



Developing on AWS with AWS Jam

PowerPackage

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With this PowerPackage you book the three-day Developing on AWS course together with an AWS Jam Day.

This course is designed to help participants design and build secure, reliable and scalable applications based on AWS. This course will cover basic concepts and fundamental programming for developing applications in AWS. We will show you how to work with AWS code libraries, SDKs and IDE toolkits to efficiently develop and deploy code on the AWS platform.

The final day features an AWS Jam, a fun event where teams compete for points by completing a series of best practice challenges based on the concepts covered in the course. You will be able to experience a wide range of AWS services in a series of real-world scenarios that represent common operational and troubleshooting tasks. The end result is to develop, improve and validate your skills in the AWS Cloud through real-world problem solving, exploring new services and features, and understanding how they work together.

Course Contents

- Module 1: Course Overview
- Module 2: Building a Web Application on AWS
- Module 3: Getting Started with Development on AWS
- Module 4: Getting Started with Permissions
- Module 5: Getting Started with Storage
- Module 6: Processing Your Storage Operations
- Module 7: Getting Started with Databases
- Module 8: Processing Your Database Operations
- Module 9: Processing Your Application Logic
- Module 10: Managing the APIs
- Module 11: Building a Modern Application
- Module 12: Granting Access to Your Application Users
- Module 13: Deploying Your Application
- Module 14: Observing Your Application
- Module 15: Course Wrap-up
- AWS Jam

You have access to the labs for another 14 days after the course. This way you can repeat exercises or deepen them individually.

E-Book You will receive the original course documentation by Amazon Web Services as an e-book.

Target Group

This course is intended for experienced:

- Software developers
- Solution architects
- IT workers who want to improve their developing skills using AWS Services

Prerequisites

We recommend that attendees of this course have:

- AWS Technical Essentials
- Working knowledge of AWS core services
- Programming experience in any one of the following languages:
 - o Python
 - o .NET
 - o Java

Practical lab exercises with the AWS environment are part of the training. In order to be able to carry out these successfully, an internet-capable notebook (Windows, Linux, MacOS) is a prerequisite.

Important: Therefore, please bring your notebook to the course! If this is not possible, please contact us in advance.

This Course in the Web



You can find the up-to-date information and options for ordering under the following link:

www.experteach-training.com/go/JMDA

Reservation

On our Website, you can reserve a course seat for 7 days free of charge and in a non-committal manner. This can also be done by phone under +49 6074/4868-0.

Guaranteed Course Dates

To ensure reliable planning, we are continuously offering a wide range of guaranteed course dates.

Your Tailor-Made Course!

We can precisely customize this course to your project and the corresponding requirements.

Training	Prices, excl. of V.A.T.	
Classes in Germany	4 Days	€ 2,485
Online Training	4 Days	€ 2,485
Date/course venue	Course language German	
28/05-31/05/24 <input type="checkbox"/> Online		

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Table of Contents

Developing on AWS with AWS Jam – PowerPackage

Module 1: Course Overview

Logistics
Student resources
Agenda
Introductions

Module 2: Building a Web Application on AWS

Discuss the architecture of the application you are going to build during this course

Explore the AWS services needed to build your web application
Discover how to store, manage, and host your web application

Module 3: Getting Started with Development on AWS

Describe how to access AWS services programmatically
List some programmatic patterns and how they provide efficiencies within AWS SDKs and

AWS CLI

Explain the value of AWS Cloud9

Module 4: Getting Started with Permissions

Review AWS Identity and Access Management (IAM) features and components permissions
to support a development environment
Demonstrate how to test AWS IAM permissions
Configure your IDEs and SDKs to support a development environment
Demonstrate accessing AWS services using SDKs and AWS Cloud9

Lab 1: Configure the Developer Environment

Connect to a developer environment
Verify that the IDE and the AWS CLI are installed and configured to use the application profile
Verify that the necessary permissions have been granted to run AWS CLI commands
Assign an AWS IAM policy to a role to delete an Amazon S3 bucket

Module 5: Getting Started with Storage

Describe the basic concepts of Amazon S3
List the options for securing data using Amazon S3
Define SDK dependencies for your code
Explain how to connect to the Amazon S3 service
Describe request and response objects

Module 6: Processing Your Storage Operations

Perform key bucket and object operations
Explain how to handle multiple and large objects
Create and configure an Amazon S3 bucket to host a static website
Grant temporary access to your objects
Demonstrate performing Amazon S3 operations using SDKs

Lab 2: Develop Solutions Using Amazon S3

Interact with Amazon S3 programmatically using AWS SDKs and the AWS CLI
Create a bucket using waiters and verify service exceptions codes
Build the needed requests to upload an Amazon S3 object with metadata attached
Build requests to download an object from the bucket, process data, and upload the object back to the bucket
Configure a bucket to host the website and sync the source files using the AWS CLI
Add IAM bucket policies to access the S3 website.

Module 7: Getting Started with Databases

Describe the key components of DynamoDB
Explain how to connect to DynamoDB
Describe how to build a request object
Explain how to read a response object
List the most common troubleshooting exceptions

Module 8: Processing Your Database Operations

Develop programs to interact with DynamoDB using AWS SDKs
Perform CRUD operations to access tables, indexes, and data
Describe developer best practices when accessing DynamoDB
Review caching options for DynamoDB to improve performance
Perform DynamoDB operations using SDK

Lab 3: Develop Solutions Using Amazon DynamoDB

Interact with Amazon DynamoDB programmatically using low-level, document, and high level APIs in your programs
Retrieve items from a table using key attributes, filters, expressions, and paginations
Load a table by reading JSON objects from a file
Search items from a table based on key attributes, filters, expressions, and paginations
Update items by adding new attributes and changing data conditionally
Access DynamoDB data using PartiQL and object-persistence models where applicable

Module 9: Processing Your Application Logic

Develop a Lambda function using SDKs
Configure triggers and permissions for Lambda functions
Test, deploy, and monitor Lambda functions

Lab 4: Develop Solutions Using AWS Lambda Functions

Create AWS Lambda functions and interact programmatically using AWS SDKs and AWS

CLI

Configure AWS Lambda functions to use the environment variables and to integrate with other services

Generate Amazon S3 pre-signed URLs using AWS SDKs and verify the access to bucket

objects

Deploy the AWS Lambda functions with .zip file archives through your IDE and test as needed

Invoke AWS Lambda functions using the AWS Console and AWS CLI

Module 10: Managing the APIs

Describe the key components of API Gateway
Develop API Gateway resources to integrate with AWS services
Configure API request and response calls for your application endpoints
Test API resources and deploy your application API endpoint
Demonstrate creating API Gateway resources to interact with your application APIs

Lab 5: Develop Solutions Using Amazon API Gateway

Create RESTful API Gateway resources and configure CORS for your application
Integrate API methods with AWS Lambda functions to process application data
Configure mapping templates to transform the pass-through data during method integration
Create a request model for API methods to ensure that the pass-through data format complies with application rules
Deploy the API Gateway to a stage and validate the results using the API endpoint

Module 11: Building a Modern Application

Describe the challenges with traditional architectures
Describe the microservice architecture and benefits
Explain various approaches for designing microservice applications
Explain steps involved in decoupling monolithic applications
Demonstrate the orchestration of Lambda Functions using AWS Step

Functions

Module 12: Granting Access to Your Application Users

Analyze the evolution of security protocols
Explore the authentication process using Amazon Cognito
Manage user access and authorize serverless APIs
Observe best practices for implementing Amazon Cognito
Demonstrate the integration of Amazon Cognito and review JWT tokens

Lab 6: Capstone – Complete the Application Build

Create a Userpool and an Application Client for your web application using

Add new users and confirm their ability to sign-in using the Amazon Cognito CLI

Configure API Gateway methods to use Amazon Cognito as an authorizer

Verify JWT authentication tokens are generated during API Gateway calls

Develop API Gateway resources rapidly using a Swagger importing strategy

Set up your web application frontend to use Amazon Cognito and API Gateway

configurations and verify the entire application functionality

Module 13: Deploying Your Application

Identify risks associated with traditional software development practices

Understand DevOps methodology

Configure an AWS SAM template to deploy a serverless application
Describe various application deployment strategies

Demonstrate deploying a serverless application using AWS SAM

Module 14: Observing Your Application

Differentiate between monitoring and observability
Evaluate why observability is necessary in modern development and key components

Understand CloudWatch's part in configuring the observability
Demonstrate using CloudWatch Application Insights to monitor applications

Demonstrate using X-Ray to debug your applications

Lab 7: Observe the Application Using AWS X-Ray

Instrument your application code to use AWS X-Ray capabilities
Enable your application deployment package to generate logs
Understand the key components of an AWS SAM template and deploy your application

Create AWS X-Ray service maps to observe end-to-end processing behavior of your application

Analyze and debug application issues using AWS X-Ray traces and annotations

Module 15: Course Wrap-up

Course overview
AWS training courses
Certifications
Course feedback

AWS Jam

Participate in team-based challenges in a real AWS environment
Compete with your colleagues in a gamified, hands-on learning experience
Apply your learning from the course on various AWS services

