

## [AWS-SOAW]: AWS Cloud – System Operations Associate Workshop

Length : 4 days  
Delivery Method : Instructor-led (Classroom)

### At Course Completion

Prepares you as per certification requirements for AWS System Operations Associate.

### Pre-Requisites

Basic Linux commands like working with files and directories is desired.

### Course Outline

#### Day 1: User Sign up?

##### Module 1: User Sign up?

###### Lessons

- User Sign Up
- Overview Amazon Management Console
- Management Activity and Billing overview
- Amazon Pricing

##### Module 2: AWS Big Picture – 10000 feet overview?

###### Lessons

- An overview of AWS
- EC2- An overview
- EBS- An Overview
- Security Group-An Overview
- Elastic IP- An overview
- Cloud Front-An Overview
- S3- An overview
- Glacier- An overview
- IAM – An Overview
- RDS- AN overview

##### Module 3: Amazon EC2- Win server 2012

###### Lessons

- Launch Windows server 2012 Instance
- Decrypt Password and download RDP shortcut client
- connect to the EC2 Windows 2012 instance
- Terminate the Windows server 2012 Instance

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**Module 4: Amazon EC2- Security Groups****Lessons**

- Creating Security Groups
- Modify Security Groups
- Delete Security Groups

**Module 5: Amazon Elastic Block Store****Lessons**

- Create Standard Volume
- Create and delete snapshots
- Create Provisioned I/o Volume
- Assign volumes to Windows server 2012 and Ubuntu 14.04 server
- Disassociate and Delete volumes

**Module 6: Amazon Elastic Load Balancing (ELB)****Lab 6.1**

- Launch Two Ubuntu EC2 Instances- apache web servers with user data
- Edit HTML files to both the servers
- Test your web Servers through internet

**Lab 6.2**

- Create Elastic Load Balancer
- Add both the Ubuntu servers to ELB
- Test your Elastic Load Balancer
- Delete your Elastic Load Balancer

**Module 7: AWS Route53****Lessons**

- What is Route53
- Route-53 demo integration with ELB you created (Performed by Instructor only)

**Module 8: AWS s3 ( Hands on lab by students)****Lessons**

- AWS s3- Overview and pricing
- Create Bucket and Folder
- Upload, download, share and delete object
- Delete Bucket

**Day 2 – EC2, S3, Galcier, EBS, AutoScaling, OpsWorks****Module 9: Amazon EC2 – Ubuntu 14.04 with user data****Lessons**

- Launch the EC2 Ubuntu cloud server
- Using User-data of web-server
- Validate user data is executed successfully

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**Module 10: Amazon EC2 and EBS System operations****Lessons**

- EC2- Advanced theory ec2 EBS vs instance store
- EC2- Operations (Status checks)
- EC2 – Creating your own AMI
- EC2 – Launching instance using own AMI
- EC2 – copy snapshot across region and share across accounts
- EBS – Snapshot
- EBS- creating volume using snapshot
- EBS – copy EBS snapshot across region and share across accounts
- EBS - upgrade volume types
- Security groups - create, edit and modify rules

**Module 11: Disaster recovery and Backup****Lessons**

- Disaster recovery in AWS
- Backup in AWS
- Recovery in AWS
- AWS services and automated backups
- Storing log files and other backups

**Module 12: Amazon OpsWorks****Lessons**

- AWS OpsWorks overview and pricing
- Setup OpsWorks
- get started with sample stack

**Module 13: AWS S3****Lessons**

- AWS S3- Overview and pricing
- Create Bucket and Folder
- Upload, download, share and delete object
- Delete Bucket
- File Versioning

**Module 14: Amazon Glacier****Lessons**

- AWS Glacier overview and pricing
- Create life cycle policies for your bucket
- Access data from Glacier
- Setting auto delete to your data from S3 based on rules

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## Module 15: Auto Scaling and Bootstrapping

### Lessons

- Overview of AutoScaling
- ELB: Configuring The Elastic Load Balancer for AutoScaling group
- Configuring The AMI for Our Web Application
- Auto Scaling and Bootstrapping
- Scale out VM's though stress test
- Scaling VM 's based on low utilization
- Troubleshooting AutoScaling issues

## Day 3: AWS Security- IAM, CLI

## Module 16: AWS – IAM (Identity and Access Management)

### Lessons

- What is IAM? – A comprehensive introduction
- AWS federation with Active directory - Theory only
- Getting started with IAMs
- IAM user- groups
  - Creating a user and group
  - Adding a user to the group
  - Password policy setup for users
  - Attaching policy to users
  - Enabling dual /Multi factor authentication to the users
- IAM roles
  - 1.Creating a role
  - 2.Launching a EC2 instance using a S3 full access role
  - 3.Deleting a role
- Security Token service
- Security on AWS
- AWS and IT audits

## Module 17: AWS CLI

### Lessons

- Working with the AWS cli
- Launch instance with S3 and ec2 full access
- Configure AWS cli client
- Create a security group using cli
- Create a key pair using cli
- Launch a ec2 instance using cli
- Stop an ec2 instance using cli
- Terminate an ec2 instance using cli
- Create an S3 bucket using cli
- Upload and download an object from your local machine to S3 through cli
- List buckets through cli
- Delete buckets through cli

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**Module 18: AWS- Web App and RDS****Lessons**

- RDS - An overview
- RDS - read replica
- RDS- Multi AZ failover
- RDS snapshots
- Deploy Web application in Amazon Ec2 (media wiki)
- Connect your Media wiki web application with RDS instances securely
- Make media wiki available on public URL for user sign up and write knowledge wiki

**Lab 1: Create a RDS instance****Lab 2: connecting to an RDS instance****Lab 3: creating a RDS snapshots and restoring snapshot****Lab 4: Deleting RDS snapshots****Lab 5: Deleting RDS instance****Module 19: AWS route 53****Lessons**

- Route 53 - routing options
- Simple routing – Hands on lab
- Weighted routing policy lab
- Latency based routing lab
- Geolocation based routing lab
- Failover routing lab

**Day 4: VPC and Cloud Formation****Module 20: AWS- Virtual Private Cloud (VPC)****Lessons**

- What is VPC? – A comprehensive introduction
- Networking bottlenecks
- Understanding VPC configurations
  - VPC with single public subnet
  - VPC with public and private subnet
  - VPC Peering
  - Access control List
- Configuring VPC Instances
  - Creating a VPC
  - Subnets
  - Internet Gateway
  - Routing
  - Configuring a NAT Gateway
  - Creating security groups
  - Launching instances in public and private subnets
- NAT vs Bastions
- VPC Flow Logs

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- VPC clean up

### **Module 21: AWS Cloud Formation**

#### **Lessons**

- Infrastructure as Code using Cloud Formation
- Cloud formation – Create a new stack
- Create and deploy sample template in JSON format
- Use existing templates and deploy

### **Module 22: Monitoring in the Cloud**

#### **Lessons**

- CloudWatch Introduction
- EC2 Status Troubleshooting
- Create A Cloud Watch Role
- Monitoring EC2 with Custom Metrics
- Monitoring EBS
- Monitoring RDS
- Monitoring ELB
- Monitoring ElastiCache
- Centralized Monitoring Servers
- Consolidated Billing
- Billing & Alerts
- Cost optimization

### **AWS exam tips**

- Exam blue print overview

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