

# Sela.

20535AA

## Architecting Microsoft Azure Solutions

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# Architecting Microsoft Azure Solutions

20535AA - Version: 1

 5 days Course

## Description:

This course is intended for architects who have experience building infrastructure and applications on the Microsoft Azure platform. Students should have a thorough understanding of most services offered on the Azure platform. The students typically work for organizations that have an active solution on Azure and are planning to enhance existing solutions or deploy more solutions to the Azure platform. This course also is intended for architects who want to take the Microsoft Certification exam, 70-535, Architecting Microsoft Azure Solutions.

## Intended audience:

Developers - This course is intended for students who have experience building infrastructure and applications on the Microsoft Azure platform. Students should have a thorough understanding of most services offered on the Azure platform. For the interactive component, this course offers students the opportunity to deploy Azure solutions using built-in DevOps tools such as Azure Resource Manager templates, deployments, resource groups, tags and Role-Based Access Control. This course does not require any direct experience writing application code or configuring server machines. This course focuses on the architectural comparisons between services and technical decision making needed to deploy well-designed solutions on the Azure platform. This course also prepares the students for the 70-535: Architecting Microsoft Azure Solutions certification exam. The candidates targeted by this training have intermediate experience in designing, implementing and monitoring Azure solutions. Candidates are also proficient with the tools, techniques, and approaches used to build solutions on the Azure platform.



## Prerequisites:

Before attending this course, students must have the following technical knowledge:

Create resources and resource group in Azure.

Manage users, groups, and subscriptions in an Azure Active Directory instance.

Build an Azure Virtual Machine with related resources.

Manage containers and blobs stored in an Azure Storage account.

Create App Service Plans and manage apps related to the plan.

Configure an Azure Virtual Network and enable S2S and P2S connectivity.

Protect networked application components using Network Security Groups.

Automate everyday Azure resource tasks using Azure CLI or Azure PowerShell.

Deploy an Azure SQL, MySQL, Postgres or Cosmos database instance.

Monitor existing Azure solutions using built-in metrics, Application Insights, or Operational Insights.

## Objectives:

After completing this course, students will be able to:

Describe Azure architecture components, including infrastructure, tools, and portals.

Create and deploy Azure Resource Manager (ARM) templates for various all-up solutions.

Compare and contrast various infrastructure, serverless, database and communication services; such as App Services, Virtual Machine Scale Sets, Azure Cosmos DB, SQL Database, and Container Service in Azure.



Incorporate various Azure platform services, such as Cognitive Services and Media Services into an overall Azure solution.

Secure, monitor and backup solutions deployed to Azure.

Create automated DevOps solutions using a combination of ARM templates, configuration management utilities, Azure CLI, and the Cloud Shell.

## Topics:

### Module 1: Application Architecture Patterns in Azure

- Pattern Resources
- Performance Patterns
- Resiliency Patterns
- Scalability Patterns
- Data Patterns

### Module 2: Deploying Resources with Azure Resource Manager

- ARM Templates
- Role-Based Access Control (RBAC)
- Resource Policies
- Security
- Building Blocks
- Lab : Getting Started with Azure Resource Manager
  - Create Resource Groups
  - Deploy an Empty Template
  - Deploy a Simple Template
  - Cleanup Subscription



## Module 3: Building Azure IaaS-Based Server Applications

- High Availability
- Templated Infrastructure
- Domain-Connected Machines
- Lab : Deploying Infrastructure Workloads to Azure
  - Deploy a Virtual Machine using PowerShell DSC
  - Deploy a Virtual Machine Scale Set using PowerShell DSC
  - Cleanup Subscription

## Module 4: Creating Managed Server Applications in Azure

- Infrastructure-Backed Platform-as-a-Service (PaaS)
- High-Performance Compute (HPC)
- Migration
- Lab : Deploying Managed Server Workloads to Azure
  - Create Azure Container Service Cluster
  - Deploy Docker Image
  - Cleanup Subscription

## Module 5: Authoring Serverless Applications in Azure

- Azure Web App
- Azure Functions
- Integration
- High Performance
- Lab : Deploying Serverless Workloads to Azure
  - Create Web App
  - Deploy Web App Code
  - Deploy Function App and Code



- Cleanup Subscription

## Module 6: Backing Azure Solutions with Azure Storage

- Pricing
- Blob Storage
- Files
- StorSimple
- Lab : Deploying Azure Storage to Support Other Workloads in Azure
  - Create Required Resources for a Virtual Machine
  - Create a VM With a Storage Account
  - Create a VM With a Managed Disk
  - Cleanup Subscription

## Module 7: Comparing Database Options in Azure

- Relational
- NoSQL Services
- Azure Cosmos DB
- Data Storage
- Data Analysis
- Lab : Deploying Database Instances in Azure
  - Deploy a CosmosDB Database Instance
  - Validate the REST API
  - Cleanup Subscription

## Module 8: Networking Azure Application Components

- VNets
- Load Balancing



- External Connectivity
- Hybrid Connectivity
- Lab : Deploying Network Components for Use in Azure Solutions
  - Create an ARM Template for a Linux VM
  - Duplicate the VM Resources
  - Create a Load Balancer Resource
  - Cleanup Subscription

## Module 9: Managing Security and Identity for Azure Solutions

- Security Monitoring
- Data Security
- Application Security Azure Active Directory (Azure AD)
- Hybrid Identity
- Azure AD Application Integration
- Lab : Deploying Services to Secure Secrets in Azure
  - Deploy Key Vault using ARM Template
  - Deploy Virtual Machine using Key Vault Secret
  - Cleanup Subscription

## Module 10: Integrating SaaS Services Available on the Azure Platform

- Cognitive Services
- Bot Services
- Machine Learning
- Media Services
- Lab : Deploying Service Instances as Components of Overall Azure Solutions
  - Deploy Function App and Cognitive Service using ARM Template
  - Cleanup Subscription



## Module 11: Integrating Azure Solution Components using Messaging Services

- Event Messaging
- Integration
- IoT
- Lab : Deploying Messaging Components to Facilitate Communication Between Azure

### Resources

- Deploy Service Bus Namespace
- Deploy Logic App
- Cleanup Subscription

## Module 12: Monitoring and Automating Azure Solutions

- Application Monitoring
- Platform Monitoring
- Network Monitoring
- Alerting
- Backup
- Azure Automation
- Config Management
- Auto-Scale
- Lab : Deploying Configuration Management Solutions to Azure
  - Deploy a Chef Management Server using ARM
  - Configure Management Server
  - Deploy a VM Scale Set using Chef-Configured VMs
  - Cleanup Subscription