

CELEBRATING
12 YEARS

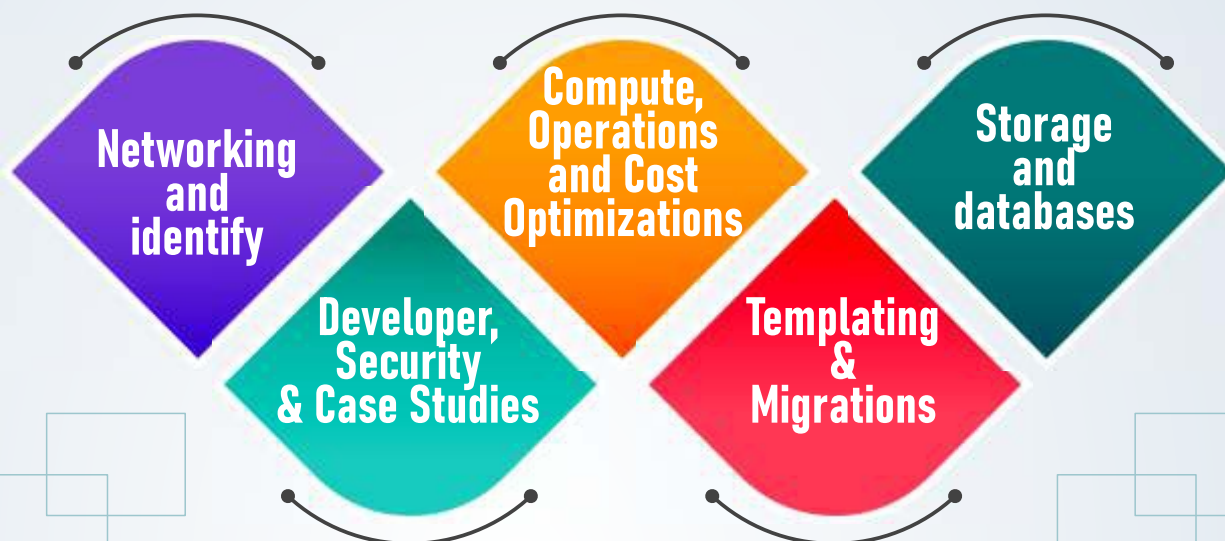
Quality Thought®



Course Duration
90 Days

Total Sessions Hours
120 Hrs

Amazon Web Services (AWS) DEVELOPER ARCHITECTURE / ADMINISTRATION



Global Infrastructure

- ⇒ Backbone Network
- ⇒ Regions
- ⇒ Availability Zones
- ⇒ Points of Presence
- ⇒ Custom Hardware

Networking

Architecture Principles and Methodologies

- ⇒ Well-Architected Framework
- ⇒ Shared Responsibility Model
- ⇒ Terminologies
 - a) Elasticity
 - b) High Availability
 - c) Fault Tolerance
 - d) Disaster Recovery
 - e) Data Persistence
 - f) Encrypt at rest and Encrypt during transit

Virtual Private Cloud (VPC)

- ⇒ VPC
- ⇒ VPC Essentials
- ⇒ Subnets
- ⇒ Network ACLs and Security Groups
- ⇒ Elastic Network Interfaces (ENI)
- ⇒ Internet Gateways and Egress Only Internet Gateways
- ⇒ NAT Gateway
- ⇒ VPC Peering
- ⇒ Elastic Ips
- ⇒ DHCP Option Sets
- ⇒ DNS in a VPC
- ⇒ Endpoints
- ⇒ Virtual Private Networks
- ⇒ Transit Gateways
- ⇒ Traffic Mirroring
- ⇒ Network Monitoring using Flow logs
- ⇒ IPv6 within AWS
- ⇒ Operating Modes:
 - a) Console
 - b) CLI
 - c) CloudFormation

Load Balancing

- ⇒ Basics
 - a) OSI Network Layer
 - b) Load Balancing
- ⇒ Classic Load Balancer
- ⇒ Application Load Balancer
- ⇒ Network Load Balancer
- ⇒ Auto Scaling Groups
- ⇒ Target Groups
- ⇒ Health Checks
- ⇒ Using third party load balancers in AWS like F5
- ⇒ Direct Connect Architecture
- ⇒ Operating Modes:
 - a) Console
 - b) CLI
 - c) CloudFormation

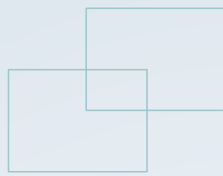
Route 53

- ⇒ DNS Basics
- ⇒ Route 53 Architecture
- ⇒ DNS Management
 - a) Public Hosted Zones
 - a) Private Hosted Zones
- ⇒ Routing policies
 - a) Simple
 - b) Failover
 - c) Weighted
 - d) Latency
 - e) Geolocation
- ⇒ Traffic flow
 - a) Traffic Policy
 - b) Policy Records
- ⇒ Route 53 Routing Policies
- ⇒ Route 53 Resolver
 - a) VPCs
 - b) Inbound vs Outbound endpoints
 - c) Rules

Identity and Access Control

IAM

- ⇒ Overview
- ⇒ Users
- ⇒ Groups
- ⇒ Roles
- ⇒ Policies
- ⇒ Custom Policies
- ⇒ Multi Factor Authentication
- ⇒ API Keys
- ⇒ Key Management Service
- ⇒ Federation and Single Sign On
- ⇒ AWS Inspector and Cognito
- ⇒ AWS Organizations and Service Control Policies
- ⇒ AWS Cross-Account Permissions
- ⇒ Operation Modes
 - a) Console
 - b) CLI



AWS Directory Services

- ⇒ Create managed directory
- ⇒ Manage Access
- ⇒ SSO with AD Credentials
- ⇒ Domain Join EC2 instances

Compute EC2

- ⇒ Virtualization in AWS
- ⇒ Virtualization Types
- ⇒ EC2 Instance Types
- ⇒ EC2 Instance Families
- ⇒ EC2 Purchasing Options
 - a) OnDemand
 - b) Spot
 - c) Reserved
 - d) Dedicated
 - e) Capacity Reservations
- ⇒ Creating AMI Images
- ⇒ High Performance Compute and Placement Groups
- ⇒ Horizontal and Vertical Scaling
- ⇒ Auto Scaling Groups
- ⇒ Key Value Pairs
- ⇒ EC2 Status Checks
- ⇒ Tags and Its Importance
- ⇒ User Data
- ⇒ EC2 Rescue
- ⇒ Operating Modes
 - a) Console
 - b) CLI
 - c) CloudFormation
- ⇒ Troubleshooting

Lightsail

- ⇒ What is Amazon Lightsail
- ⇒ DNS in Amazon Lightsail
- ⇒ Creating Ec2 instances using Lightsail

AWS Batch

- ⇒ Purpose of AWS Batch
- ⇒ Jobs
- ⇒ Job Definitions
- ⇒ Job Queues
- ⇒ Job Scheduling
- ⇒ Compute Environments
- ⇒ Elastic Fabric Adapter

Operations (OPS)

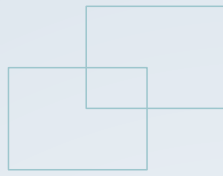
Cloud Watch

- ⇒ Monitoring and logging basics
- ⇒ CloudWatch Metrics
 - a) Predefined
 - b) Custom Cloud Watch Metrics
- ⇒ CloudWatch Alarms
- ⇒ CloudWatch Billing Alarms
- ⇒ CloudWatch Free tier Billing Alerts
- ⇒ CloudWatch Logs
- ⇒ CloudWatch Log Agent
- ⇒ CloudWatch Log Insights
- ⇒ CloudWatch Events
- ⇒ CloudWatch and Simple Notification Services Integration

Cloud Trail

CloudWatch

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CloudTrail

- ⇒ CloudTrail Workflow
- ⇒ Concepts
- ⇒ CloudTrail Log Files
- ⇒ CloudTrail Events

Simple Notification Service (SNS)

- ⇒ Introduction
- ⇒ SNS Topics
- ⇒ SNS Subscriptions and SNS Subscription Protocols
- ⇒ SNS Push Notifications

Service Catalog

- ⇒ Overview and Limits
- ⇒ Product and Portfolio
- ⇒ Authentication and Access Control
- ⇒ Managing Catalogs
- ⇒ Managing Provisioned Products
- ⇒ Managing Tags
- ⇒ Product and Service Integrations

Systems Manager

- ⇒ Purpose
- ⇒ Capabilities of Systems Manager
- ⇒ Operations Management
 - a) CloudWatch Dashboards
 - b) OpsCenter
 - c) Resource Groups
 - d) Trusted Advisor & Personal Health Dashboard
- ⇒ Actions & Change
 - a) Automation
 - b) Maintenance Windows
- ⇒ Instance & Nodes
 - a) Configuration Compliance
 - b) Inventory Management
 - c) Managed Instances
 - d) Activations
 - e) Sessions Manager
 - f) Run Command
 - g) State Management
 - h) Patch Management
- ⇒ Shared Resources
 - a) SSM Document
 - b) Parameter Store

AWS Cost Optimizations

- ⇒ Right Size
- ⇒ Increase Elasticity
- ⇒ Leverage the right pricing model
- ⇒ Optimize Storage
- ⇒ Measure, monitor & improve
- ⇒ AWS Account Structure Considerations
- ⇒ AWS Tools for Reporting and Cost Optimization

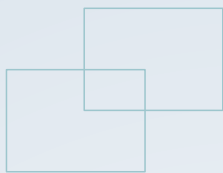
Databases

Amazon Relational Database Services

- ⇒ Overview of Relational Databases
- ⇒ RDS Instances and RDS Instance Sizes
- ⇒ Supported Databases
- ⇒ Option Groups
- ⇒ Subnet Groups
- ⇒ Parameter Groups
- ⇒ Why Aurora Database?
- ⇒ Snapshots
- ⇒ Automated Backups
- ⇒ Reserved Instances
- ⇒ Replications
- ⇒ Encryption
- ⇒ Limits
- ⇒ Operating Modes
 - a) CLI
 - b) Console
 - c) CloudFormation

Dynamo DB

- ⇒ NoSQL Overview
- ⇒ DynamoDB Concepts
- ⇒ Tables
- ⇒ Backups
- ⇒ Reserved Capacity
- ⇒ Indexes
- ⇒ Transactions
- ⇒ DAX
 - a) Dashboard
 - b) Clusters
 - c) Subnet groups
 - c) Parameter groups
- ⇒ Events



Document DB

- ⇒ Overview
- ⇒ Clusters
- ⇒ Instances
- ⇒ Snapshots

Elastic Cache

- ⇒ Caching Overview
- ⇒ Memcached
- ⇒ Redis
- ⇒ Clusters
- ⇒ Backups

Storage

Simple Storage Service (S3)

- ⇒ Architectural Overview
- ⇒ Buckets
- ⇒ Objects and Folders
- ⇒ Storage Tiers
- ⇒ Lifecycle policies
- ⇒ Versioning
- ⇒ Locking
- ⇒ Access to S3 Buckets
- ⇒ Static Website Hosting
- ⇒ S3 Cross Region Replications
- ⇒ S3 Bucket Policies
- ⇒ Troubleshooting
- ⇒ Operating Modes
 - a) Console
 - b) CLI
 - c) CloudFormation

Cloud Front

- ⇒ Overview
- ⇒ Understanding Points of Presence
- ⇒ Content Delivery Network Basics
- ⇒ Creating & Working with Distributions
- ⇒ Custom Origins
- ⇒ Security
- ⇒ Optimizations

Glacier

- ⇒ Archival Basics
- ⇒ Data Model
- ⇒ Working with Vaults
- ⇒ Working with Archives
- ⇒ Querying Archives with Glacier Select
- ⇒ Data Retrieval Policies

Elastic Block Storage

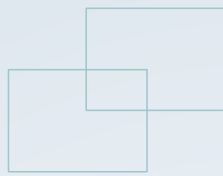
- ⇒ Hard disk Basics
- ⇒ EBS Types
- ⇒ EBS vs Instance Storage
- ⇒ Volume
- ⇒ EBS Snapshots
- ⇒ Backups & Replications
- ⇒ Mounting EBS Volumes
- ⇒ Troubleshooting
- ⇒ Operating Modes
 - a) Console
 - b) CLI
- ⇒ CloudFormation

Elastic File Storage

- ⇒ Network File System
- ⇒ Creating Resources for Amazon EFS
- ⇒ Managing EFS File Systems
- ⇒ Mounting EFS File Systems
- ⇒ Performance Limits
- ⇒ Troubleshooting
- ⇒ Operating Modes
 - a) Console
 - b) CLI
 - c) CloudFormation

AWS Storage Gateway

- ⇒ What is Storage Gateway
- ⇒ How Storage Gateway Works
- ⇒ Creating & Managing Storage Gateway
- ⇒ Troubleshooting



Cloud Formation

- ⇒ Concepts
- ⇒ How CloudFormation Works
- ⇒ Templating Basics
- ⇒ Json/YAML
- ⇒ Template Anatomy
- ⇒ Resources
- ⇒ Intrinsic Functions
- ⇒ Helper Scripts
- ⇒ Template Macros
- ⇒ Expressions
- ⇒ Stacks
- ⇒ StackSets

Server Migration Service

- ⇒ Overview
- ⇒ How Server Migrations Work
- ⇒ Server Migrations
 - a) From Azure
 - b) Form VMWare
 - c) From Hyper-V

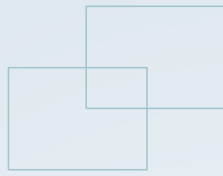
Database Migration Service

- ⇒ How AWS DMS Works
- ⇒ Security Setup
- ⇒ Replication Instance
- ⇒ Endpoints
- ⇒ Tasks
- ⇒ Migrating
 - a) Mysql
 - b) Microsoft SQL Server

Foundation Course for DevOps, AWS & AZURE

Linux

- ⇒ Overview
- ⇒ Understanding Linux Architecture
- ⇒ Shell and Kernel Overview
- ⇒ Linux Distributions
- ⇒ Using Shell
- ⇒ Exploring Filesystems
- ⇒ Working with Text Files
- ⇒ Process Management
- ⇒ Package Management
 - a) RPM
 - b) DEB
 - c) YUM
 - d) APT
 - e) SNAP
- ⇒ Managing User Accounts
- ⇒ Disk & Filesystem management
 - a) Disk Storage
 - b) Partitions
 - c) LVM
 - d) Mounts
- ⇒ Linux Networking
- ⇒ Service Management in Linux
 - a) Init
 - b) systemd
- ⇒ Server Configurations in Linux
 - a) Web Server
 - b) Application Server
 - c) Syslog
 - d) Database Servers
- ⇒ Troubleshooting in Linux



Shell Scripting

- ⇒ Why and What of Shell Scripting
- ⇒ Shell Terminals
- ⇒ Creation & Execution of Shell Scripts
- ⇒ Variables & Variable Scopes
- ⇒ Conditions in Shell Scripts
- ⇒ Iterating with loops
- ⇒ Functions in Shell Scripts
- ⇒ Regular Expressions
- ⇒ Command Piping with grep
- ⇒ Stream Editor
 - a) Understanding basics of sed
 - b) Sed commands
- ⇒ AWK Fundamentals

Python

- ⇒ Introduction
 - o Why Python?
 - o Installing Python
 - o Python 2 vs Python 3
- ⇒ Types in Python
 - a) Integers & Floats
 - b) String c) Booleans
 - d) None e) Lists
 - f) Dictionary
 - g) Other Data Types
- ⇒ Statements in Python
 - a) If b) Loops
 - c) Break & Continue
 - d) While
- ⇒ Exceptions in Python
- ⇒ Functions
- ⇒ File Management in Python
- ⇒ Yield
- ⇒ Lambda Functions
- ⇒ Object Oriented Programming with Python
 - a) Classes b) Methods
 - c) Constructors
 - d) Instance & Class Attributes
 - e) Inheritance & Polymorphism
- ⇒ Python Tips & Tricks
- ⇒ Strings & Collections
- ⇒ Modularity
- ⇒ Handling Exceptions

Networking

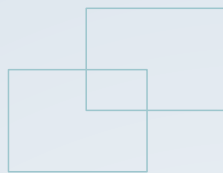
- ⇒ Basic Networking Concepts
 - a) Computer Network
 - b) Terminology
 - c) Network Protocol
 - d) Ping & Traceroute
 - e) What is IP address
 - f) Network Categories and Components
 - g) Domain Naming System
- ⇒ OSI Model
 - a) Layers
 - b) Application Layer
 - c) Presentation Layer
 - d) Session Layer
 - e) Transport & Other lower layers

Windows Server

- ⇒ Setup
- ⇒ Understanding the Client Server Architecture
- ⇒ Server Manager
- ⇒ Managing Local User Accounts
- ⇒ Task Manager
- ⇒ Windows Administrative Tools
- ⇒ Active Directory
- ⇒ DHCP
- ⇒ DNS and Name Resolution
- ⇒ IIS Services and Configuration
- ⇒ Active Directory Groups & OU
- ⇒ Group Policy Management
- ⇒ Windows Server Backups Overview

PowerShell

- ⇒ Introduction to PowerShell
 - a) What is PowerShell
 - b) PowerShell Editors
 - c) Getting Help
 - d) Command Naming & Discovery
 - e) Parameters & Parameter Sets
 - f) Introduction to Providers
- ⇒ Modules & Snap-ins
 - a) Introducing Modules
 - b) PowerShell Core & the Windows Compatibility Module
 - c) Snap-ins



- ⇒ Objects in PowerShell
 - a) Pipelines
 - b) Members
 - b) Enumerating & Filtering
 - c) Selecting & Sorting
 - d) Grouping & Measuring
 - e) Comparing
- ⇒ Operators
 - a) Arithmetic Operators
 - b) Assignment Operators
 - c) Comparison Operators
 - d) Regular Expression based Operators
 - e) Binary Operators
 - f) Logical Operators
 - g) Type Operators
 - h) Other Operators
- ⇒ Variables, Arrays and Hashtables
- ⇒ Branching & Looping
- ⇒ Strings, Numbers & Dates
- ⇒ Files, Folders & Registry
- ⇒ Web Requests & Web Services
- ⇒ Remoting & Remote Management
- ⇒ Scripts, Functions & Filters
- ⇒ Parameters, Validation & Dynamic Parameters
- ⇒ Testing, Troubleshooting & Error Handling

PowerShell DSC

- ⇒ Introduction & Overview of PowerShell DSC
- ⇒ DSC Architecture
- ⇒ DSC Configuration Files
- ⇒ DSC Resources
- ⇒ Pushing DSC Configurations
- ⇒ DSC Cross Platform Support

Others

- ⇒ Kafka Configuration
- ⇒ Vagrant
- ⇒ Virtualization
- ⇒ Groovy Scripting



STUDENT TRANSFORMATION STAGES



OUR STUDENTS ARE PLACED IN
