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Sign up

Azure IoT Central training

3 days (21 hours)

Presentation

Our Azure IoT Central training course will enable you to discover and master this turnkey cloud platform for rapid deployment of IoT projects. Without technical complexity, you'll learn how to connect, monitor and manage connected objects via an intuitive interface, while harnessing the power of Azure.

You'll start with IoT basics and the creation of an IoT Central application, then be guided through device modeling: telemetry, controls, properties and simulation. You'll learn how to manage an IoT project from A to Z, even if you're not a developer.

You'll see how to connect real sensors, visualize their data in real time, create dashboards and set up automated alerts. You'll also understand how to integrate Azure IoT Central with other cloud services and business tools.

Security is not forgotten: access management, secure flows, device authentication... you'll adopt best practices throughout the course. Finally, you'll learn how to diagnose, maintain and upgrade an IoT solution in production.

As with all our training courses, this one will be presented with the latest updates on the Azure ecosystem.

Objectives

- Understand the fundamentals of IoT and the role of Azure IoT Central in deploying connected solutions
- Master IoT Central's tools and interfaces for connecting, monitoring and controlling objects connected
- Define automated rules, trigger business actions, and integrate IoT Central with external services

- Apply best security practices: access management, device authentication, data encryption and supervision
- Diagnose breakdowns, maintain equipment remotely and manage fleet evolution connected on a global scale
- Integrate Azure IoT Central into a business environment, ensuring the reliability, security and scalability of deployed solutions

Target audience

- Developer
- Innovation Manager
- IT project manager
- System administrators

Prerequisites

- Have a Microsoft Azure account

Azure IoT Central training program

Introduction to IoT and Azure IoT Central

- Definition of the Internet of Things (IoT)
- Typical IoT solution architecture
- Typical applications (industry, healthcare, agriculture, logistics, etc.)
- What is Azure IoT Central?
- Difference with Azure IoT Hub
- Adapted scenarios for IoT Central
- Platform overview
- Key components: devices, templates, dashboards, rules

Creating and configuring an IoT Central application

- Creating an IoT Central resource
- Application template selection
- Access to the IoT Central portal
- Interface structure
- User and role management

Device Templates management

- Telemetry: data sent (e.g. temperature, speed, etc.)
- Properties: static or configurable data
- Commands: remote actions (e.g. reboot)

- Integrated simulation tool
- Live data verification
- Data flow debugging
- Versioning a model
- Template lifecycle management

Connecting physical devices

- Login via registration key (SAS)
- Connection via DPS (Device Provisioning Service)
- Secure connection via certificates
- Azure IoT SDK for various languages (Python, C, Node.js...)
- Using a Raspberry Pi or ESP32
- Sending data via MQTT or HTTP

Data visualization and analysis

- Widget creation (graphs, gauges, lists, etc.)
- Customization by user or role
- Dashboard by device model
- Displaying telemetry values
- Data history exploration
- Last activity" function

Automations and alerts

- Creating telemetry rules
- Conditions
- Triggered actions
- Sending e-mails or SMS
- Integration with Power Automate
- Webhooks or Logic Apps for external triggers

Security and access management

- Azure Active Directory (AAD)
- Assigning user roles
- Secure TLS / MQTT
- Access key rotation
- Principle of least privilege
- Device isolation by type or location

Data integration and export

- Azure Data Explorer
- Azure Stream Analytics

- Export to Azure Blob Storage or Event Hub
- Authentication via tokens
- Data retrieval and device control via API

Monitoring, diagnostics and maintenance

- Connection status
- Error logging
- Interaction history
- Analysis of recurring faults
- Setting intelligent alert thresholds
- Firmware deployment
- Software version control

Large-scale deployment and best practices

- Mass provisioning
- Segmentation by group, model or location
- Naming and versioning device models
- Centralize logs and alerts
- Documenting architecture and workflows
- Azure IoT Central pricing model
- Cost reduction through data optimization
- Economic monitoring strategies

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical inputs from the trainer supported by examples and

brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.