

Cloud and DevOps Engineering

(Level I)

(Enterprise Linux Administration + Linux Automation Using Ansible + OpenShift - Containers and Kubernetes + Cloud - AWS / Azure + Python + DevOps tools)

INTRODUCTION

Cloud and DevOps Engineering is an industry-designed DevOps training program that will help you acquire the key skills needed to be a DevOps expert. You will be able to acquire the complete DevOps methodologies to bridge the gap between IT development (Dev) and operations (Ops) teams.

This industry-oriented course is developed by both the Technical Support division & Training division of **ipsr solutions limited**. IPSR is a **public limited IT company** with 23 years of expertise in [Software product development](#), [Training services](#), [Placement services](#) & [Digital Marketing services](#). During the past 2 decades, IPSR has trained candidates from **60+ countries** and helped **100000+ candidates** to build their IT career. Our IT services division is a pioneer in development of **Academic solution products**, incorporating cutting edge technologies like Artificial Intelligence, Data Analytics, Machine learning and Cloud Computing. Live industry experts from this IT Tech Support division contribute a major role in delivering this course. Our placement division is having **1600+ placement tie-up companies** and we are conducting [recruitment on all days](#).

The Course curriculum is designed and developed by a team of expertise panel lead by following academicians and industry experts

- ❑ **Dr. Mendus Jacob, M.Sc., M.Phil., Ph.D., MloD**
 - ❑ M.D & C.E.O - IPSR & Valin Technologies, U.K & USA
 - ❑ Director - MCA, Marian College, Kuttikkanam (Autonomous)
 - ❑ Former Director of School of Applicable Mathematics, M.G. University.
 - ❑ Academician and Entrepreneur with 30+ years' experience

- ❑ **Dr. Sunil Job K.A, M.Sc, M.Ed, M.Phil, Ph.D., RHCE**
 - ❑ Chief of Academic Solutions - IPSR



- ❑ Former college Principal and a Specialist in Data Analytics & Machine Learning
- ❑ Blogger and a Resource person for National conferences
- ❑ Academician with 25+ years' experience

What you'll learn

Through this training, you will learn technologies like Linux, Automation, Cloud, Containers, Kubernetes, Openshift, Python and DevOps tools like Jenkins, Terraform and Git through a hands-on learning approach.

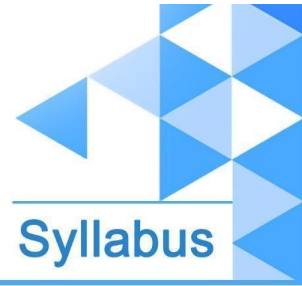
Course Outcome (CO)

While successfully completing this course, the learner will be able to:

- **Manage Enterprise Linux**
- **Automate Linux Administration Tasks**
- **Deploy and Manage applications in cloud and container platforms**
- **Implement and manage DevOps methodology**
- **Operating a Production Kubernetes Cluster**

What does this course give you?

Skills required to become DevOps Engineer and Kubernetes Cluster Administrator.



Units and Syllabuses

Unit I - Enterprise Linux Administration

Module1: Access the command line, Manage files from the command line, Get help in Enterprise Linux, Create, view, and edit text files, Manage local users and groups, Control access to files, Monitor and manage Linux processes, Control services and daemons

Module2: Configure and secure SSH, Analyze and store logs, Manage networking, Archive and transfer files, Install and update software packages

Module3: Access Linux files systems, Analyze servers and get support, improve command line productivity, Schedule future tasks

Module4: Tune system performance, Manage SELinux security, Manage logical volumes, Access network-attached storage

Module5: Control the boot process, Manage network security, Install Red Hat Enterprise Linux, Run Containers

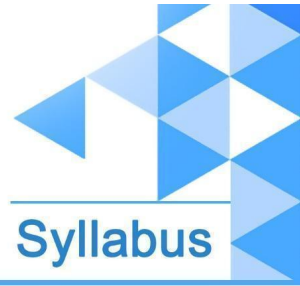
Unit II - Linux Automation Using Ansible

Module1: Introduce Ansible, Implement an Ansible playbook

Module2: Manage variables and facts, Implement task control

Module3: Deploy files to managed hosts, Manage complex plays and playbooks

Module4: Simplify playbooks with roles, Troubleshoot Ansible



Module5: Automate common Linux system administration tasks with Ansible.

Unit III - OpenShift - Containers and Kubernetes

Module1: Describe how software can run in containers orchestrated by Red Hat OpenShift Container Platform.

Module2: Creating containerized services, Managing containers

Module3: Managing container images, Creating custom container images

Module4: Deploy single container applications on OpenShift Container Platform.

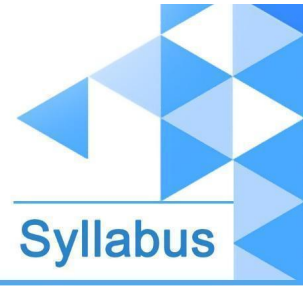
Module5: Deploy applications that are containerized using multiple container images, Troubleshooting containerized applications

Unit IV - Cloud - AWS / Azure

Module1: Implementation of Identity Access Management (IAM) for security and managing access to various resources in AWS. Creating IAM user, groups, roles and policies

Module2: Configure EC2 Instances and implementation of auto scaling for instances. Deploy, Manage and Scale applications using container orchestration service. Speed up hosted websites using Content Delivery Network. Building decoupled applications using SNS, SQS. Understanding Serverless computing services.

Module3: Storing files securely using the Object Storage method using S3. Share Storage Disks among Servers via Network. Setup Database Engines and Secure Servers and Services.



Implementation of Data Migrations and Data Transfer tools.

Module4: Implementation of VPC and its components. Distributing traffic using Load Balancers. Configure DNS using Route53. Configuring VPN to establish secure connections to on-premise networks.

Module5: Monitor Server Resources using CloudWatch. Creating backup of instances of other services. Auditing AWS environment with CloudTrail. Schedule Event Rules using Target based services

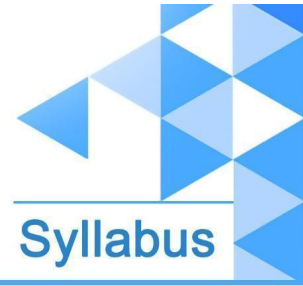
OR

Module1: Manage Azure Active Directory (Azure AD) objects including user, group and device. Implementation of role-based access control (RBAC). Management of subscription and configuration of governance strategies.

Module2: Implementation of Azure Storage account services. Configuring Azure Blob storage and lifecycle management. Creation of Azure file shares and file sync services. Configure network access and authentication to the storage account. Installation and configuration of Storage Explorer and AzCopy tools.

Module3: Configure Virtual machines and VMSS. Implementation of Azure App Services. Implementation of various container services in Azure. Automate deployment of virtual machines (VMs) by using Azure Resource Manager templates

Module4: Create and customize Virtual network components. Configuring secure access to virtual networks NSGs, Azure Firewall, Bastion. Configuring load balancing. Understanding methods to Monitor and troubleshoot virtual networks. Integrate an on-premises network with an Azure virtual network with a VPN.



Module5: Monitor resources by using Azure Monitor. Implement backup and recovery.

Unit V - PYTHON PROGRAMMING

Module1: Basics of python programming

Module2: Python functions and modules

Module3: Object-oriented programming in python

Module4: Database: MySQL

Unit VI - DEVOPS TOOLS

Module1: Introduction to DevOps methodology

Module2: Git basics and how it works

Module3: Introduction to Continuous Integration(CI), Jenkins basics and how it works

Module4: Terraform basics and how it works



Contact Us

ipsr solutions limited

Merchant's Association Building

M.L. Road, Kottayam

Kerala, India, Pin-686001

Phone: +91-481 2561410, 2561420, 2301085

Mobile: +91 9447294635, +91 9447169776

Email: training@ipsrsolutions.com

Website: <https://www.ipsr.org>

We have branches at Kochi, Calicut, Trivandrum and Bengaluru.