

## Microsoft Azure IoT Developer

### Détails

- Code : AZ-220
- Durée : 4 jours ( 28 heures )

#### Public

- Consultants IT
- Developers IT
- Développeurs

#### Pré-requis

- IoT Developers should have basic programming skills in at least one Azure-supported language, including C#, Node.js, C, Python, or Java.

#### Objectifs

- see course description

### Programme

#### 1 – Create Azure IoT services in the Azure portal

- Module 1: Examine the architecture of an IoT solution
- Module 2: Examine the components of an IoT solution
- Module 3: Explore the Azure portal
- Module 4: Explore Azure IoT services

#### 2 – Implement IoT device communication by using the Azure IoT SDKs

- Module 1: Examine IoT Hub properties
- Module 2: Examine IoT device lifecycle concepts
- Module 3: Examine the IoT developer tools
- Module 4: Explore device configuration and communication

#### 3 – Provision IoT devices at scale by using the Device Provisioning Service

- Module 1: Examine Device Provisioning Service terms and concepts
- Module 2: Examine Device Provisioning Service coding tools and access
- Module 3: Examine device provisioning lifecycle tasks
- Module 4: Explore individual enrollment tasks
- Module 5: Explore group enrollment tasks

#### 4 – Implement device message processing and data analytics

- Module 1: Examine IoT Hub message routing
- Module 2: Consider message processing options and constraints
- Module 3: Get started with cloud storage for IoT
- Module 4: Examine Azure Stream Analytics and Azure Functions
- Module 5: Explore message processing tasks

#### 5 – Develop data insights and business integrations

- Module 1: Examine business integration for IoT solutions
- Module 2: Examine Azure Time Series Insights
- Module 3: Examine data visualizations with Power BI
- Module 4: Explore Event Grid integration
- Module 5: Explore Time Series Insights integration

#### 6 – Deploy Azure IoT Edge devices and modules

- Module 1: Examine the Azure IoT Edge environment
- Module 2: Examine IoT Edge device deployment
- Module 3: Examine IoT Edge gateway device configuration
- Module 4: Explore IoT Edge module deployment
- Module 5: Explore IoT Edge gateway configuration

#### 7 – Develop and deploy custom IoT Edge modules

- Module 1: Examine IoT Edge module development
- Module 2: Examine offline and local storage capabilities
- Module 3: Explore custom module development for IoT Edge
- Module 4: Explore IoT Edge offline support

#### 8 – Manage IoT devices by using IoT Hub and apps

- Module 1: Examine device management concepts and methods
- Module 2: Examine device management tools
- Module 3: Examine approaches to device management at scale
- Module 4: Explore device management with device twins and direct methods
- Module 5: Explore IoT Hub automatic device management

#### 9 – Monitor and troubleshoot an IoT solution by using Azure Monitor

- Module 1: Examine Azure IoT solution monitoring and logging
- Module 2: Troubleshoot device connections and communication
- Module 3: Explore IoT Hub monitoring

#### 10 – Enhance IoT solution security by using Microsoft Defender for IoT

- Module 1: Examine security fundamentals for IoT
- Module 2: Examine Microsoft Defender for Cloud and Microsoft Defender for IoT
- Module 3: Examine Microsoft Defender for IoT security agents
- Module 4: Explore Microsoft Defender for IoT

implementation

## 11 – Extend IoT solutions by using Azure Digital Twins

- Module 1: Examine the components of an Azure Digital Twins solution
- Module 2: Examine the Azure Digital Twins solution development tools and processes
- Module 3: Monitor and troubleshoot ADT

- Module 4: Explore Azure Digital Twins implementation

## 12 – Build low touch IoT solutions by using Azure IoT Central

- Module 1: Intro to IoT Central
- Module 2: Create and manage Device Templates
- Module 3: Manage devices in Azure IoT Central
- Module 4: Configure business integration

### Modalités

- **Type d'action** :Acquisition des connaissances
- **Moyens de la formation** :Formation présentielle – 1 poste par stagiaire – 1 vidéo projecteur – Support de cours fourni à chaque stagiaire
- **Modalités pédagogiques** :Exposés – Cas pratiques – Synthèse
- **Validation** :Exercices de validation – Attestation de stages