

AZ-220: Microsoft Azure IoT Developer

- **Formato do curso:** Presencial e Live Training
- **Localidade:** Lisboa
- **Data:** 22 Mai. 2023 a 25 Mai. 2023
- **Preço:** 1510€
- **Horário:** Laboral - 09h00 - 17h00
- **Duração:** 28 horas

This course provides students with the skills and knowledge required to successfully create and maintain the cloud and edge portions of an Azure IoT solution.

The course includes full coverage of the core Azure IoT services such as IoT Hub, Device Provisioning Services, Azure Stream Analytics, Time Series Insights, and more. In addition to the focus on Azure PaaS services, the course includes sections on IoT Edge, device management, monitoring and troubleshooting, security concerns, Azure Digital Twins, and Azure IoT Central.

Destinatários

The Azure IoT Developer is responsible for the implementation and the coding required to create and maintain the cloud and edge portion of an IoT solution. In addition to configuring and maintaining devices by using Azure IoT services and other Microsoft tools, the IoT Developer also sets up the physical devices and is responsible for maintaining the devices throughout the life cycle. The IoT Developer implements designs for IoT solutions, including device topology, connectivity, debugging and security. For Edge device scenarios, the IoT Developer also deploys compute/containers and configures device networking, which could include various edge gateway implementations. The IoT Developer implements designs for solutions to manage data pipelines, including monitoring and data transformation as it relates to IoT. The IoT Developer works with data engineers and other stakeholders to ensure successful business integration. IoT Developers should have a good understanding of Azure services, including data storage options, data analysis, data processing, and the Azure IoT PaaS versus SaaS options. IoT Developers should have basic programming skills in at least one Azure-supported language, including C#, Node.js, C, Python, or Java.

Pré-requisitos

To be successful in this course, learners should have the following:

- Cloud Solution Awareness: Students should have experience using the Azure Portal and a basic understanding of PaaS, SaaS, and IaaS implementations.
 - Software Development Experience: Software development experience is a prerequisite for this course, but no specific software language is required, and the experience does not need to be at a professional level.
 - Data Processing Experience: General understanding of data storage and data processing is a recommended but not required.
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Objetivos

- Implement communication between an IoT device and IoT Hub
 - Implement device enrollment (and disenrollment) using individual and group enrollment processes
 - Develop data insights and implement business integration, including Azure Event Grid, Azure Logic Apps, and Azure Time Series Insights
 - Program for the IoT Edge runtime environment, the tools and processes that are used to develop custom IoT Edge modules, and the support that IoT Edge provides for extended offline scenarios
 - Device management patterns and the capabilities for device management, including bulk device management, that can be implemented using features of IoT Hub and by developing code
 - Create event logs that can be used to help troubleshoot your solution
 - Configure, build, and manage an Azure Digital Twins environment
 - Integrate IoT and Azure Digital Twins solutions
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Programa

Create Azure IoT services in the Azure portal

- Examine the architecture of an IoT solution
- Examine the components of an IoT solution
- Explore the Azure portal
- Explore Azure IoT services

Implement IoT device communication by using the Azure IoT SDKs

- Examine IoT Hub properties
- Examine IoT device lifecycle concepts
- Examine the IoT developer tools
- Explore device configuration and communication

Provision IoT devices at scale by using the Device Provisioning Service

- Examine Device Provisioning Service terms and concepts
- Examine Device Provisioning Service coding tools and access
- Examine device provisioning lifecycle tasks
- Explore individual enrollment tasks
- Explore group enrollment tasks

Implement device message processing and data analytics

- Examine IoT Hub message routing
- Consider message processing options and constraints
- Get started with cloud storage for IoT
- Examine Azure Stream Analytics and Azure Functions
- Explore message processing tasks

Develop data insights and business integrations

- Examine business integration for IoT solutions
- Examine Azure Time Series Insights
- Examine data visualizations with Power BI
- Explore Event Grid integration
- Explore Time Series Insights integration

Deploy Azure IoT Edge devices and modules

- Examine the Azure IoT Edge environment
- Examine IoT Edge device deployment
- Examine IoT Edge gateway device configuration
- Explore IoT Edge module deployment
- Explore IoT Edge gateway configuration

Develop and deploy custom IoT Edge modules

- Examine IoT Edge module development
- Examine offline and local storage capabilities
- Explore custom module development for IoT Edge
- Explore IoT Edge offline support

Manage IoT devices by using IoT Hub and apps

- Examine device management concepts and methods
- Examine device management tools
- Examine approaches to device management at scale
- Explore device management with device twins and direct methods
- Explore IoT Hub automatic device management

Monitor and troubleshoot an IoT solution by using Azure Monitor

- Examine Azure IoT solution monitoring and logging
- Troubleshoot device connections and communication
- Explore IoT Hub monitoring

Enhance IoT solution security by using Microsoft Defender for IoT

- Examine security fundamentals for IoT
- Examine Microsoft Defender for Cloud and Microsoft Defender for IoT

- Examine Microsoft Defender for IoT security agents
- Explore Microsoft Defender for IoT implementation

Extend IoT solutions by using Azure Digital Twins

- Examine the components of an Azure Digital Twins solution
- Examine the Azure Digital Twins solution development tools and processes
- Monitor and troubleshoot ADT
- Explore Azure Digital Twins implementation

Build low touch IoT solutions by using Azure IoT Central

- Intro to IoT Central
- Create and manage Device Templates
- Manage devices in Azure IoT Central
- Configure business integration

Ao concluir com aproveitamento esta formação, cumprindo a percentagem mínima de 70% de assiduidade e após avaliação ao curso, o formando poderá receber o seu Certificado Microsoft de conclusão e o badge digital para partilhar com a sua rede profissional online.