keep traffic within your VPC.
Protecting Data Stored in the Cloud	Our goal is to minimize the risk of a malicious actor accessing our networks and servers, invoke the AWS API, and, ultimately, perform destructive or unauthorized actions in our environments.
Defensive Security in the Cloud	You will identify vulnerable misconfigurations, guard against malicious activity, and design a deployment pipeline that ensures that security practices are implemented early on.

Part 5: Career Support

Project: Improve Your LinkedIn Profile

Find your next job or connect with industry peers on LinkedIn. Ensure your profile attracts relevant leads that will grow your professional network.

Project: Optimize Your GitHub Profile

Other professionals are collaborating on GitHub and growing their network. Submit your profile to ensure your profile is on par with leaders in your field.

Udacity

Generated Sun Jul 12 08:58:29 PDT 2020