



Training | Consulting | Developement | Outsourcing



Linux + AWS

 9032803832

 9032803832

 contact@techyedz.com

 www.techyedz.com

Linux + AWS Combo Course

Course Overview:

AWS has worked with Linux Academy to provide a hands-on training experience, and has developed two Amazon DynamoDB courses for AWS customers. Easily find and deploy minimal and hardened installations or specialized Linux distributions for security and GPU workloads. AWS Marketplace has free and paid listings. They're easy to use because there's no hardware to buy, and no infrastructure to maintain and most can be run on the AWS Free Tier. In this Linux certification series will prepare you for the Linux Professional Institute LPIC-1 certification exam. While the series' main focus will be on Linux, where there's a parallel or overlap with the professional administration of deployments on Amazon's AWS architecture, we'll also highlight the skills you'll need to integrate the cloud into your Linux portfolio.

Red Hat System Administration I (RH124)

Course Outline:

1. Get started with Red Hat Enterprise Linux

- Describe and define open source
- Linux distributions
- Red Hat Enterprise Linux.

2. Access the command line

- Log into a Linux system and run simple commands using the shell.

3. Manage files from the command line

- Copy, move, create, delete, and organize files while working from the bash shell.

4. Get help in Red Hat Enterprise Linux

- Resolve problems by using local help systems.

5. Create, view, and edit text files

- Manage text files from command output or in a text editor.

6. Manage local users and groups

- Create, manage, and delete local users and groups, as well as administer local password policies.

7. Control access to files

- Set Linux file system permissions on files and interpret the security effects of different permission settings.

8. Monitor and manage Linux processes

- Evaluate and control processes running on a Red Hat Enterprise Linux system.

9. Control services and daemons

- Control and monitor network services
- System daemons using systemd.

10. Configure and secure SSH

- Configure secure command line service on remote systems, using OpenSSH.

11. Analyze and store logs

- Locate and accurately interpret logs of system events for troubleshooting purposes.

12. Manage networking

- Configure network interfaces and settings on Red Hat Enterprise Linux servers.

13. Archive and transfer files

- Archive and copy files from one system to another.

14. Install and update software

- Download, install, update, and manage software packages from Red Hat and yum package repositories.

15. Access Linux files systems

- Access, inspect, and use existing file systems on storage attached to a Linux server.

16. Analyze servers and get support

- Investigate and resolve issues in the web-based management interface, getting support from Red Hat to help solve problems.

Red Hat System Administration II (RH 134)

Course Outline:

1. Improve command line productivity

- Run commands more efficiently by using advanced features of the Bash shell, shell scripts, and various utilities provided by Red Hat Enterprise Linux.

2. Schedule future tasks

- Schedule commands to run in the future, either one time or on a repeating schedule.

3. Tune system performance

- Improve system performance by setting tuning parameters and adjusting scheduling priority of processes.

4. Control access to files with ACLs

- Interpret and set access control lists (ACLs) on files to handle situations requiring complex user and group access permissions.

5. Manage SELinux security

- Protect and manage the security of a server by using SELinux.

6. Manage basic storage

- Create and manage storage devices, partitions, file systems, and swap spaces from the command line.

7. Manage logical volumes

- Create and manage logical volumes containing file systems and swap spaces from the command line.

8. Implement advanced storage features

- Manage storage using the Stratis local storage management system and use VDO volumes to optimize storage space in use.

9. Access network-attached storage

- Use the NFS protocol to administer network-attached storage.

10. Control the boot process

- Manage the boot process to control services offered and to troubleshoot and repair problems.

11. Manage network security

- Control network connections to services using the system firewall and SELinux rules.

12. Install Red Hat Enterprise Linux

- Install Red Hat Enterprise Linux on servers and virtual machines.

13. Run Containers

- Obtain, run, and manage simple, lightweight services as containers on a single Red Hat Enterprise Linux server.

Red Hat System Administration III (RH 254)

Course Outline:

1. Control services and daemons

- Review how to manage services and the boot-up process using systemctl.

2. Manage IPv6 networking

- Configure and troubleshoot basic IPv6 networking on Red Hat Enterprise Linux systems.

3. Configure link aggregation and bridging

- Configure and troubleshoot advanced network interface functionality including bonding, teaming, and local software bridges.

4. Control network port security

- Permit and reject access to network services using advanced SELinux and firewalld filtering techniques.

5. Manage DNS for servers

- Set and verify correct DNS records for systems and configure secure DNS caching.

6. Configure email delivery

- Relay all email sent by the system to an SMTP gateway for central delivery.

7. Provide block-based storage

- Provide and use networked iSCSI block devices as remote disks.

8. Provide file-based storage

- Provide NFS exports and SMB file shares to specific systems and users.

9. Configure MariaDB databases

- Provide a MariaDB SQL database for use by programs and database administrators.

10. Provide Apache HTTPD web service

- Configure Apache HTTPD to provide Transport Layer Security (TLS)-enabled websites and virtual hosts.

11. Write bash scripts

- Write simple shell scripts using bash.

12. Bash conditionals and control structures

- Use bash conditionals and other control structures to write more sophisticated shell commands and scripts.

13. Configure the shell environment

- Customize bash startup and use environment variables, bash aliases, and bash functions.

14. Comprehensive review

Practice and demonstrate knowledge and skills learned in this course.

AWS Certified Solutions Architect – Associate (SAA-C02)

Course Outline:

1. Fundamentals of Cloud Computing

- Course Introduction

- Introduction of Cloud Computing
- Key characteristics of Cloud Computing
- Cloud Analogy
- Cloud Computing Service Models
- Cloud Computing Deployment Models
- Comparison between Cloud and Legacy IT systems
- Advantages of Cloud Computing

2. AWS Cloud Overview

- Introduction to AWS Cloud
- History of AWS Cloud
- Global Infrastructure of AWS
- AWS Service scope in this course
- AWS Global vs. Regional Services
- Overview on Billing and Pricing

3. AWS Free Tier Account

- Introduction
- AWS Free Tier Account Creation
- Basic account Setting & Management
- Setting up Billing Alarm & Budget
- Activate MFA on Root Account

4. AWS IAM: Security & Authentication

- Introduction to Identity & Access Management
- Components of IAM
- Creating and Managing Users & Groups
- Creating and Managing IAM Policies
- Roles and its use cases
- Multi-Factor Authentication - [MFA]
- Security Token Service [STS]
- Security Features in IAM
- Best Practices of IAM
- Pricing

5. AWS Compute (EC2, ECS, Lambda and Lightsail)

- Introduction to EC2
- EC2 vs. Traditional Servers
- Introduction to Elastic Cloud Compute (EC2)
- Amazon Machine Images (AMI) and its Uses
- Configuring EC2 Instance and its types
- Security Groups - Creation & Management
- Launching & Connecting to EC2 instance (Hands On)
- Instance User Data and Instance Metadata
- Instance User Data and Instance Metadata (Hands On)
- Setting up a web server on EC2 Instance - Hosting a website
- Amazon Elastic Container Service(ECS)
- AWS Lambda (Serverless Computing)
- AWS Lambda Hands On
- Amazon Lightsail
- Amazon Lightsail Hands on (create Lightsail WordPress Site)
- Pricing

6. AWS Load Balancers and Auto Scaling Configuration

- Introduction
- Types of Load Balancer in AWS
- Important Components of Load Balancer
- How Health-Check Works for Load Balancer
- Creating and Configuring Application Load Balancer (Hands On)
- Understanding Launch Configuration and AutoScaling Group
- Creating and Configuring Autoscaling group (Hands On)
- Pricing

7. AWS Storage (S3, EFS and Storage Gateway)

- Introduction to Storage services
- Difference Between Object, Block and File Storage
- Introduction to Simple Storage Service (S3)
- S3 Storage Classes (or Tiers)
- S3 Consistency model
- Important Properties, Permissions and Management of S3 bucket
- Versioning of Objects
- Hosting a static-website in S3 (Hands On)
- Cross-Region & Same Region replication in S3

- S3 Transfer Acceleration
- Security feature of S3-Encryption, Bucket Policy and Permissions
- Storage Pricing
- Launch EC2 instance with IAM role and view data
- Amazon Elastic Block Store (EBS)
- AWS EBS Volume types
- Amazon EBS snapshots
- Instance Store Volumes
- Take snapshot, create AMI and Launch new Instance
- AWS Elastic File System (EFS)
- Create and mount EFS (Hands On)
- AWS Storage Gateway
- Pricing (Block store, EFS and Storage Gateway)

8. AWS Virtual Private Cloud (VPC)

- Introduction
- Amazon VPC
- Amazon VPC console Walkthrough Hands On
- Create Custom VPC Hands On
- IP Address and CIDR Block concepts
- Subnet and Route Tables
- Public, Private and Elastic IP addresses
- Internet Gateway and NAT
- Creating and managing NAT Gateways and NAT Instances
- Network Access Control List - NACL
- VPC Peering and VPC Endpoints
- Securely Connecting to the VPC
- VPN and CGW

9. AWS Relational Database Services (RDS)

- Introduction to RDS
- Components of RDS
- DB engines provided by RDS
- Snapshots and Back-up in RDS
- Read Replicas in RDS

- Creating and connecting to a RDS database
- RDS Security Groups
- Amazon DynamoDB
- Amazon DynamoDB Table Hands On
- Amazon Redshift
- Amazon ElastiCache
- Limitations and Best Practice – RDS
- Pricing in RDS

10. AWS Content Delivery

- Introduction to CloudFront
- Create CloudFront Distribution with S3 Bucket (Hands On)
- CloudFront Caching, Caching Invalidation and Cache Hit Ratio
- Pricing

11. AWS Monitoring and Logging services

- Introduction
- Important Components of CloudWatch
- Create and view Alarms & Events in CloudWatch
- Amazon CloudTrail
- Create and view CloudTrail records
- Limitations and Best Practices
- Pricing

12. AWS Automation and Platform services

- Introduction to Cloud Automation
- CloudFormation introduction
- CloudFormation Stack creation Hands On
- Understanding Beanstalk
- Benefits of Beanstalk
- Create/ Deploy PHP application with Beanstalk service
- Pricing

13. AWS Migration and Data Transfer services

- Introduction
- AWS Data Migration Service
- AWS Server Migration Service
- AWS Snowball
- AWS Snowmobile
- AWS Migration Hub

14. AWS Cloud Security and Encryption

- AWS Security Overview
- AWS Shared Security Responsibility Model
- AWS Cloud Compliance and AWS Artifact
- AWS Config
- KMS and CloudHSM
- AWS Inspector and Trusted Advisor
- AWS Personal Health Dashboard
- AWS WAF & Shield
- AWS Direct Connect
- IAM Identity Providers and Federation
- AWS Single Sign-on
- AWS Directory Service
- AWS Macie
- Use cases and Pricing

15. AWS DNS Service and Routing Policies

- Introduction to Route53
- How Route53 Works
- Domain Registration in Route53
- Health Checks in Route53
- Routing Policies in Route53
- Creating and Managing different Routing Policies
- Records Sets supported by Route53

- Alarms and Notifications in Route53
- Limitations & Best Practices in Route53
- Pricing - Route53

16. DynamoDB, AWS NoSQL Database Service

- Difference between SQL and NoSQL
- Components of DynamoDB
- AutoScaling in DynamoDB
- DynamoDB Streams
- Primary and Secondary Indexing in DynamoDB
- Data Distribution in DynamoDB
- Backup and Monitoring in DynamoDB
- Creating Table and loading data into DynamoDB
- Best Practices – DynamoDB
- Pricing in DynamoDB

17. AWS Cloud Management Services

- Understanding and configuring Trusted Advisor
- Understanding and configuring Config
- Understanding and configuring AWS System Manager
- Use Cases
- Pricing

18. AWS SNS, Notification Service

- How SNS Works?
- Important Components of SNS
- Creating and Managing Topics in SNS
- Adding Subscriber in SNS
- Managing SNS Policies
- Pricing in SNS

19. AWS Kinesis

- Types of Data Streaming in Kinesis
- Kinesis Firehose and its Architecture

- Kinesis Analytics and its Architecture
- Best Practice in Kinesis
- Use cases
- Pricing in Kinesis

20. AWS CLI, Amazon Command Line Interface

- Setting-Up AWS CLI on local machine
- Creating Users and groups using AWS CLI
- Creating & Managing Policy using AWS CLI
- Creating and Managing IAM Roles using AWS CLI
- AWS CLI Command Syntax walkthrough

21. AWS SQS

- How SQS Works - Architectural Walkthrough
- Important Components of SQS
- Pricing in SQS
- Best Practice - SQS

22. AWS Billing and Pricing

- Introduction
- AWS Budgets and Cost Explorer
- AWS Monthly Cost Calculator and TCO
- AWS Monthly Cost Calculation with an example
- AWS Support Plans
- AWS Resource grouping and Tagging
- AWS Organization and Consolidated Billing
- Pricing discussed as per modules above

Prerequisites:

- A basic knowledge of windows administration and networking knowledge.
- A Basic Knowledge of linux administration

Who Can attend:

- AWS Absolute Beginners. No prior AWS experience necessary
- Existing Solutions Architects
- Programmers interested in deploying applications on AWS
- This course is for IT Professionals who want to learn about AWS Technologies.

 **Number of Hours: 80hrs**

 **Certification: RHCE, RHCSA & SAAC02**

 **Key Features:**

- One to One Training
- Online Training
- Fastrack & Normal Track
- Resume Modification
- Mock Interviews
- Video Tutorials
- Materials
- Real Time Projects
- Virtual Live Experience
- Preparing for Certification

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