

LINUX

- Overview of Linux & Unix based operating systems
- Working with Basic Linux Commands
- System Configuration
- Configure & Manage Local Storage
- Create and configure file systems
- Deploy, configure, and maintain systems
- Manage basic networking
- Manage users and groups
- System configuration and management
- Network services
- Shell Scripting

AWS

1 : Introduction to AWS

- Navigate the AWS Management Console
- Recognise AWS Global Infrastructure
- Describe the security measures AWS provides
- Create an Amazon EC2 instance
- Remotely connecting to an EC2 instance
- Setting up Amazon Linux and Apache web server
- Browsing Amazon Machine Images (AMI)
- Specifying security groups and key pairs
- Creating new images off of running instances

2: AWS Storage

- Identify key AWS storage options
- Describe Amazon EBS
- Use Amazon EBS with Amazon EC2
- Working with Volumes and snapshots
- Transmitting data in/out of the Amazon cloud

3: Installing Software in your Amazon Instance

- Implementing a Web server in an Amazon Linux/Windows Instance
- Configure the firewall to access a Web server

4: Security in Public Cloud

- Security issues in Public Cloud
- Securing the Access : Creating a RSA Public/Private Key for VMs
- Creating a software firewall
- Configuring firewall rules
- Securing the access with an Elastic IPs
- Managing users with Identity Access Management (IAM)

5: Alternate access

- Using EC2 Command Line APIs [from Windows/Linux machines]

6: Simple Notification Services [to be seen along with Auto Scaling]

- Using SNS to send Notifications

7: Amazon S3 Basics

- Creating Buckets
- Creating Folders
- Uploading Objects
- Making Objects Public

- **Creating Buckets**
- **Securing Bucket/Object access**
- **Configuring a Bucket as Static Web Page**
- **Controlling Life Cycle of a Bucket**
- **Accessing Amazon Buckets from Windows/Linux desktops/Servers**

8: AWS-RDS

- **Overview of AWS RDS**
- **Launching a MySQL Database in RDS**
- **Creating Backups/Snapshots and Read Only DBs**
- **Connecting to RDS-DB using local DB-Clients**
- **Terminating a DB instance**

9: AWS-IAM

- **Creating Groups and Defining access policy**
- **Creating Users**
- **Login to AWS account using new users**

10: Installing Software in your Amazon Instance

- **Implementing a Web server in an Amazon Linux/Windows Instance**
- **Configure the firewall to access a Web server**

11: Load-balancing with EC2 and Auto Scaling

- **Creating and using Load Balancers**
- **Distributing incoming traffic with elastic load balancing**
- **Dynamically adding and removing instances with Auto Scaling**

12: CloudWatch to be seen along with Auto Scaling

- **Overview of Monitoring and Setting Alarms**
- **Visualising utilization metrics with CloudWatch**
- **Setting alarms to send and receive notifications**

13: Virtual Private Cloud

- **Create a VPC [VPC with a Single Public Subnet]**
- **Create and attach an Internet gateway**
- **Create an Amazon VPC subnet**
- **Set up routing in the VPC**
- **Set up a security group to control the inbound and outbound traffic**
- **Launch an instance into the subnet**
- **VPC console to allocate an Elastic IP address and assign it to the instance**
- **Amazon EC2 console to terminate your instance and the Amazon VPC console to delete your VPC**

14: AWS-CloudFront

- **Concepts of AWS-CloudFront**
- **Host a Website with CloudFront**

15: AWS-Route53

- **Creating a Failover setup for Load Balancers running in different AWS regions [users need to have a registered Domain]**
- **Health Check a private website**

16 : AWS-CloudTrail

- **Using CloudTrail to trail the API Calls**

17 : AWS System Manager

- **Run command**
- **Compliance**
- **Patch Manager**

18 : AWS Cost Management

- **AWS Cost Explorer**
- **AWS Budgets**
- **AWS Marketplace Subscriptions**

DEVOPS

- 1: Devops Lab Setup tools for Linux and windows Environment
- 2: Introduction to Devops and Dev sec ops
- 3: Introduction to SDLC ,Software testing , Agile : Software testing lifecycle
- 4: Agile Methodologies:
- 5: LINUX Administration
- 6: Installation and Initialization:
- 7: Boot and Package Management:
- 8: User Administration:
- 9: Run levels:

Version Control/ SCM(Git)

- 1: Introduction to Git

Ansible Modules.

- 1: Introduction to Ansible
- 2: Ansible Building blocks and Process flow
- 3: Ansible Playbook Modules and directory structure
- 4: Variable, Facts and jinja2 templates
- 5: Play and Playbooks

Docker Modules

- 1: Getting Started with Docker
- 2: Docker Installation
- 3: Docker Images
- 4: Docker Networking
- 5: Container Operations
- 6: Docker Compose

Jenkins Modules

- 1: Introduction to Continuous Integration and Jenkins-CI/CD
- 2: Jenkins Installation
- 3: Configure Jenkins and User Management.
- 4: Jenkins jobs setup
- 5: Jenkins Integration
- 6: Jenkins User administration

Maven Modules

- 1: Build Tolls overview
- 2: Customized Project and plugin setup
- 3: Maven Repositories and GAV snapshots.

Complete guide to Kubernetes

- 1: Introduction to Kubernetes
- 2: Key Concepts of Kubernetes
- 3: Setting up Environment
- 4: Building blocks of Pods
- 5: Managing Application Configurations with ConfigMaps and Secrets
- 6: Setting up Firewall with Network Policies

Python

Python installation

1. Overview
2. Why do we need Python?
3. Program structure
4. Environment Setup
5. Python Installation

6. Execution Types
7. What is an interpreter?
8. Interpreters vs Compilers
9. Using the Python Interpreter
10. Interactive Mode
11. Running python files
12. Working with Python shell
13. Integrated Development Environments (IDES)
14. Interactive Mode Programming
15. Script Mode Programming

Operators in Python

1. Types of Operator
2. Python Arithmetic Operators
3. Python Comparison Operators
4. Python Assignment Operators
5. Python Bitwise Operators
6. Python Logical Operators
7. Python Membership Operators (in, not in)
8. Python Identity Operators (is, is not)
9. Python Operators Precedence

Basic Concepts in Python

1. Data Types
2. Variables
3. Assigning Values to Variables
4. Multiple Assignment

5. Python Numbers
6. Python Strings
7. Accessing Values in Strings
8. String Special Operators
9. String Formatting Operator
10. Triple Quotes
11. Built-in String Operations

Python Lists, Tuples and Dictionaries

1. Accessing Values in Lists
2. Updating Lists
3. Delete List Elements
4. Basic List Operations
5. Indexing, Slicing, and Matrixes
6. Built-in List Functions & Methods
7. Python Tuples
8. Accessing Values in Tuples
9. Updating Tuples
10. Delete Tuple Elements
11. Basic Tuples Operations
12. Indexing, Slicing, and Matrixes
13. No Enclosing Delimiters
14. Built-in Tuple Functions
15. Python Dictionary
16. Accessing Values in Dictionary
17. Updating Dictionary
18. Delete Dictionary Elements
19. Properties of Dictionary Keys
20. Built-in Dictionary Functions & Methods

Loops and Decision Making

If statements

Else statements

Nested if statements

While loop

For loop

Nested loops

Loop Control Statements

Break statement

Continue statement

Pass statement

Functions

- 1. Defining a Function**
- 2. Syntax**
- 3. Calling a Function**
- 4. Pass by reference vs value**
- 5. Function Arguments**
- 6. Required arguments**
- 7. Keyword arguments**
- 8. Default arguments**
- 9. Variable-length arguments**
- 10. The return Statement**
- 11. Scope of Variables**
- 12. Global vs. Local variables**

Python Modules and Packages

1. Framework vs Packages
2. Why are modules used?
3. The import Statement
4. The from...import Statement
5. The PYTHONPATH Variable

Basic OOPs Concepts

1. Creating class in Python
2. Documented String
3. Private Identifier
4. Constructor
5. Inheritance
6. Polymorphism

File Manipulation

1. Opening Text File
2. Working with a File in Python
3. The open function
4. File modes
5. The file object attributes
6. Close() method
7. Write() method
8. Read() method
9. File input and output
10. Reading files
11. Renaming & deleting files
12. Writing into a file

13.Remove() method

Python GUI

1. Basic Operations using Tkinter
2. Buttons and Textbox
3. Menu Bar
4. Message Box and Radio Button
5. Checkbox and Event Creating

Other Concepts

1. Errors and Exception Handling
2. Standard exceptions
3. What is an Exception?
4. Handling an exception
5. Syntax
6. The except Clause with No Exceptions
7. The except Clause with Multiple Exceptions
8. The try-finally Clause
9. List Comprehensive