Training **:** **Microsoft Azure Solutions Architect**
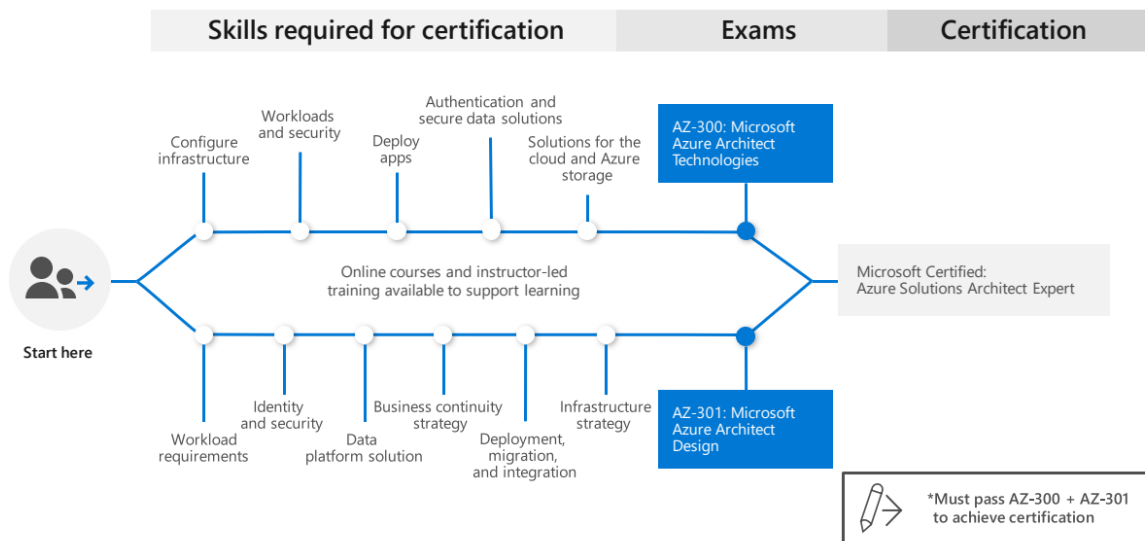
Certification **: AZ- 303**

Certification Path :

Course Outline

Application Architecture Patterns in Azure
- Pattern Resources
- Performance Patterns
- Resiliency Patterns
- Scalability Patterns
- Data Patterns

Designing Highly Available, Cost-efficient, Fault-tolerant, and Scalable Systems
- Planning and Designing Cloud Services
- How to design Cloud Services
- Monitoring and Logging
- Hybrid IT architectures
- **Lab 1:** Create a sample solution design for customer with draw.io
- **Lab 2:** Create a sample cost estimate for the customer requirement with proposed components

Deploying Resources with Azure Resource Manager
- ARM Templates
- Role-Based Access Control (RBAC)
- Resource Policies
- Security
- Building Blocks
- **Lab3:** Create Resource Groups
- **Lab4:** Deploy an Virtual Machine Using ARM template
- **Lab 5:** Deploy an Webapp with ARM template from github

Building Azure IaaS-Based Server Applications
- High Availability
- Templated Infrastructure
- Domain-Connected Machines
- **Lab6:** Deploy a Resource Group using Azure Cli
- **Lab7:** Deploy a Virtual Machine using Azure Cli
- **Lab8:** Deploy a Resource Group using PowerShell
- **Lab9:** Deploy a Virtual Machine using PowerShell

Creating Managed Server Applications in Azure
- Infrastructure-Backed Platform-as-a-Service (PaaS)
- High-Performance Compute (HPC)
- Introduction to Containerization
- Introduction to Azure Container Service
- **Lab10:** Deploy Docker Image in Azure Container Service

Authoring Serverless Applications in Azure
- Understanding Web App tiers
- Resource Group and Web Hosting Plans
- Supported language
- Scaling of Websites
- Deployment source
- Horizonal and Vertical Scaling
- Production and Test Deployment Slots
- Integrated web app with Code Repository like git hub
- Using Deployment center
- Use the Visual Studio and Dot net code to Create web app
- Publish Java Application in Web app
- **Lab11:** Create Web App with sample code, Do Horizontal Scaling and Vertical Scaling
- **Lab12:** Create Web App with code from Visual Studio
- **Lab13:** Create Web App with code from GitHub, Implement Deployment slots for Staging, UAT and Production and Implement Ci/CD

Backing Azure Solutions with Azure Storage
- Azure Storage Pricing
- Azure Storage High Availability
- Azure Manage and Unmanage Disk
- Blob Storage
- Access Security in Block Storage
- Key Based Authentication for Blob Storage
- Connect and use blob storage using Java, Dot Net code
- Files Storage
- Queue Storage
- Overview of StorSimple
- **Lab14:** Create a Design decision Flowchart for storage selection

- **Lab15:** Create a Storage Account and Configure Blob Container.
- **Lab16:** Install Azure Storage Explorer, connect with secure string and connect the Storage
- **Lab17:** Create and Attached the additional Disk storage to Azure VM and Format it using NTFS

Comparing Database Options in Azure
- Relational Database
- Understanding Database as a service
- SQL Database is not SQL Server
- Advance Capabilities
- Benefits of SQL database
- Scaling SQL database
- Connect SQL Dat5abse with Visual Studio or Java
- SQL database Unit Test
- Backup Options
- Hands-on Lab: Deploy SQL database on Azure
- NoSQL Services
- Azure Cosmos DB
- Azure Cosmo DB Provisioning and scalability
- Azure Cosmo DB Pricing Model
- **Lab18:** Deploy a CosmosDB Database Instance and Create a sample customer records
- **Lab19:**. Deploy a SQL Server Database Instance and Connect SSMS Installed on-prem
- **Lab20:**. Deploy a SQL Server Database Instance and Connect with Visual Studio form

Networking Azure Application Components
- Design VNETs On Azure
- Design Load Balancing Options
- Design External Connectivity
- **Lab21:**. Design a VNet for a TPCS Cloud Network
- **Lab22:**. Creating 4 VNETs with CIDR and Create Multiple Sunsets and Connect Using VNet Peering

Managing Security and Identity for Azure Solutions

- Security Monitoring
- Data Security
- Azure IAM
- Azure Security Center
- Use Azure Secure score
- Use Azure Advisor
- Azure Active Directory (Azure AD)
- Hybrid Identity
- Azure AD Application Integration
- **Lab23:** Create Users, Roles and Assign permission on Azure

- **Lab24:** Create a Recommendation chart for customer with Issues, Impact and Solution Steps for Performance, Security and Cost using Advisor and Secure Score
- **Lab25:** Review the customer immersion infra for Hybrid and Sync Identity
- **Lab26:** Create a Recommendation chart for customer with Issues

Disaster Recovery Planning
- Disaster Recovery Terminology
- Introduction to Azure Disaster Recovery
- Azure High Availability Options
- Overview of Azure ASR
- Overview of Azure Migration
- Understand the Backup option in Azure
- **Lab27:** Create Backup for On-Prem File Data using Azure Backup
- **Lab28:** Create Replicas of VM to other regions using site recovery

Monitoring and Automating Azure Solutions
- Application Monitoring
- Platform Monitoring
- Network Monitoring
- Alerting
- Azure Automation
- Auto-Scale
- **Lab29:** Create Backup for On-Prem File Data using Azure Backup
- **Lab30:** Use App Insight Application Dashboard to Monir the Application

Microsoft Tool
- MAP Tool
- Azure Pricing Calculator
- Azure Bandwidth Calculator
- Microsoft Solutions Architect
- **Lab31:** Review the Customer Immersion Environment with MAP result
- **Lab32** Create a price Estimate with proposed solutions in Azure
- **Lab33:** Review the Customer Immersion Environment with Azure Bandwidth

Migrating Workloads on Azure

- Azure Migration Tool
- Azure Site Recovery
- Planning for Migration
- How to Migrate SQL Database to Azure (Planning)
- Migrate IIS hosted Application along with Code to Azure App Service (Planning)
- Sync the On-Prem Directory with Azure AD
- **Lab34** Review the Sync Identity (On-Prem AD with Azure AD) at Customer Immersion
- **Lab35:** Review the Sync Identity (On-Prem AD with Azure AD) at Customer Immersion

- **Lab36:** Perform the Live Migration of SQL database to Azure with Customer Immersion
- **Lab37:** Migrate the on-prem Hoisted website to Azure App at Customer Immersion

Project:

Project Title: Design the complete solutions for TPCS to transition from on-prem to Azure Cloud

Project Description:

- TPCS an Renowned Company based out of USA approached TechPledge Consulting regarding Migration of their on-prem infra to Azure cloud. They want the transition should be smooth and must be within the budget.