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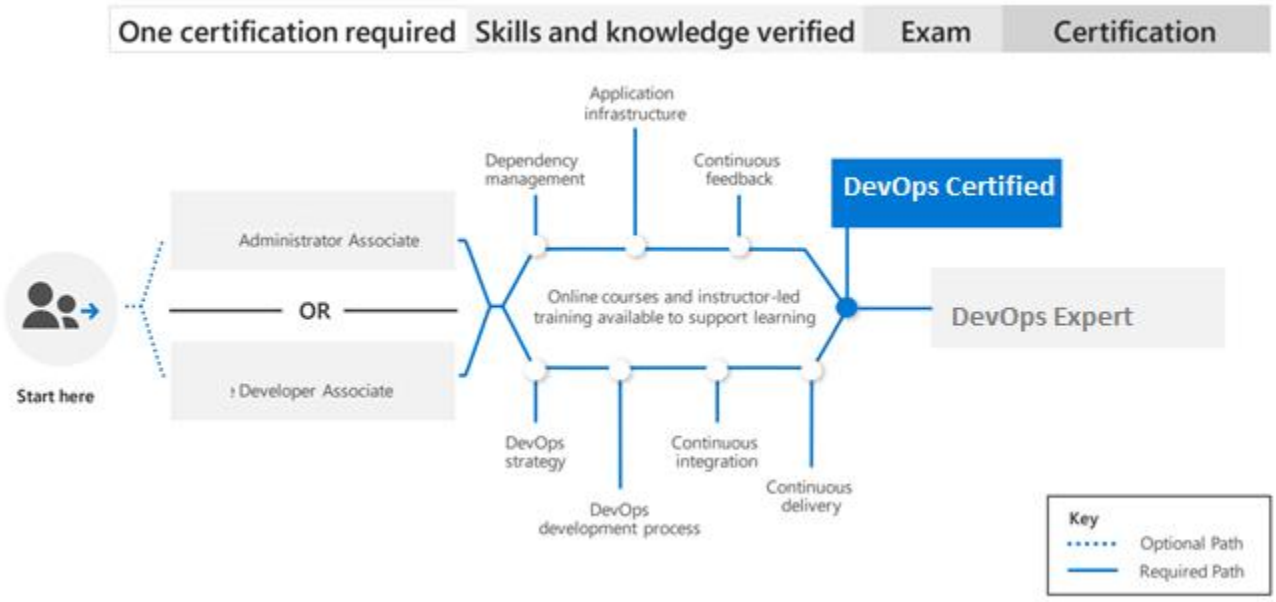
QUOTATION AND COURSE OUTLINE

TECHPLEDGE CERTFIED DEVOPS PROFESSIONAL



Course Materials

TechPledge will provide a customized set of Lecture Notes for each class scheduled along with Recoded video . You will be given a PDF file which you may make copies from, email to your participants, or make available via internal website.

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Learning Path for DevOps Professional

DevOps professionals combine people, process, and technologies to continuously deliver valuable products and services that meet end user needs and business objectives. At the TechPledge we provide the training which is always updated inline with the DevOps Skills required by the industry and recommended by Various DevOps Organization. Below is the patch for training

Evolve your DevOps practices

- *See how value stream maps can help you evaluate your current processes and technologies*
- *Sign up for your free GitHub & DockerHub*
- *Learn how to plan and track work items using CI/CD Pipeline*
- *Optimize sprint workloads across multiple Agile teams*

Build applications with DevOps

- *Collaborate with others to build your applications using CI/CD Jenkins Pipelines and GitHub*
- *Run automated tests in your pipeline to validate code quality*
- *Scan your source code and third-party components for potential vulnerabilities*
- *Build Application with Container*
- *Build Application with EC2 Instance, Storage etc. on AWS*

Deploy applications with DevOps

- *Deploy Application on AWS / Azure Using Ansible*
- *Build a more complete pipeline that deploys to multiple development and testing stages.*
- *Run functional and non-functional tests that verify your application's behavior and performance.*
- *Choose and implement an appropriate deployment pattern to smoothly roll out new features to your users*

Abilities Validated by the Certification

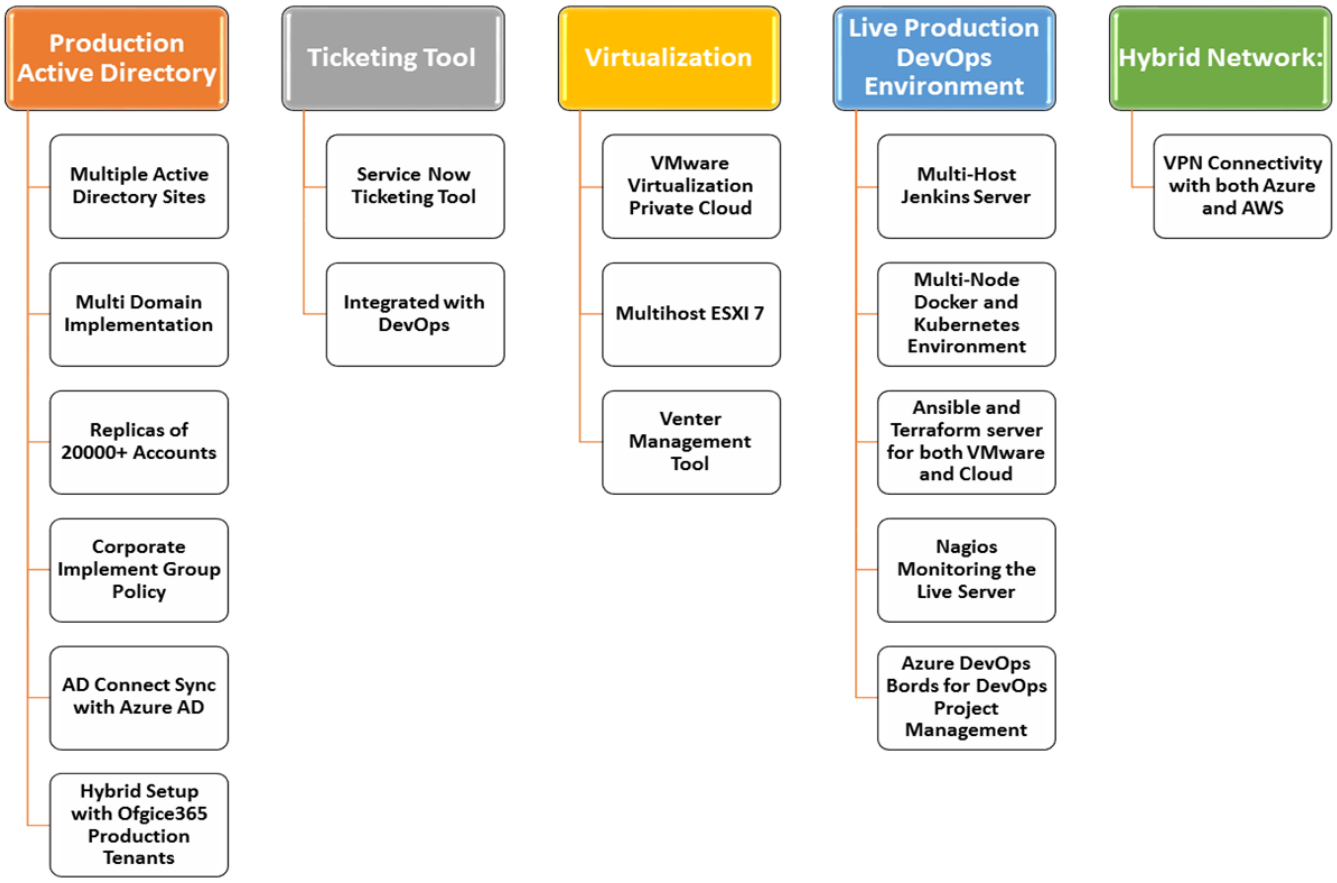
- Design a DevOps strategy
- Implement DevOps development processes
- Implement continuous integration
- Implement continuous delivery
- Implement dependency management
- Implement application infrastructure
- Implement continuous feedback

Customer Immersion – Live Production Walkthrough

6 Hours Live walkthrough the complete DevOps Process in production environment with full setup of Infrastructure Like **AD,** DevOps Tool Like **Jenkins , Ansible , Docker , AWS Code Deploy , AWS Code Pipeline , Pipeline** and **ARM** and Development Environment with Maven, Visual Studio and Python.

The Complete Setups is using **100** of **PowerShell** & **Linux Script** with **237 CI/CD scripts** (**Jason, Yamal**).

Below is the High-Level Setup Outline of our Customer Immersion Production Replicas. Student will get the access of this setup at end of the course for 6 hours with AD ID and Organization Email.



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Learn while doing with our Sandbox Environment

Azure Sandbox

- Connect with Azure Portal through the TechPledge Provide sandbox environment and play with it will all labs which you want to try.
- Create, destroy, and build Practical, scenario-based applications with ease. Our pre-configured, auto-provisioned servers allow you to try new skills, risk-free.

AWS Sandbox

- Connect with AWS Console through the TechPledge Provide sandbox environment and play with it will all labs which you want to try.
- Create, destroy, and build Practical, scenario-based applications with ease. Our pre-configured, auto-provisioned servers allow you to try new skills, risk-free.

Course Outline

Introduction to DevOps

- DevOps Principles in detail
- DevOps Engineer Skills in the market
- Knowing DevOps Delivery Pipeline
- Market trend of DevOps
- DevOps Technical Challenges
- Tools we use in DevOps
- What is Software Development
- Software Development Life Cycle
- Traditional Models for SDLC
- DevOps Lifecycle
- DevOps Tools

Lab: Create a DevOps Flow for SDLC process on draw.io
Lab: Create a Agile DevOps Flow for SDLC process on draw.io

Working with GitHub

- GitHub Introduction
- Working with Git Hub Features
- Create Public and Private Repository
- Create Teams in GitHub
- Git Desktop Tool install and Configure
- Git GUI Tool install and Configure
- GIT CMD Tool install and Configure
- Git Life cycle Commands
- Pushing Code to GitHub
- Staging Code in git
- Creating, Deleting Git Branches
- Pulling from GitHub
- Merging branches using git merge

Lab: Emulate a complete workflow for Git in production which include: Repository, Branch, Issues, Team, Clone, Merge and Tracking

Containerization

- Introduction to microservices
- Introduction to docker
- Docker demo
- Docker Architecture
- Docker Images

- Docker Networking
- Docker Volumes.
- AKS and ECS

CONTAINERIZATION WITH DOCKER

- Introduction to Docker
- Understanding Docker Lifecycle
- Components of Docker Ecosystem
- Common Docker Operations
- Creating a Docker Hub Account
- Perform Basic Docker Operations
- Committing changes in a Container
- Maintain the Container Lifecycle (Create, Start, Stop, Kill, Remove)
- Pushing a Container Image to Docker Hub
- Docker High Availability with Docker swarm
- Running a Docker image with cloud container service
- Docker Management – Monitoring, Inspecting and troubleshooting
- **Lab1:** Create a custom Docker image with Apache on CentOS, Deploy Custom website and publish it for external access
- **Lab2:** Create a custom Docker image with Apache on Ubuntu, Deploy Custom website and publish it for external access
- **Lab3:** Create a custom image with Java on CentOS and develop a sample Java app
- **Lab4:** Publish the Image on Azure/AWS cloud container service

Configuration Management Using Ansible

- What is Ansible?
- Ansible Architecture
- Setting up Ansible on Cloud Instance
- Ansible Inventory
- Use Ansible Modules
- Create Ansible Playbook using YAML
- Ansible Roles
- Create custom Ansible role using Ansible galaxy
- Overview of Ansible Tower
- **Lab1:** Launch an EC2 Instance using Ansible Playbook on AWS
- **Lab2:** Install an Apache web server on Ansible Managed Node using Ansible Playbook
- **Lab3:** Copy the Files on Ansible Managed Node using Ansible Playbook
- **Lab4:** Create a simple ansible roles with reusable Ansible-Playbook

Configuration Integration with Jenkins

- Introduction to Continuous Integration
- Jenkins Master Slave Architecture
- Understanding CI/CD Pipelines

- Create upstream and downstream projects
- Installing Plug-ins in Jenkins
- Using the Pipeline Plugin In Jenkins
- Creating an end to end automated CI/CD Pipeline
- Working with scripted pipeline
- Introduction to Maven
- Creating Maven Project in Jenkins
- **Lab1:** Launch an EC2 Instance using Jenkins Freestyle Project on AWS
- **Lab2:** Deploy Directory and Collect Inventory File copy using mapped network using Jenkins Pipeline
- **Lab3:** Create a Parameterized Pipeline with Jenkins scripted pipeline
- **Lab4:** Build a Docker Image using Jenkins, Git and Docker

Introduction to Terraform

- Introduction to terraform
- Infrastructure Automation
- Install Terraform
- Providers
- Resources
- Basic Syntax
- Exercise: Your First Script main.tf
- Terraform Plan, show, Apply, Destroy
- Setting up the system for AWS
- **Lab1:** Launch an EC2 Instance with custom parameter using Terraform Script on AWS
- **Lab2:** Update the EC2 Instance with adding custom disk

Kubernetes Essential

- What is Kubernetes?
- Why Kubernetes is important?
- Understanding of Pods and Cube
- Introduction to Kubernetes Cluster
- Introduction to Kubernetes's Cluster Service
- Working on Pods
- Setup Kubernetes on AWS VM
- Create and Run Services
- **Lab1:** Create a service for Nginx and expose over the port for external access
- **Lab2:** Scale the services created as deployment

DevOps on Cloud

- Essentials of Cloud computing?
- Cloud and virtualization architecture

- Cloud deployment architecture
- Cloud providers – An overview
- Why we need DevOps on Cloud?
- Introducing to Amazon & Azure web services
- Various AWS & Azure services for Devops – An overview

Project

Project 1: Provision EC2 with Custom Image on AWS

Project 2: DevOps Project - Build -Test-Report using Real time Java selenium code

Course Fee

Call for Price