

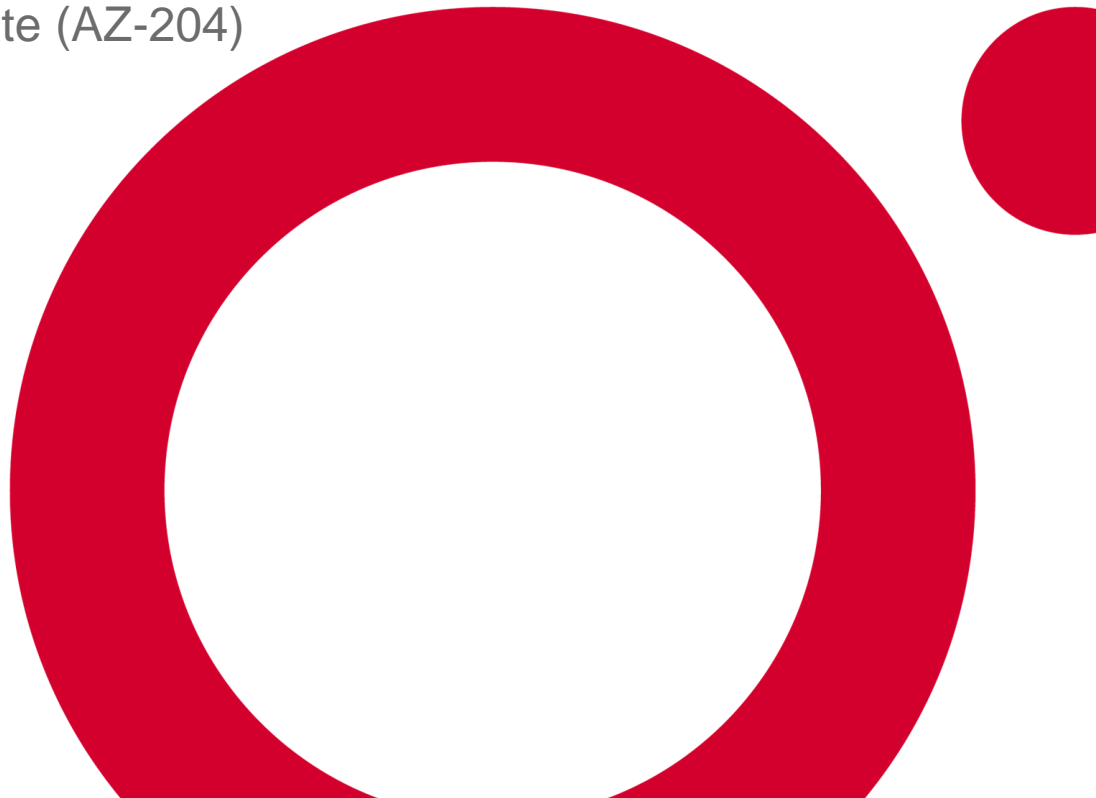


Microsoft Azure Developer Associate (AZ-204)

Crash Course

Developing Solutions for Microsoft Azure

June/2021



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# Reza Salehi

Cloud Consultant and Trainer



@zaalion



# Course Overview

# AZ-204 Skills Measured

Exam AZ-204: Developing Solutions for Microsoft Azure



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# Questions & Resources

- Post questions in the QnA box
- Resources are in the course repository
  - <https://github.com/zaalion/oreilly-az-204>
- Reach out:
  - Twitter: [@zaalion](https://twitter.com/zaalion)



# AZ-204 Candidate Profile

- Professional who
  - have subject matter expertise designing, building, testing, and maintaining cloud applications and services on Microsoft Azure.



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# Azure Data Engineers

- Should have 1-2 years professional development experience
- Experience with Microsoft Azure
- Should have the ability to program in a language supported by Azure



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# AZ-204 Candidates

- Proficiency in
  - Azure SDKs, Azure PowerShell, Azure CLI, data storage options, data connections, APIs, app authentication and authorization, compute and container deployment, debugging, performance tuning, and monitoring.





# AZ-204 Skills Measured

- Skills measured:
  - Develop Azure compute solutions (25-30%)
  - Develop for Azure storage (15-20%)
  - Implement Azure security (20-25%)
  - Monitor, troubleshoot, and optimize Azure solutions (15-20%)
  - Connect to and consume Azure services and third-party services (15-20%)



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# Course Repository

<https://github.com/zaalion/oreilly-az-204>



# Develop Azure Compute Solutions

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# Design Azure Data Storage Solutions

- Implement IaaS solutions
- Create Azure App Service Web Apps
- Implement Azure functions



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# Implement IaaS solutions

- Provision virtual machines (VMs) [see [1](#) [2](#) [3](#)]
- Configure, validate, and deploy ARM templates [see [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#)]
- Configure container images for solutions [see [1](#) [2](#)]
- Publish an image to the Azure Container Registry [see [1](#) [2](#) [3](#) [4](#)]
- Run containers by using Azure Container Instance [see [1](#) [2](#) [3](#)]



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# Create Azure App Service Web Apps

- Create an Azure App Service Web App [see [1](#) [2](#) [3](#)]
- Enable diagnostics logging [see [1](#)]
- Deploy code to a web app [see [1](#) [2](#) [3](#) [4](#)]
- Configure web app settings including SSL, API settings, and connection strings [see [1](#) [2](#)]
- Implement auto scaling rules including scheduled autoscaling and autoscaling by operational or system metrics [see [1](#)]



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# Implement Azure functions

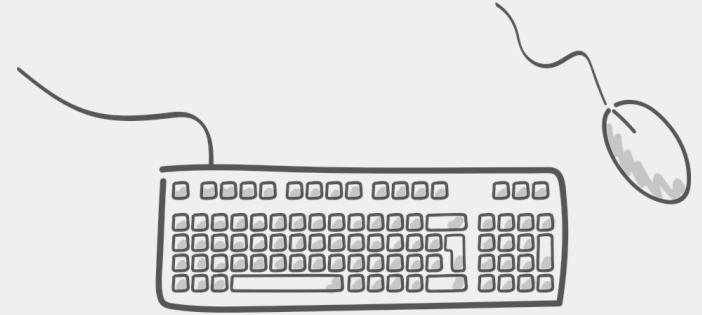
- Create and deploy Azure Functions apps [see [1](#) [2](#) [3](#)]
- Implement input and output bindings for a function [see below]
- Implement function triggers by using data operations, timers, and webhooks  
[see [1](#) [2](#) [3](#) [4](#)]
- Implement Azure Durable Functions [see [1](#) [2](#) [3](#) [4](#) [5](#)]
- Implement custom handlers [see [1](#)]



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# Demo

- Virtual machines (VMs)

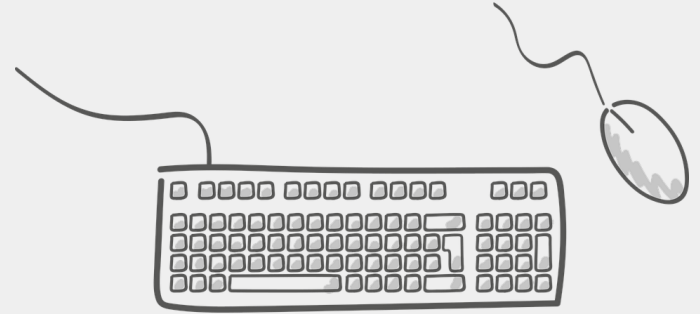




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# Demo

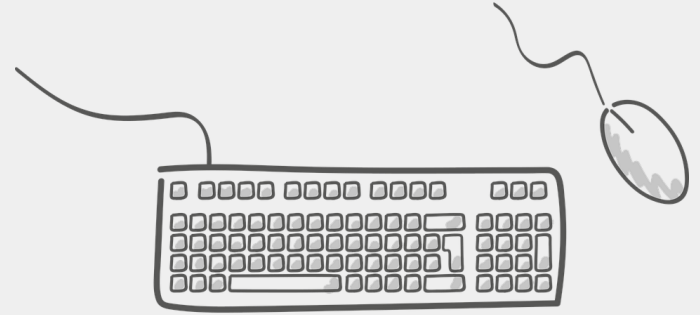
- ARM templates



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# Demo

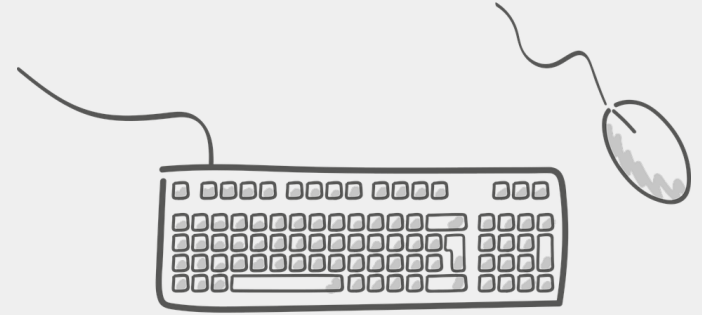
- Containers



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# Demo

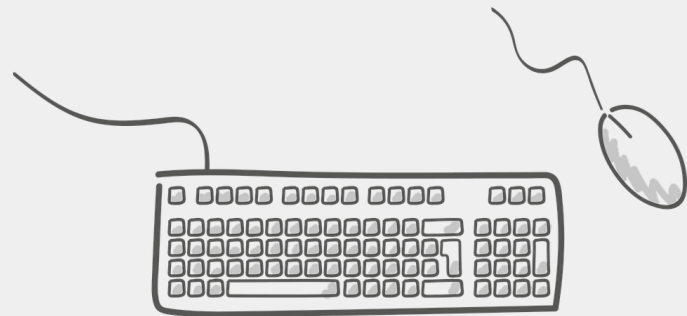
- Azure App Service Web App

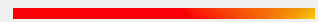


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# Demo

- Azure Functions





# Break



# Develop for Azure Storage

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# Design Azure Data Storage Solutions

- Develop solutions that use Cosmos DB storage
- Develop solutions that use blob storage



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# Develop solutions that use Cosmos DB storage

- Select the appropriate API and SDK for a solution [see [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#)]
- Implement partitioning schemes and partition keys [see [1](#) [2](#)]
- Perform operations on data and Cosmos DB containers [see [1](#) [2](#)]
- Set the appropriate consistency level for operations [see [1](#)]
- Manage change feed notifications [see [1](#)]





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# Develop solutions that use blob storage

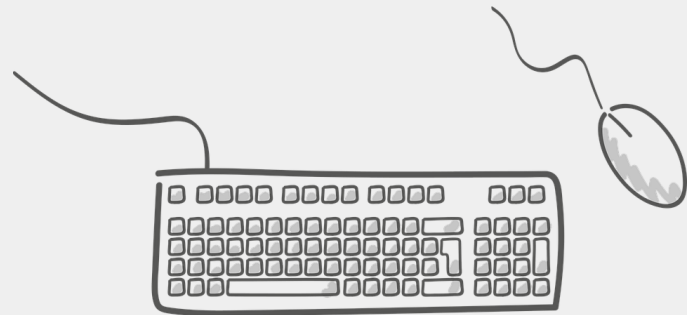
- Move items in Blob storage between storage accounts or containers [see [1](#)]
- Set and retrieve properties and metadata [see [1](#)]
- Perform operations on data by using the appropriate SDK [see [1](#) [2](#)]
- Implement storage policies, and data archiving and retention [see [1](#) [2](#)]



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# Demo

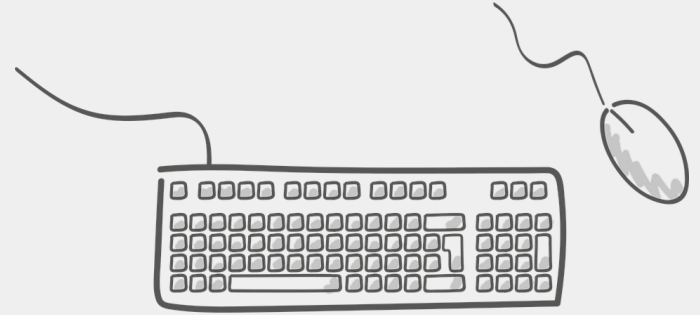
- Cosmos DB



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# Demo

- Blob storage





# Break



# Implement Azure Security

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# Design Azure Data Storage Solutions

- Implement user authentication and authorization
- Implement secure cloud solutions



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# Implement user authentication and authorization

- Authenticate and authorize users by using the Microsoft Identity platform

[see [1](#) [2](#) [3](#) [4](#)]

- Authenticate and authorize users and apps by using Azure Active

Directory [see [1](#) [2](#)]

- Create and implement shared access signatures [see [1](#) [2](#)]



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# Implement secure cloud solutions

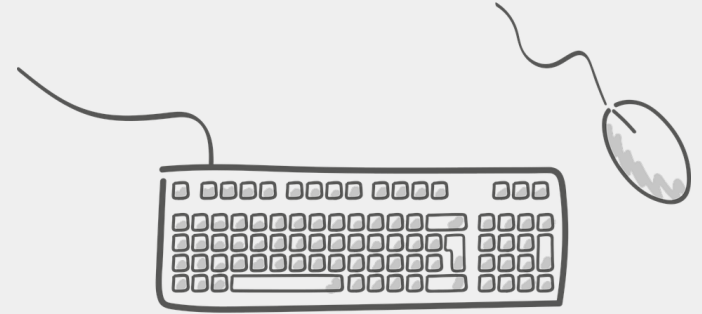
- Secure app configuration data by using App Configuration Azure Key Vault [see [1](#)]
- Develop code that uses keys, secrets, and certificates stored in Azure Key Vault [see [1](#) [2](#) [3](#)]
- Implement solutions that interact with Microsoft Graph [see [1](#) [2](#) [3](#) [4](#)]





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# Demo

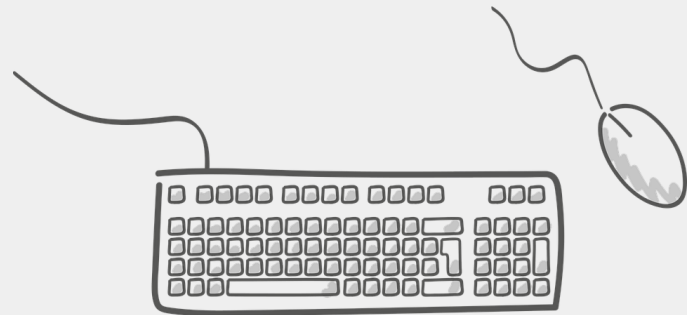


- Authenticate and authorize users and apps using Azure AD



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# Demo

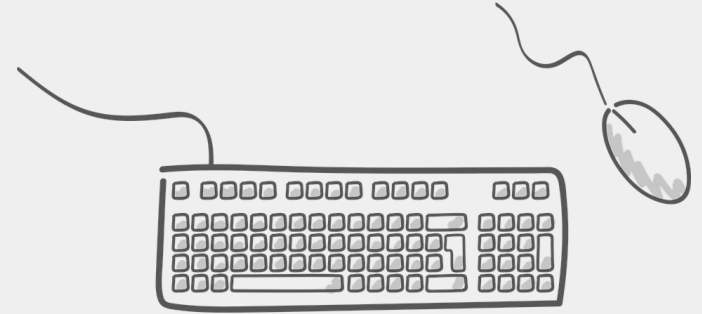


- Shared Access Signatures (Storage Accounts)



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# Demo

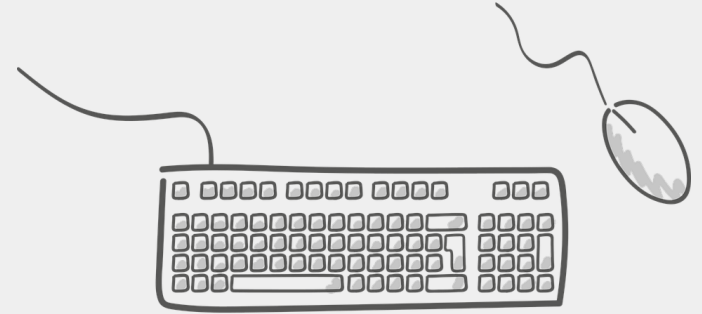


- Azure Key Vault
- Azure Key Vault references (configuration)



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# Demo

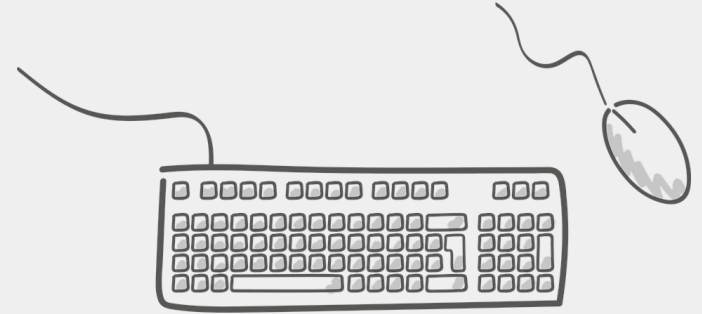


- Authenticate and authorize users using Microsoft Identity platform



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# Demo



- Microsoft Graph



# Monitor, Troubleshoot, and Optimize Azure Solutions

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# Design Azure Data Storage Solutions

- **Integrate caching and content delivery within solutions**
- **Instrument solutions to support monitoring and logging**



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# Integrate caching and content delivery within solutions

- Configure cache and expiration policies [see [1](#) [2](#) [3](#)]
- Configure cache and expiration policies for Azure Redis Cache [see [1](#) [2](#)]
- Implement secure and optimized application cache patterns including data sizing, connections, encryption, and expiration [see [1](#)]





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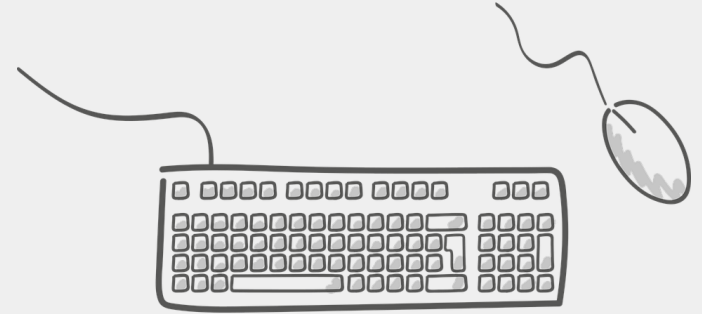
# Instrument solutions to support monitoring and logging

- Configure an app or service to use Application Insights [see [1](#) [2](#) [3](#)]
- Analyze and troubleshoot solutions by using Azure Monitor [see [1](#)]
- Implement Application Insights web tests and alerts [see [1](#) [2](#) [3](#)]



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# Demo

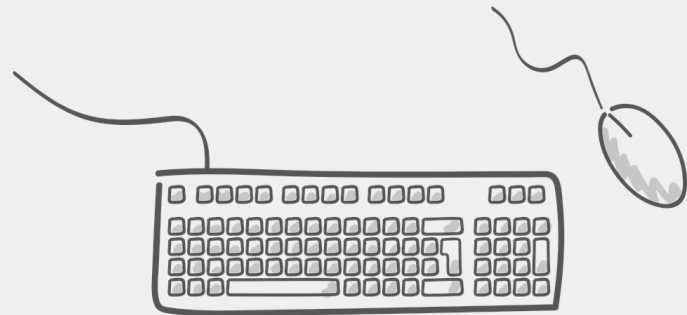


- Azure CDN



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# Demo

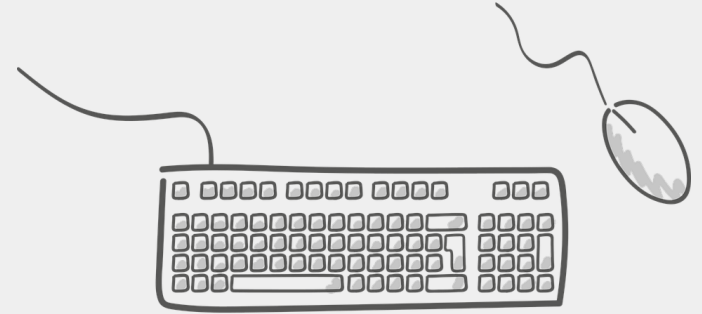


- Azure Redis Cache



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# Demo

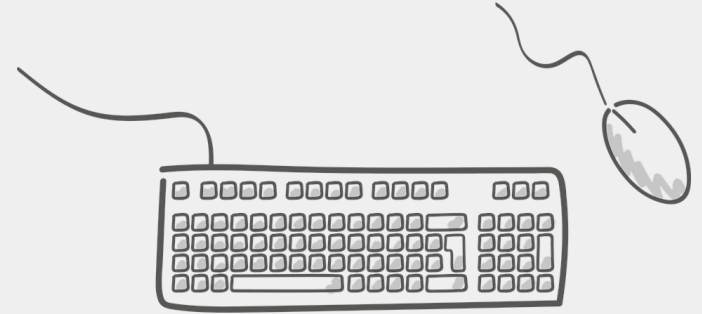


- Application Insights



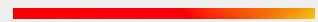
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# Demo



- Azure Monitor





# Break



# **Connect to and Consume Azure Services and Third-party Services**

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# Design Azure Data Storage Solutions

- Implement API Management
- Develop event-based solutions
- Develop message-based solutions





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# Implement API Management

- Create an APIM instance [see [1](#)]
- Configure authentication for APIs [see [1](#)]
- Define policies for APIs [see [1](#)]



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# Develop event-based solutions

- Implement solutions that use Azure Event Grid [see [1](#) [2](#)]
- Implement solutions that use Azure Notification Hubs [see [1](#) [2](#)]
- Implement solutions that use Azure Event Hub [see [1](#) [2](#) [3](#) [4](#)]
- Import OpenAPI definitions [see [1](#)]



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# Develop message-based solutions

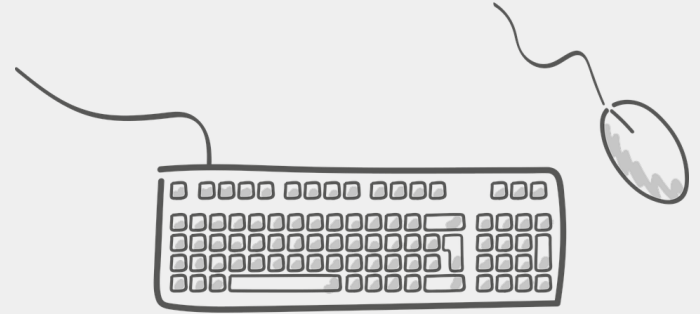
- Implement solutions that use Azure Service Bus [see [1](#) [2](#) [3](#) [4](#) [5](#)]
- Implement solutions that use Azure Queue Storage queues [see [1](#) [2](#)]



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# Demo

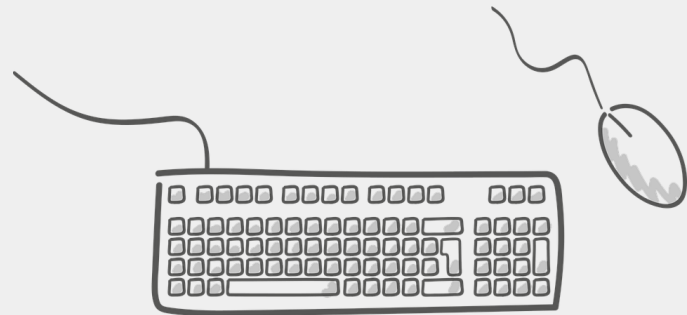
- Azure Event Grid



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# Demo

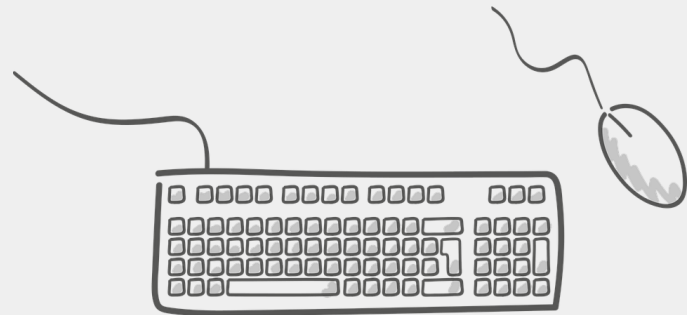
- Azure Event Hub



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# Demo

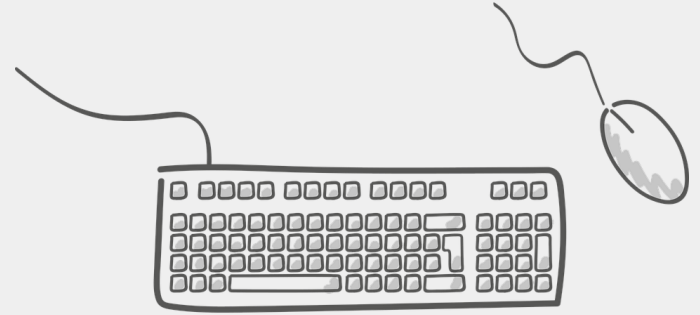
- Azure Service Bus



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# Demo

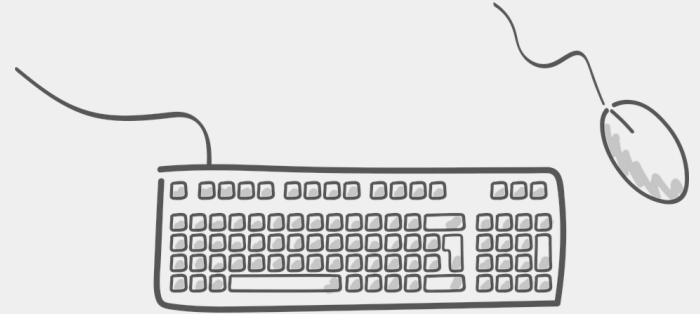
- Azure Queue Storage queues



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# Demo

- Azure Notification Hubs

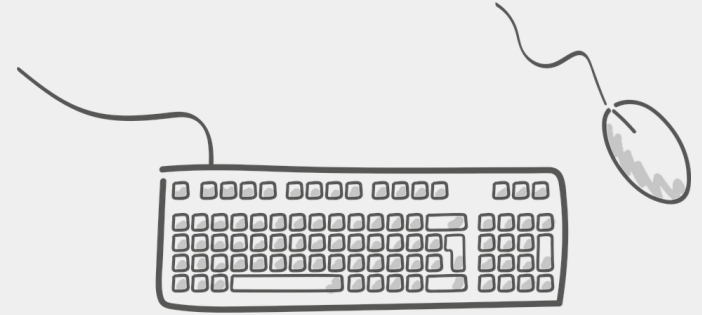




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# Demo

- Implement API Management



# The Exam

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# Questions in AZ-204

- Multiple choice
- Drag and drop
- Scenario based
- There will be hands-on labs



# AZ-204

- Exam AZ-204: <https://docs.microsoft.com/en-us/learn/certifications/exams/az-204>
- Skills measured :  
<https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE4oZ7B>



debugging, performance tuning, and monitoring.

You may be eligible for ACE college credit if you pass this certification exam. See [ACE college credit for certification exams](#) for details.

Part of the requirements for: [Microsoft Certified: Azure Developer Associate](#)

Related exams: none

Important: [See details](#)

[Go to Certification Dashboard](#)

## Schedule exam

### Exam AZ-204: Developing Solutions for Microsoft Azure

United States

**Languages:** English, Japanese, Chinese (Simplified), Korean

**Retirement date:** none

This exam measures your ability to accomplish the following technical tasks: develop Azure compute solutions; develop for Azure storage; implement Azure security; monitor, troubleshoot, and optimize Azure solutions; and connect to and consume Azure services and third-party services.

**\$165 USD\***

Price based on the country in which the exam is proctored.

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## Select exam options

DP-200: Implementing an Azure Data Solution

All fields are required.

How do you want to take your exam? [Exam delivery option descriptions](#)

- ☐ At a local test center
- ☒ At my home or office
- ☐ I have a Private Access Code

Are you going to be testing on this device and network?

If so, perform a quick pre-check to verify compatibility of your device and network before planning to take this exam in your home or office.

If you skip, be sure to do a full system test before test day to avoid lost exam fees and launch delays.

Run pre-check

Next



## System check - Checking your requirements



Microphone

Default - Microphone (SI ▼)



Internet speed



Webcam

Integrated Webcam (0c▼)

Next





# Course Repository

<https://github.com/zaalion/oreilly-az-204>





# Q&A



**O'REILLY<sup>®</sup>**

**Thank you!**

**Reza Salehi**

**@zaalion**

