

# Zielbox Microsoft Azure Administrator – AZ-104



## About this Course

### Course Description

This course teaches IT Professionals how to manage their Azure subscriptions, secure identities, administer the infrastructure, configure virtual networking, connect Azure and on-premises sites, manage network traffic, implement storage solutions, create and scale virtual machines, implement web apps and containers, back up and share data, and monitor your solution.

**Level:** Intermediate

### Audience

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.

### Prerequisites

Successful Azure Administrators start this role with experience in virtualization, networking, identity, and storage.

- Understanding on-premises virtualization technologies, including: VMs, virtual networking, and virtual hard disks.
- Understanding network configurations, including TCP/IP, Domain Name System (DNS), virtual private networks (VPNs), firewalls, and encryption technologies.
- Understanding Active Directory concepts, including users, groups, and role-based access control.
- Understanding resilience and disaster recovery, including backup and restore operations.

You can gain the prerequisites and a better understanding of Azure by taking [AZ-104: Prerequisites for Azure Administrators](#). This free online training will give you the experience you need to be successful in this course.

### Expected learning

- Secure identities with Azure Active Directory and users and groups.
- Manage subscriptions, accounts, Azure policies, and Role-Based Access Control.
- Administer Azure using the Resource Manager, Azure portal, Cloud Shell, Azure PowerShell, CLI, and ARM templates.
- Configure virtual networks including planning, IP addressing, Azure DNS, Network Security Groups, and Azure Firewall.
- Configure intersite connectivity solutions like VNet Peering, virtual network gateways, and Site-to-Site VPN connections.
- Manage network traffic using network routing and service endpoints, Azure load balancer, and Azure Application Gateway.
- Implement, manage and secure Azure storage accounts, blob storage, and Azure files with File Sync.
- Plan, create, and scale virtual machines.
- Administer Azure App Service, Azure Container Instances, and Kubernetes.
- Backup files, folders, and virtual machines.
- Monitor the Azure infrastructure with Azure Monitor, Azure alerts, Log Analytics, and Network Watcher.

## Syllabus

The course content includes a mix of content, demonstrations, hands-on labs, reference links, and knowledge check questions.

### Module 01 - Administer Identity

In this module, you will learn how to secure identities with Azure Active Directory, and implement users and groups. This module includes:

- Configure Azure Active Directory
- Configure User and Group Accounts
- Lab 01 - Manage Azure Active Directory Identities

### Module 02 – Administer Governance and Compliance

In this module, you will learn about managing your subscriptions and accounts, implementing Azure policies, and using Role-Based Access Control. This module includes:

- Configure Subscriptions and Accounts
- Configure Azure Policy
- Configure Role-Based Access Control (RBAC)
- Lab 02a - Manage Subscriptions and RBAC
- Lab 02b - Manage Governance via Azure Policy
- Lab 03a - Manage Azure resources by Using the Azure Portal

### Module 03 – Administer Azure Resources

In this module, you will learn about the tools an Azure Administrator uses to manage their infrastructure. This includes the Azure Portal, Cloud Shell, Azure PowerShell, CLI, and Resource Manager Templates. This module includes:

- Configure Resources with Tools
- Use Azure Resource Manager
- Configure Resources with ARM Templates
- Lab 03b - Manage Azure resources by Using ARM Templates
- Lab 03c - Manage Azure resources by Using Azure PowerShell (optional)
- Lab 03d - Manage Azure resources by Using Azure CLI (optional)

## **Module 04 – Administer Virtual Networking**

In this module, you will learn about basic virtual networking concepts like virtual networks and subnetting, IP addressing, Azure DNS, network security groups, and Azure Firewall. This module includes:

- Configure Virtual Networks
- Configure Network Security Groups
- Configure Azure Firewall
- Configure Azure DNS
- Lab 04 - Implement Virtual Networking

## **Module 05 – Administer Intersite Connectivity**

In this module, you will learn about intersite connectivity features including VNet Peering, Virtual Network Gateways, and VPN Gateway Connections. This module includes:

- Configure VNet Peering
- Configure VPN Gateway Connections
- Configure ExpressRoute and Virtual WAN
- Lab 05 - Implement Intersite Connectivity

## **Module 06 – Administer Network Traffic Management**

In this module, you will learn about network traffic strategies including network routing and service endpoints, Azure Load Balancer, and Azure Application Gateway. This module includes:

- Configure Network Routing and Endpoints
- Configure Azure Load Balancer
- Configure Azure Application Gateway
- Lab 06 - Implement Traffic Management

## **Module 07 – Administer Azure Storage**

In this module, you will learn about basic storage features including storage accounts, blob storage, Azure files and File Sync, storage security, and storage tools. This module includes:

- Configure Storage Accounts
- Configure Blob Storage
- Configure Storage Security
- Configure Azure Files and File Sync
- Configure Storage with Tools
- Lab 07 - Manage Azure storage

## **Module 08 – Administer Azure Virtual Machines**

In this module, you will learn about Azure virtual machines including creating, availability and extensions. This module includes:

- Configure Virtual Machines
- Configure Virtual Machine Availability
- Configure Virtual Machine Extensions
- Lab 08 - Manage Virtual Machines

## **Module 09 - Administer PaaS Compute Options**

In this module, you will learn administer computing features like Azure App Service, Azure Container Instances, and Kubernetes. This module includes:

- Configure Azure App Service Plans
- Configure Azure App Services
- Configure Azure Container Instances
- Configure Azure Kubernetes Services
- Lab 09a - Implement Web Apps
- Lab 09b - Implement Azure Container Instances
- Lab 09c - Implement Azure Kubernetes Service

## **Module 10 – Administer Data Protection**

In this module, you will learn about backing up files and folders, and virtual machine backups. This module includes:

- Configure File and Folder Backups
- Configure Virtual Machine Backups
- Lab 10 - Implement Data Protection

## **Module 11 – Administer Monitoring**

In this module, you will learn about monitoring your Azure infrastructure including Azure Monitor, alerting, and log analytics. This module includes:

- Configure Azure Monitor
- Configure Azure Alerts
- Configure Log Analytics

- Configure Network Watcher
- Lab 11 - Implement Monitoring

## AZ-104 Certification Exam

The AZ-104, [Microsoft Azure Administrator](#), certification exam is geared towards Azure Administrator candidates who manage cloud services that span compute, networking, storage, security, and other cloud capabilities within Microsoft Azure. These candidates should have a deep understanding of each service across the full IT lifecycle; including infrastructure services, applications, and environments. They will also be able to make recommendations on services to us for optimal performance and scale, including provision, size, monitor, and adjust Azure resources.

The exam includes five study areas. The percentages indicate the relative weight of each area on the exam. The higher the percentage, the more questions the exam will contain.

AZ-104 Study Areas	Weights
Manage Azure identities and governance	15-20%
Implement and manage storage	15-20%
Deploy and manage Azure compute resources	20-25%
Configure and manage virtual networking	25-30%
Monitor and backup Azure resources	10-15%

## Additional Study Resources

There are a lot of additional resources to help you learn about Azure. We recommend you bookmark these pages.

- [Learn - AZ-104: Prerequisites for Azure administrators](#)
- [Learn - AZ-104: Manage identities and governance in Azure](#)
- [Learn - AZ-104: Implement and manage storage](#)
- [Learn - AZ-104: Deploy and manage Azure compute resources](#)
- [Learn - AZ-104: Configure and manage virtual networks for Azure administrators](#)
- [Learn - AZ-104: Monitor and backup Azure resources](#)
- [Azure Community Support](#)
- [Azure Documentation](#)
- [Microsoft Azure Blog](#)
- [Microsoft Learn Blog](#)

## Module 01 - Administer Identity

In this module, you will learn how to secure identities with Azure Active Directory, and implement users and groups. This module includes:

### Configure Azure Active Directory

## Introduction

### *Scenario*

Transitioning workloads to the cloud involves more than just moving servers, websites, and data. Companies need to think about how to secure those resources and identify authorized users. Your company plans to implement Azure Active Directory and features like Azure AD Join and Self-Service Password Reset.

You need to select an Azure Active Directory edition and implement the required features.

### *Skills measured*

Managing Azure Active Directory features is a part of [Exam AZ-104: Microsoft Azure Administrator](#).

Manage Azure identities and governance (15-20%)

Manage Azure AD objects

- Configure Azure AD Join.
- Configure Self-Service Password Reset.

### *Learning objectives*

In this module, you will learn how to:

- Identify the features and uses of Azure Active Directory.

- Define the main Azure Active Directory components such as identity, account and tenant.
- Compare Active Directory Domain Services to Azure Active Directory.
- Identify features of Azure Active Directory editions.
- Identify features and usage cases for Azure AD Join.
- Identify features and usage cases for Self-Service Password Reset.

## Prerequisites

None

## Describe Azure Active Directory Benefits and Features

Azure Active Directory (Azure AD) is Microsoft's multi-tenant cloud-based directory and identity management service.

## Benefits and features

- **Single sign-on to any cloud or on-premises web app.** Azure Active Directory provides secure single sign-on to cloud and on-premises applications. SSO includes Microsoft 365 and thousands of SaaS applications such as Salesforce, Workday, DocuSign, ServiceNow, and Box.
- **Works with iOS, macOS, Android, and Windows devices.** Users can launch applications from a personalized web-based access panel, mobile app, Microsoft 365, or custom company portals using their existing work credentials. The experience is the same on iOS, macOS, Android, and Windows devices.
- **Protect on-premises web applications with secure remote access.** Access your on-premises web applications from everywhere and protect with multifactor authentication, conditional access policies, and group-based access management. Users can access SaaS and on-premises web apps from the same portal.
- **Easily extend Active Directory to the cloud.** You can connect Active Directory and other on-premises directories to Azure Active Directory in just a few steps. This connection means a consistent set of users, groups, passwords, and devices across both environments.
- **Protect sensitive data and applications.** You can enhance application access security with unique identity protection capabilities. This includes a consolidated view into suspicious sign-in activities and potential vulnerabilities. You can also take advantage of advanced security reports, notifications, remediation recommendations, and risk-based policies.
- **Reduce costs and enhance security with self-service capabilities.** Delegate important tasks such as resetting passwords and the creation and management of groups to your employees. Providing self-service application access and password

management through verification steps can reduce helpdesk calls and enhance security.

**Note:** If you are a Microsoft 365, Azure, or Dynamics CRM Online customer, you might not realize that you are already using Azure AD. Every Microsoft 365, Azure and Dynamics CRM tenant is already an Azure AD tenant. Whenever you want you can start using that tenant to manage access to thousands of other cloud applications Azure AD integrates with.

## Configure User and Group Accounts

### Lab 01 - Manage Azure Active Directory Identities

## Module 02 – Administer Governance and Compliance

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### Configure Subscriptions and Accounts

#### Configure Azure Policy

#### Configure Role-Based Access Control (RBAC)

#### Lab 02a - Manage Subscriptions and RBAC

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### Configure Resources with Tools

#### Use Azure Resource Manager

#### Configure Resources with ARM Templates



Lab 03b - Manage Azure resources by Using ARM Templates

Lab 03c - Manage Azure resources by Using Azure PowerShell (optional)

Lab 03d - Manage Azure resources by Using Azure CLI (optional)

## **Module 04 – Administer Virtual Networking**

In this module, you will learn about basic virtual networking concepts like virtual networks and subnetting, IP addressing, Azure DNS, network security groups, and Azure Firewall. This module includes:

Configure Virtual Networks

Configure Network Security Groups

Configure Azure Firewall

Configure Azure DNS

Lab 04 - Implement Virtual Networking

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Configure VNet Peering

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Configure ExpressRoute and Virtual WAN

Lab 05 - Implement Intersite Connectivity

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Configure Azure Load Balancer

Configure Azure Application Gateway

Lab 06 - Implement Traffic Management

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Configure Storage Accounts

Configure Blob Storage

Configure Storage Security

Configure Azure Files and File Sync

Configure Storage with Tools

Lab 07 - Manage Azure storage

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Configure Virtual Machine Availability

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Lab 08 - Manage Virtual Machines

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Configure Azure App Services

Configure Azure Container Instances

Configure Azure Kubernetes Services

Lab 09a - Implement Web Apps

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Configure Virtual Machine Backups

Lab 10 - Implement Data Protection

## **Module 11 – Administer Monitoring**

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Configure Azure Monitor

Configure Azure Alerts

Configure Log Analytics

Configure Network Watcher

Lab 11 - Implement Monitoring