AZ-101: Azure Administrator, Integration and Security

Overview
This course teaches IT professionals:

How to discover, assess, plan and implement a migration of on-premises resources and infrastructure to Azure. Students will learn how to use Azure Migrate to perform the discovery and assessment phase that is critical to a successful migration. Students will also learn how to use Azure Site Recovery for performing the actual migration of workloads to Azure. The course focuses primarily on using ASR on a Hyper-V infrastructure to prepare and complete the migration process. In addition, students learn about other scenarios, such as migration of VMware vSphere Hypervisor virtual machines and System Center VMM Hyper-V machines.

Prerequisites
Successful Azure Administrators start this role with experience on operating systems, virtualization, cloud infrastructure, storage structures, and networking.

Related Certifications
Microsoft Certified: Azure Administrator Associate

Who Should Attend
This course is for Azure Administrators. Azure Administrators manage the cloud services that span storage, networking, and compute cloud capabilities, with a deep understanding of each service across the full IT lifecycle. They take end-user requests for new cloud applications and make recommendations on services to use for optimal performance and scale, as well as provision, size, monitor and adjust as appropriate. This role requires communicating and coordinating with vendors. Azure Administrators use the Azure Portal and as they become more proficient they use PowerShell and the Command Line Interface.

At Course Completion
After completing this course, students will be able to:
Use Azure Migrate to discover and assess on-premises virtual machine migration to Azure.
Use Azure Site Recovery to migrate Hyper-V infrastructures to Azure.
Review migration strategies for VMWare and System Center VMM virtual machines.
Implement use cases and configuration options for Azure App Services and App Service Environments.
Manage and secure web apps with backup, restore, snapshot, and cloning.
Optimize your web app performance with Scale Up, Scale Out, Autoscale, and Grow out strategies.
Deploy serverless computing features like Azure Functions, Event Grid, and Service Bus.
Implement and configure Azure Load Balancer, Azure Traffic Manager, and Azure Application Gateway.
Implement and configure Site-to-Site VPN connections and ExpressRoute.
Implement and configure Network Watcher and troubleshooting common network issues.
Use Azure RBAC to grant a granular level of access based on an administrator's assigned tasks.
Use Azure Multi-Factor Authentication to configure a strong authentication for users at sign-in.
User Azure AD Privileged Identity Management to configure access rights based on just-in-time administration.

Course Outline

AZ-101T01: Migrate Servers to Azure

Module 1: Managing Azure Active Directory
In this module, you will be introduced to Azure migration projects and specifically Azure Migrate. Azure Migrate will be your tool of choice for automated server discovery and workload sizing. You will step through the process of using Azure Migrate to create a project, create a collector, assess machine readiness, and estimate cost.

Lessons
Overview of Cloud Migration
Azure Migrate: The Process

Module 2: Azure Site Recovery
In this module, you will be introduced to Azure Site Recovery (ASR). ASR will be your primary tool for migrating workloads to Azure. You will learn which scenarios are most appropriate for ASR and the features that the product provides. You will also learn how to use the ASR deployment planner to ensure your infrastructure is ready for migration. Lastly, you will walk through the process of implementing ASR

on a Hyper-V infrastructure.

Lessons
Overview of ASR
Preparing the Infrastructure
Completing the Migration Process

Module 3: Additional Migration Scenarios
In this module, you will complete your study of Azure migration by looking at two different migration scenarios. In the first scenario you will see how to migrate VMware vSphere Hypervisor virtual machines to Azure using ASR. In the second video series we will migrate System Center VMM Hyper-V machines.

Lessons
VMWare Migration
System Center VMM Migration: Video Walkthrough

AZ-101T2: Implementing and Managing Application Services

Module 1: Introducing the Azure App Service Platform
In this module, you will be introduced to the Azure App Services Platform. You will learn about app service plans, web app hosting options, app service scenarios and how to monitor apps. You will also learn about how to isolate apps with App Service Environments.

Lessons
Introducing Azure App Service
App Service Environments

Module 2: Managing and Securing Web Apps
In this module, you will learn how to deploy your app with minimal downtime. You will also learn how to backup, restore, snapshot, and clone your app. Lastly, you will implement security features like authentication options and authentication providers.

Lessons
Deploying Web Apps
Managing Web Apps
App Service Security

Module 3: Scaling and Performance
In this module, you will learn how to ensure your app performs under various workloads. You will learn how to scale up and scale out your app. You will learn how to automatically scale your app and to grow out the app through geo-distribution. Lastly you will learn how CDN provides a way to optimize bandwidth and web traffic.

Lessons
Scale Up and Scale Out
Autoscale and Grow out
Optimizing Bandwidth and Web Traffic

Module 4: Deploying Serverless Computing Solutions
In the module, you will learn what serverless computing is and what it provides. You will implement three serverless computing solutions: Azure Functions, Event Grid, and Service Bus. Azure Functions provide small pieces of code, or "functions," that run in the cloud. Event Grid is a service for managing routing of all events from any source to any destination. Service Bus multi-tenant cloud messaging service that sends information between applications and services.

Lessons
Serverless Computing Concepts
Managing Azure Functions
Managing Event Grid
Managing Service Bus
Managing Logic App

AZ-101T03: Implement Advanced Virtual Networking

Module 1: Distributing Network Traffic
In this module, you will learn about three ways to distribute network traffic: Azure Load Balancer, Azure Traffic Manager, and Azure Application Gateway. The Azure Load Balancer delivers high availability and

network performance to your applications. The Azure Traffic Manager allows you to control the distribution of user traffic to your service endpoints. The Azure Application Gateway is a web traffic load balancer that enables you to manage traffic to your web applications.

Lessons
Overview of Network Traffic Distribution Options
Azure Load Balancer
Azure Traffic Manager
Azure Application Gateway

Module 2: Site Connectivity
In this module, you will learn and implement two ways to connect your virtual networks: Site-to-Site VPN Connections and ExpressRoute. Site-to-Site VPN connections provide secure tunneling for cross-premises and hybrid configurations. ExpressRoute extends your on-premises networks into the Microsoft cloud over a dedicated private connection facilitated by a connectivity provider.

Lessons
Site-to-Site VPN Connections
ExpressRoute

Module 3: Monitoring and Troubleshooting Network Connectivity
In this module, you will learn important skills around troubleshooting virtual network connectivity. The primary tool discussed is Azure Network Watcher. Azure Network Watcher provides IP flow verification, VPN diagnostics, NSG views and flows, and next hop analysis.

Lessons
Introducing Network Watcher
Implementing Network Watcher
Network Troubleshooting Examples

AZ-101T04: Secure Identities

Module 1: Introduction to Identity Protection in Azure
In this module, you'll learn about Role-Based Access Control as the foundation to organizing and managing an organization's administrative access based on the principle of least privilege. You will also review Azure Active Directory concepts, as well as gaining insight into the threat landscape and security risks that are exposed to IT organizations through breach of privileged access.

Lessons
Role-Based Access Control
Azure Active Directory (Refresher)
Protecting Privileged Access in the Environment

Module 2: Using Multi-Factor Authentication for Secure Access
In this module, you'll learn about securing the sign-in process through Multi-Factor Authentication (MFA). You'll learn how MFA works and the differences in implementation between on-premises and cloud scenarios. You'll also learn about using conditional access policies to provide more fine-grained control over apps and resources in your environment.

Lessons
Introducing Multi-Factor Authentication
Implementing MFA

Module 3: Azure AD Privileged Identity Management
In this module, you'll learn how to use Azure Privileged Identity Management (PIM) to enable just-in-time administration and control the number of users who can perform privileged operations. You'll also learn about the different directory roles available as well as newer functionality that includes PIM being expanded to role assignments at the resource level.

Lessons
Getting Started with PIM
PIM Security Wizard
PIM for Directory Roles
PIM for Role Resources