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Course Outline :: AZ-301T04-A::

Module Title   :   **AZ-301T04-A: Designing an Infrastructure Strategy**

Duration   :   **1 day**

About this course

Learn how to Describe DNS and IP strategies for VNETs in Azure, compare connectivity options for ad-hoc and hybrid connectivity, distribute network traffic across multiple loads using load balancers, and design a hybrid connectivity scenario between cloud and on-premise.

Audience profile

Successful Cloud Solutions Architects begin this role with practical experience with operating systems, virtualization, cloud infrastructure, storage structures, billing, and networking.

At course completion

After completing this course, students will be able to:

- Describe various patterns pulled from the Cloud Design Patterns.
- Distribute network traffic across multiple loads using load balancers.
- Design a hybrid connectivity scenario between cloud and on-premise.
- Design an availability set for one or more virtual machines.
- Describe the differences between fault and update domains.
- Author a VM Scale Set ARM template.

Course Outline

Module 1: Application Architecture Patterns in Azure

This module introduces, and reviews common Azure patterns and architectures as prescribed by the Microsoft Patterns & Practices team. Each pattern is grouped into performance, resiliency, and scalability categories and described in the context of similar patterns within the category.

After completing this module, students will be able to:

- Locate and reference the Cloud Design Patterns documentation.
- Locate and reference the Azure Architecture Center.
- Describe various patterns pulled from the Cloud Design Patterns.

Module 2: Building Azure IaaS-Based Server Applications (ADSK)

This module identifies workloads that are ideally deployed using Infrastructure-as-a-Service services in Azure. The module focuses on the VM Scale Sets and Virtual Machine services in Azure and how to best deploy workloads to these services using best practices and features such as Availability Sets.

Lab : Building Azure IaaS-Based Server Applications.

After completing this module, students will be able to:

- Design an availability set for one or more virtual machines.
- Describe the differences between fault and update domains.
- Author a VM Scale Set ARM template.
- Join a virtualized machine to a domain either in Azure or on a hybrid network.

Module 3: Networking Azure Application Components

This module describes the various networking and connectivity options available for solutions deployed on Azure. The module explores connectivity options ranging from ad-hoc connections to long-term hybrid connectivity scenarios. The module also discusses some of the performance and security concerns related to balancing workloads across multiple compute instances, connecting on-premise infrastructure to the cloud and creating gateways for on-premise data.

Lab : Deploying Network Infrastructure for Use in Azure Solutions

After completing this module, students will be able to:

- Describe DNS and IP strategies for VNETs in Azure.
- Compare connectivity options for ad-hoc and hybrid connectivity.
- Distribute network traffic across multiple loads using load balancers.
- Design a hybrid connectivity scenario between cloud and on-premise.

Module 4: Integrating Azure Solution Components Using Messaging Services

This module describes and compares the integration and messaging services available for solutions hosted on the Azure platform. Messaging services described include Azure Storage Queues, Service Bus Queues, Service Bus Relay, IoT Hubs, Event Hubs, and Notification Hubs. Integration services include Azure Functions and Logic Apps.

Lab : Integrating Azure Solution Components using Messaging Services

After completing this module, students will be able to:

- Compare Storage Queues to Service Bus Queues.
- Identify when to use Azure Functions or Logic Apps for integration components in a solution.
- Describe the differences between IoT Hubs, Event Hubs and Time Series Insights.