

Updated on 29/11/2023

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# IBM Bluemix Training: Watson & Hyperledger

4 days (28 hours)

## Presentation

IBM Bluemix, like Microsoft Azure, is a secure cloud for creating and managing applications, advanced data and Artificial Intelligence tools, backed up by extensive industry expertise to support your digital transition. IBM Bluemix and Watson offer advanced Artificial Intelligence tools, and help to reduce the costs of your digital transition. The last section is dedicated to the management and security of Connected Objects or IoT using Blockchain.

## Objectives

- Discover the state of the art and the challenges of new cloud architectures and artificial intelligence solutions
- Setting up an IBM Watson application and using microservices with Bluemix
- Using IoT and blockchain through Hyperledger

## Target audience

- Developer, Lead Developer, IT Analyst, Infrastructure & Cloud Architect, CEO, CTO

## Prerequisites

- Basic knowledge of architecture and programming

## Further information

- We also recommend the following training courses:
  - [Industry 4.0: Apache Kudu, Impala and Flink](#)
  - [Machine Learning with Spark](#)
  - [Deep Learning with TensorFlow](#)

## Our complete IBM Bluemix training program

### Day 1: Towards the digital transition with IBM Watson and Bluemix

Audience: CEO, Division Manager, Architect, Developer Knowledge required: none

#### Overview of the digital transition

- Definition and origins
- Interests and challenges
- Manage changing needs at lower cost

#### Solution study

- The usual fears and the well-founded ones.
- What are the most important criteria to take into account?
- Risks of migrating: Financial and Legal

#### State-of-the-art solutions

- An overview of the main market players
- Overview of the different types
- What they have in common and what they differ from

#### Understand and analyze proposed systems

- System description
- Understanding proposed solutions
- Understanding existing systems
- Analyze the benefits of the digital transition

### Day 2 and 3: Artificial Intelligence, Cloud Architecture, Application Development

## IBM Watson and Bluemix overview

- Introducing IBM Watson and Bluemix
- Feature overview
- Advantages and disadvantages of IBM Watson and Bluemix

## Integrating artificial intelligence into applications

- Explore and understand the various IBM Watson APIs
- Discover the fundamentals of APIs
- Understanding the purpose behind each API
- Setting up a development environment to train and use APIs
- Create and test your own service instances
- Train Watson APIs and deploy them in your application
- Learn how to use APIs to build applications

## Using IBM Watson and Bluemix

- Understanding Bluemix architecture
- Bluemix deployment models
- Creating and managing organizations

## Data management

- Database (IBM DB2, PostgreSQL, Cloudant)
- NoSql database
- Object storage
- Data transformation

## IBM Bluemix creation and deployment

- First application
- Understand a few additional concepts
- Updating your application
- Application load flow control and management
- Application monitoring and management

## Microservices-based application development

- Introduction to microservices
- Evolving application architectures
- Micro-services component architecture
- Microservices integration integration
- Re factoring microservices

## Bluemix security services

- Security services presentation
- Access Trail security service
- Creating the Access Trail security service instance
- Working with Security Service
- Creating a Single Sign On service instance
- Configuring identity sources in Single Sign On
- Create an application to use the Single Sign On authentication service

## Day 4: IoT & Blockchain

Public: Analysts, Architects, Engineers, Managers Knowledge required: Architecture and Programming

This training begins with an overview of IoT and Blockchain concepts. It then helps you develop your own device on the IBM Watson IoT platform and create your first IoT solution using Watson and Intel Edison. You'll learn more about Blockchain technology and its use cases. You'll also work with the Hyperledger framework and develop your own Blockchain network. You'll learn how to design your solution architecture so you can create your own integrated Blockchain and IoT solution. Finally I'll explain how to implement end-to-end Blockchain solutions with connected objects using the IBM Cloud Platform.

- Understanding the key roles of IoT in today's market
- Learn more about the IBM Watson IoT platform
- Create devices, gateways and applications connected to the platform
- Explore the fundamentals of Blockchain
- Defining the right use cases for Blockchain
- Discover the Hyperledger Fabric and Composer frameworks
- Developing an IBM Watson IoT application using Intel Edison
- Integrating IoT with the Blockchain platform

## Companies concerned

This training 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 on entry to training complies with Qualiopi quality criteria. As soon as

On final registration, 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 forthcoming course, 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 input from the trainer, supported by examples, with 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.