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Cloud Infrastructure with Devops

Duration: 6 Months

N+ (BASICS OF NETWORKING)

MODULE 1: BASIC NETWORK THEORY

- Network Definitions
- Network Models
- Connectivity
- Network Addressing
- Signaling Concepts

MODULE 2: NETWORK CONNECTIVITY

- The Data Package
- Establishing a Connection
- Reliable Delivery
- Network Connectivity
- Noise Control
- Building Codes
- Connection Devices

MODULE 3: ADVANCED NETWORK THEORY

- The OSI Model
- Ethernet
- Network Resources
- Token Ring/IEEE 802.5
- FDDI
- Wireless Networking

MODULE 4: COMMON NETWORK PROTOCOLS

- Families of Protocols
- NetBEUI
- Bridges and Switches
- The TCP/IP Protocol
- Building a TCP/IP Network
- The TCP/IP Suite

MODULE 5: TCP/IP SERVICES

- Dynamic Host Configuration Protocol
- DNS Name Resolution
- NetBIOS Support

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- SNMP
- TCP/IP Utilities
- Upper Layer Services: FTP

MODULE 6: ALTERNATE NETWORK PROTOCOLS
- Introduction to IPv6

MODULE 7: NETWORK LAN INFRASTRUCTURE
- Implement LAN Protocols on a Network
- IP Routing, IP Routing Tables
- Router Discovery Protocols
- Data Movement in a Routed Network
- Virtual LANs (VLANs)

MODULE 8: NETWORK WAN INFRASTRUCTURE
- The WAN Environment
- WAN Transmission Technologies
- WAN Connectivity Devices
- Voice Over Data Services

MODULE 9: REMOTE NETWORKING
- Remote Networking
- Remote Access Protocols
- VPN Technologies

MODULE 10: NETWORK SECURITY
- Introduction to Network Security
- Virus Protection
- Local Security
- Network Access
- Internet Security

RH124 - RED HAT SYSTEM ADMINISTRATION- I

MODULE 1: GET STARTED WITH RED HAT ENTERPRISE LINUX
- Describe and define open source, Linux distributions, and Red Hat Enterprise Linux.

MODULE 2: ACCESS THE COMMAND LINE
- Log into a Linux system and run simple commands using the shell.

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MODULE 3: MANAGE FILES FROM THE COMMAND LINE
- Copy, move, create, delete, and organize files while working from the bash shell.

MODULE 4: GET HELP IN RED HAT ENTERPRISE LINUX
- Resolve problems by using local help systems.

MODULE 5: CREATE, VIEW, AND EDIT TEXT FILES
- Manage text files from command output or in a text editor.

MODULE 6: MANAGE LOCAL USERS AND GROUPS
- Create, manage, and delete local users and groups, as well as administer local password policies.

MODULE 7: CONTROL ACCESS TO FILES
- Set Linux file system permissions on files and interpret the security effects of different permission settings.

MODULE 8: MONITOR AND MANAGE LINUX PROCESSES
- Evaluate and control processes running on a Red Hat Enterprise Linux system.

MODULE 9: CONTROL SERVICES AND DAEMONS
- Control and monitor network services and system daemons using systemd.

MODULE 10: CONFIGURE AND SECURE SSH
- Configure secure command line service on remote systems, using OpenSSH.

MODULE 11: ANALYZE AND STORE LOGS
- Locate and accurately interpret logs of system events for troubleshooting purposes.

MODULE 12: MANAGE NETWORKING
- Configure network interfaces and settings on Red Hat Enterprise Linux servers.

MODULE 13: ARCHIVE AND TRANSFER FILES
- Archive and copy files from one system to another.

MODULE 14: INSTALL AND UPDATE SOFTWARE
- Download, install, update & manage software packages from Red Hat & yum package repositories.

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MODULE 15: ACCESS LINUX FILES SYSTEMS
- Access, inspect, and use existing file systems on storage attached to a Linux server.

MODULE 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.

MODULE 17: COMPREHENSIVE REVIEW
- Review the content covered in this course by completing hands-on exercises.

RH134 - RED HAT SYSTEM ADMINISTRATION- II

MODULE 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.

MODULE 2: SCHEDULE FUTURE TASKS
- Schedule commands to run in the future, either one time or on a repeating schedule.

MODULE 3: TUNE SYSTEM PERFORMANCE
- Improve system performance by setting tuning parameters & adjusting schedule priority of processes.

MODULE 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.

MODULE 5: MANAGE SELINUX SECURITY
- Protect and manage the security of a server by using SELinux.

MODULE 6: MAINTAIN BASIC STORAGE
- Create and manage storage devices, partitions, file systems & swap spaces from the command line.

MODULE 7: MANAGE LOGICAL VOLUMES
- Create and manage logical volumes containing file systems and swap spaces
- from the command line.

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MODULE 8: IMPLEMENT ADVANCED STORAGE FEATURES
- Manage storage using the Stratis local storage management system and use VDO volumes to optimize storage space in use.

MODULE 9: ACCESS NETWORK-ATTACHED STORAGE
- Use the NFS protocol to administer network-attached storage.

MODULE 10: CONTROL THE BOOT PROCESS
- Manage the boot process to control services offered and to troubleshoot and repair problems.

MODULE 11: MANAGE NETWORK SECURITY
- Control network connections to services using the system firewall and SELinux rules.

MODULE 12: INSTALL RED HAT ENTERPRISE LINUX
- Install Red Hat Enterprise Linux on servers and virtual machines.

DEVOPS

MODULE 1: CLOUD COMPUTING
- What is Cloud Computing?
- What is Infrastructure
- What is On-premise Infrastructure
- What is Virtualization Infrastructure
- What is Cloud Infrastructure
- What is Devops Infrastructure
- What is Hyper-V
- Deploy VM using Hyper-V
- Types of Cloud Services?
- What is AWS Cloud
- How to Create AWS Account
- What is Regions
- What is Zone
- What is Security Group
- How to Create Security Group
- What is Key pair?
- How to Create Key Pair
- What is AMI & Custom AMI?

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- How to Create Custom AMI
- What is Instance Type in AWS
- What is EBS Volume
- How to create EBS Volume
- How to attach EBS Volume with Instance
- What is Instance Storage
- What is TAG
- What is Elastic IP Address
- Deploy Instance in AWS Cloud
- Project 1

MODULE 2: INTRODUCTION OF LINUX

- Introduction of Linux?
- Introduction of Linux Directories?
- Introduction of Linux User interfaces?
- Create Linux User & Login
- How to Create File in Linux
- How to Create Directory in Linux?
- How to Edit Files using Vim Command
- How to install Packages in Linux?
- How to Deploy Linux Instance in AWS
- How to Login Linux Server in On-premise
- What is Putty
- How to access Linux Server Via Putty
- How to move File one to other directory
- How to copy data one to other Directory
- How to upload data windows to Linux Instance
- How to install webserver service in Linux
- How to restart Linux services
- How to deploy Website in Linux instance
- Project 2

MODULE 3: INTRODUCTION OF WINDOWS

- What is Operating system
- Type of Operating System
- How to Create Windows instance in AWS
- How to Access Windows instance in on-premise

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Cloud Infrastructure with Devops

Duration: 6 Months

- How to install IIS Webserver Service
- How to Deploy Website in Windows Instance
- Project 3

MODULE 4: INTRODUCTION OF AWS NETWORK

- What is Network
- What is VPC in AWS
- How to create VPC
- What is Subnet
- How to Create Subnet
- What is Route table
- How to Create Route table
- What is Gateway
- How to create Internet Gateway
- What is NAT Gateway
- How to create NAT Gateway
- What is VPN Gateway
- How to Create VPN Gateway
- What is Peering Connection
- How to Create peering Connection
- What is ip address
- What is IPV4
- What is Subneting
- Project 4

MODULE 5: AWS CLOUD SERVICES

- What is Load Balancer
- Type of Load Balancer
- What is public Load Balancer
- What is Private Load Balancer
- How to Create Public Load Balancer
- How to Create Private Load Balancer
- How to Attach Instance with load balancer
- How to Remove Instance with load Balancer
- What is Auto scaling

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Cloud Infrastructure with Devops

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- How to Create Auto Scaling in AWS Cloud
- What is Launch configuration in Auto scaling
- How to Create Launch Configuration
- What is Target Group
- How to Create Target Group
- How to Use Custom Ami with Auto Scaling
- How to Use Load Balancer with Auto Scaling
- How to use VPV with Auto Scaling
- What is Route 53
- What is Hosted Zone in Route 53
- How to Create Route 53 Hosted Zone
- What is Route 53 Records
- How to Create Route53 Records
- What is SNS
- How to Create SNS
- Project 5

MODULE 6: INTRODUCTION STORAGE & DATABASE

- What is Cloud Storage
- Type of Cloud Storage
- What is S3 Storage
- How to Create S3 Storage
- What is versioning
- How to Enable versioning
- What is Replication
- How to enable replication
- How to deploy static Website
- How to connect s3 storage with on-premise
- What is EFS
- How to Create EFS
- How to attach Efs with Linux Instance
- What is RDS
- How to Create RDS
- How to Attach RDS with Linux Instance
- How to Attach RDS with Windows Instance
- How to Create Table in RDS

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Duration: 6 Months

- How to Create Database in RDS
- What is DynamoDB
- How to Create DynamoDb
- How to Create Table In DynamoDb
- How to Add Item in Dynamo DB
- Project 6

MODULE 7: INTRODUCTION OF CLOUD SECURITY

- AWS Security - IAM: An Introduction
- AWS Security - IAM Users
- How to Create IAM User
- AWS Security - IAM Groups
- How to Create Group
- How to Add User in Group
- How to Login IAM User
- AWS Security - IAM Policy
- How to Create IAM Policy
- How to Attach IAM Policy with User
- How to Attach IAM Policy with Group
- AWS Security - IAM Roles
- How to Create IAM Role
- How to Attach IAM Role
- AWS Security – MFA
- How to Attach MFA with User
- What IS Cloud Watch
- What is Cloud Formation
- What is Cloud Trail
- Project 7

CLOUD COMPUTING

- What is Cloud Computing?
- Types of Cloud Service Provider?
- What is Regions & Zones
- What is Security Group & Key pair?
- What is AMI & Custom AMI?
- What is VPC, Subnet & Gateway?
- What is Load Balancer?
- What is Instances?

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- How to install Packages in Linux?
- How to move, copy data one directory to other Directory?
- How to Deploy Linux Server in Cloud?
- How to connect Linux with Putty

WHAT IS DEVOPS, GIT & GIT HUB

- What is Devops?
- Introduction of GIT & Git Hub?
- How to install Git & Create Local Repo?
- How to Commit data in Git Local Repo
- How to Push Data Git Local Repo to Github
- How to Pull Data Github to Git local Repo?
- What is Branch & Create Branches?
- How to merge Branches?
- What is Git Conflit & Revert?
- How to Clone Git hub Repo?
- What is Git Reset?
- How to Remove untracked file

INTRODUCTION OF DOCKER

- Introduction of Docker?
- Introduction of Docker Hub?
- How to install Docker in Linux?
- What is Docker image & Create Image?
- What is Docker Container & Create?
- How to Push and Pull image in Docker Hub?
- How to Create Docker Custom Image?
- How to Create Custom Docker Container?

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- How to Share Docker Volume Between Container and Host instances
- What is Docker Compose?

INTRODUCTION OF JENKINS (CI/CD)

- Introduction of Jenkins?
- How to install Jenkins?
- What is Jenkins Master & Slave
- How to Deploy Master and Slave Setup
- Introduction of Jenkins Plug-in?
- How to install Jenkins plug-in?
- How to create login Credentials
- How to Create Jenkins User
- How to Provide user permission & Role
- What is Jenkins pipelines?
- How to Create Pipelines?
- How to build & execute pipelines?
- How to push & Pull Code Via Jenkins
- How to Build Code via Jenkins
- Project-Using AWS Cloud, Linux, Git, Github, Docker and Jenkins

INTRODUCTION OF KUBERNETS

- Introduction of Kubernets
- Introduction of K8s Cluster
- Introduction of AWS IAM Role
- Introduction of AWS Route 53
- Introduction of AWS S3 Storage
- What is K8s master and slave node
- How to Deploy Kubernets Cluster
- What is Controller use of Controller node
- What Pod how to Create Pod
- What is Replica Controller
- How to Create Replica Controller
- Introduction of K8s Services
- How to Create K8s Services
- What is Kubernets Labels
- How to Add labels
- How to Access K8s Pods Services

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- How to Create Network
- How to Create YMAL File
- How to Build Image Via YMAL File
- How to Create Container inside the Pod
- Create Multi Container inside the Pod
- What is Mini-cube, Use of Mini Cube

INTRODUCTION OF ANSIBLE

- Introduction of Ansible
- What is Ansible Server & Host infra
- How to Create Ansible Client and Host infra
- How attach Host with Ansible Server
- What is Ansible AD-Hoc Command
- What is Ansible Modules & Playbook
- How to Create Play Book
- Use of Variable in Playbook
- Use of Handlers in Playbook
- Use of Conditions in Playbook
- What is Ansible Vault
- Use of AWS Vault
- Project