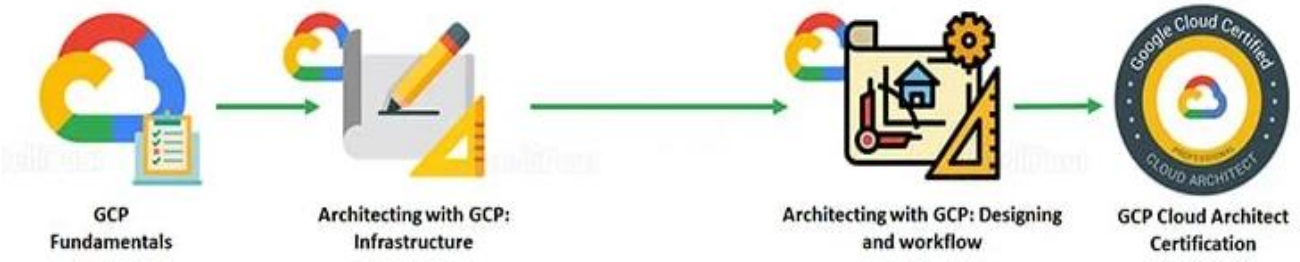
INTRODUCTION | DATABASE ARCHITECT | NETWORK | APP SOLUTIONS | STORAGE DESIGN | SECURITY PLANNING| MIGRATION PLAN | MONITORING | COST

14 MODULE | 37 LABS | CERTFICATION ASSISTANCE

QUOTATION AND COURSE OUTLINE

GOOGLE CLOUD CERTIFIED PROFESSIONAL CLOUD ARCHITECT

EXAM GCP 2019- GCP CLOUD ARCHITECT



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.

Learning Path for Azure Solutions Architect

Azure Architect Professionals must have skills needed to design solutions that run on Google Platform. A GCP Certified Solutions Architect must have expertise in compute, network, storage, and security. At the TechPledge we provide the training which is always updated inline with the GCP Solutions Architect Skills required by the industry and recommended by Google. Below is the patch for training

Evolve your Implementation Skills

- *Google architecture and service guarantees*
- *Manage services with GCP Console*
- *Security, responsibility and trust in Google Platform*
- *Apply and monitor infrastructure standards with GCP Policy.*
- *Control and organize GCP resources with GCP Resource Manager*

Manage Resources in GCP

- *Align requirements with cloud types and service models in Google*
- *Manage implementations of cloud architecture*
- *Automate Tasks with Terraform*
- *Predict costs and optimize spending for GCP*
- *Manage and provision the cloud solution infrastructure*

Architect Great Solutions in GCP

- *Ensure solution and operations reliability*
- *Design for security and compliance*
- *Design for performance and scalability*
- *Design for efficiency and operations*
- *Design for availability and recoverability*

Abilities Validated by the Certification

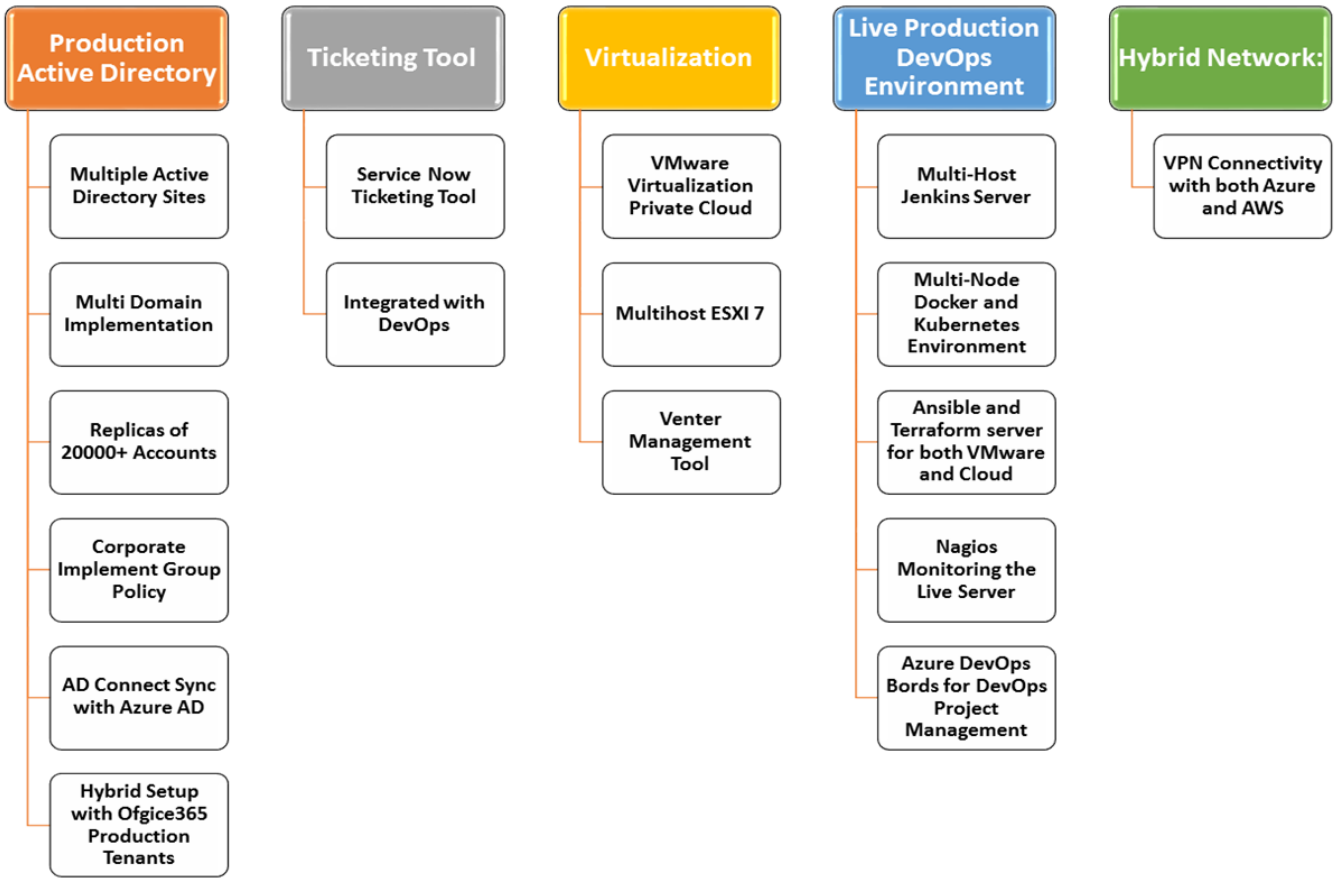
- Deploy and configure infrastructure
- Implement workloads and security
- Create and deploy apps
- Implement authentication and secure data
- Develop for the cloud and for GCP storage
- Determine workload requirements
- Design for identity and security
- Design a data platform solution
- Design a business continuity strategy
- Design for deployment, migration, and integration
- Design an infrastructure strategy

Customer Immersion – Live Production Walkthrough

6 Hours Live walkthrough the complete Infrastructure Integration and Migration Process in production environment with full setup of Infrastructure Like **AD, Microsoft SQL , Microsoft Exchange, File Server , ADFS and** DevOps Tool Like **Jenkins , Ansible , Docker , Terraform, GCP CLI, AWS Code Deploy , AWS Code Pipeline , Azure Pipeline** and **Azure 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.



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

Application Architecture Patterns in GCP

- 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

Setting Up GCP Cloud Solution Environment

- Creating projects
- Assigning users to predefined IAM roles within a project
- Enabling APIs within projects
- Provisioning one or more Stackdriver workspaces
- Creating one or more billing accounts
- Linking projects to a billing account
- Establishing billing budgets and alerts
- Setting up billing exports to estimate daily/monthly charges
- Installing and configuring the command line interface (CLI)
- Compute Engine Resources
- Manage Compute Engine Resources
- **Lab3:** Create GCP Account and Create Project
- **Lab4:** Enable Billing

Provision the Compute Instance

- Google Compute Instance Overview
- Creating an Instance Using the Console
- Accessing an Instance Using the Console
- Deleting an Instance Using the Console
- Launching a compute instance using Cloud SDK
- Viewing current running VM inventory (instance IDs, details)
- Add new Disk
- Scale the VM Size
- Install Web Server in Linux Instance
- **Lab6:** Creating an Linux Instance Using the Console
- **Lab7:** Access the Linux Instance Using the Console
- **Lab8:** Add New Disk to VM Instance
- **Lab9:** Scale up and Scale down of VM
- **Lab 10:** Install Apache web server and Access from outside

Deploying and implementing App Engine

- Infrastructure-Backed Platform-as-a-Service (PaaS)
- High-Performance Compute (HPC)
- Deploying an application
- Updating scaling configuration,
- Working with management interfaces (Console, Cloud Shell, SDK)
- **Lab10:** Deploy the Hello World App using Google App Engine

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 Horizonal 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

GCP Solutions with GCP Storage

- Understand Cloud Storage – Nearline, Coldline
- GCP Storage Pricing
- Google Cloud Storage
- GCP Storage High Availability
- Storage - Buckets and Objects
- Working with Cloud Storage Buckets
- Cloud Storage Datastore
- Consistency in Cloud Datastore
- Cloud Storage – Spanner
- Spanner Data Types & Models
- Pros and cons of storage option and how to choose
- Understanding Billing aspect of storage options
- Tradeoff of storage options
- Integration with on premises/multi-cloud environment
- **Lab14:** Create a Design decision Flowchart for storage selection
- **Lab15:** Create a Google Cloud Storage and Upload the Data and Setting object life cycle management policies for Cloud Storage buckets
- **Lab16:** Moving objects between Cloud Storage buckets
- **Lab17:** Host your website in cloud storage
- **Lab18:** Create Cloud Datastore and Entity Group in Datastore

Design, Implement and Managing database solutions

- Relational Database
- Understanding Database as a service
- Google Cloud Storage - Cloud SQL
- Cloud SQL - High Availability Introduction

- Advance Capabilities
- Benefits of Cloud SQL
- Scaling SQL database
- Backing up and restoring data instances
- **Lab19:** Deploy a Cloud SQL Instance and Create a sample customer records

Deploying and Implementing Networking Resources

- Design VNETs On Google
- Creating a VPC with subnets
- Creating ingress and egress firewall rules for a VPC (e.g., IP subnets, tags, service accounts)
- VPC Peering
- Design Load Balancing Options
- Design External Connectivity
- **Lab20:** Design a VNet for a TPCS Cloud Network
- **Lab21:** Creating 4 VNETs with CIDR and Create Multiple Sunsets and Connect Using VNet Peering
- **Lab22:** Launching a Compute Engine instance with custom network configuration
- **Lab23:** Creating a load balancer to distribute application network traffic to an application

Managing , Monitoring Security and Identity for Google Solutions

- Security Monitoring
- Data Security
- Security aspect of GCP
- Understand Identity and Access Management
- Understanding different role and permission
- IAM Role – Primitive, Predefined, Custom
- Managing users in Cloud Identity
- Assigning users to predefined IAM roles within a project
- Assigning IAM roles to accounts or Google Groups
- Managing service accounts with limited privileges
- Assigning a service account to VM instances
- Granting access to a service account in another project
- Key Management Systems
- Provisioning one or more Stackdriver workspaces
- Installing the Stackdriver Agent for monitoring and logging
- **Lab24:** Create Users, Roles and Assign permission on GCP
- **Lab25:** Create a Recommendation chart for customer with Issues, Impact and Solution Steps for Performance, Security and Cost
- **Lab26:** Provisioning Stackdriver workspaces and Installing the Stackdriver Agent in VM for monitoring and logging
- **Lab27:** Create a Recommendation chart for customer and Assigning a service account to VM instances
- **Lab28:** Viewing audit logs for project and managed services.

Disaster Recovery Planning

- Disaster Recovery Terminology
- Introduction to Azure Disaster Recovery
- GCP High Availability Options
- Understand the Backup option in GCP
- **Lab29:** Create Backup for VM Data using GCP Backup

Deploying and implementing Google Kubernetes Engine resources.

- Understand Containers and their benefits
- Kubernetes Engine, Container Registry
- How to use Kubernetes Load Balancing
- Understand Kubernetes Engine cluster
- Deploying a Google Kubernetes Engine cluster
- Deploying a container application to Google Kubernetes Engine using pods
- Configuring Google Kubernetes Engine application monitoring and logging
- Viewing current running cluster inventory (nodes, pods, services)
- Browsing the container image repository and viewing container image details
- Working with node pools (e.g., add, edit, or remove a node pool)
- Working with pods (e.g., add, edit, or remove pods)
- Working with services (e.g., add, edit, or remove a service)
- **Lab 30:** Provision Google Cloud Kubernetes Cluster and Deploy an app in Container
- **Lab31:** Scale the Container **,** Add Nodes

GCP Architect Tool

- MAP Tool
- GCP Pricing Calculator
- Google Bandwidth Calculator
- GCP Solutions Architect
- **Lab32:** Review the Customer Immersion Environment with MAP result
- **Lab33** Create a price Estimate with proposed solutions in GCP
- **Lab34:** Review the Customer Immersion Environment with GCP Bandwidth

Designing & Implementing GCP Migration

- Different critical KPIs, Metrics, Analytics
- How to take decision to migrate to GCP
- How to choose from different options as per specific need
- How to manage scalability
- Hybrid model
- How to move completely from on-prem to GCP
- **Lab35 :** Collect and Analyze metrics & Create Migration Plan

- **Lab36:** Migrate the on-prem Hoisted data to GCP

Project:

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

Project Description:

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

Course Fee

Call for Price