



Course Outline

WSO2 API Manager 4.1.0

Micro Integrator Profile

Developer Fundamentals

[Email: training@wso2.com]

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Executive Summary

WSO2 API Manager Developer Fundamentals - Micro Integrator Profile is a course aimed at training Software Engineers on the features of the product as well as the underlying concepts and standards. The scope of this course will be limited to using all the features of the product to provide a solution related to integration without having to extend the product.

Duration

8 sessions - online (4-hours each)
4 days - onsite (8-hours per day)

Training Type

WSO2 product training and hands-on session

Target Audience

Software Engineers

Complexity

Beginner/Intermediate

Prerequisites

Open Standards

Review the standards for:

- OAuth 2.0 [1]

[1] <http://oauth.net/2/>

Course Agenda

WSO2 API Manager 4.1.0 Developer Fundamentals - Micro Integrator Profile

Session 1

Introduction to Micro Integrator

- Working with Micro Integrator
- Introduction to decentralized/centralized architectures
- Introduction to WSO2 Integration Studio (Tooling)
- WSO2 API Manager 4.1.0 (Micro Integrator) Key Features
- Building Blocks
- Common EIPs (Message Router, Message Splitter/Aggregator, Content Enricher)

Lab: *Getting Started with WSO2 Micro Integrator*

Lab: *Getting Started with WSO2 Integration Studio*

Session 2

Triggering Messages in Micro Integrator

- APIs and Proxy Services
 - **Lab:** *Configuring a REST API*
 - **Lab:** *Configuring a Proxy service*
- Working with Tasks
 - **Lab:** *Periodic Execution of Integration Processes*
- Inbound Endpoints
 - **Lab:** *Using Inbound Endpoint*

Session 3

Mediating Messages

- Message Routing
 - **Lab:** *Message Routing*
- Message Transformation
 - **Lab:** *Message Transformation*
- Service Orchestration
 - **Lab:** *Service Orchestration*

Session 4

- Using Templates
 - **Lab:** *Reusing Mediation Sequences*
- Asynchronous Messaging
 - **Lab:** *Asynchronous Messaging*

- Protocol Switching
 - **Lab:** *Protocol Switching*

Session 5

SaaS and B2B Integration

- Connecting to a SAAS Application
 - **Lab:** *Connecting Web APIs/Cloud Services*
- Connecting B2B
 - **Lab:** *Connecting to a File System*

Data Integration

- Data Integration capabilities
- Creating data services
- **Lab:** *Data Integration*

Debugging Mediation

- Debugging Mediation
 - **Lab:** *Debugging Mediation*
- Handle errors in WS02 Micro Integrator

Session 6

Building Unit Tests for your artifacts

- Unit Tests
- Mock Services
- Local and Remote Testing
 - **Lab:** *Using the Unit Testing Framework*

Management

- CLI Tool
- Micro Integrator Dashboard
- Management API
 - **Lab:** *Managing Artifacts using the CLI and Micro Integrator Dashboard*
- User Management
 - **Lab:** *Managing users*

Session 7

Artifact Deployment

- Composite Applications (C-Apps)
- Microservices Deployment
 - Docker Exporter
 - Kubernetes Exporter

- Kubernetes Operator
 - Helm Resources
 - **Lab:** *Run WS02 Microintegrator on Containers (Using Operator)*
- Artifact Governance
- Introduction to CI/CD

Session 8

Observability

- Cloud-Native Observability
 - **Lab:** *Cloud-Native Observability on a VM*
 - **Lab:** *Cloud-Native Observability on K8s*
- Classical Observability
 - **Lab:** *Classic Observability*
- Logs
- Monitoring messages

Mediation Best Practices

- Designing the solution
- Using templates
- Using Mediators
- Using Endpoints

Infrastructure Requirements

Hardware Requirement

During the lab session attendees are required to deploy the created samples in multiple middleware products. Participants are required to have a workstation with at least 6GB of memory to run the samples smoothly.

Software Requirement

Java

Oracle Java 1.8.x [1]

Other requirements [2]

[1] <http://www.oracle.com/technetwork/java/javase/downloads/index.html>

[2] https://ei.docs.wso2.com/en/4.1.0/micro-integrator/setup/installation/install_prerequisites/

WSO2 Products Used

[WSO2 API Manager](#)

Other Products Used

[cURL](#)

Download and install the following for Observability:

- Grafana [1]
 - Prometheus [2]
 - FluentBit [3]
 - Grafana Loki [4]
 - Jaeger [5]
-
- Download and install MySQL for user management [6].
 - Set up JAVA on your computer to run the back-end services used for protocol switching exercises.

- [1] <https://grafana.com/grafana/download/7.1.1>
- [2] <https://prometheus.io/download/>
- [3] <https://fluentbit.io/download/>
- [4] <https://github.com/grafana/loki/blob/v1.5.0/docs/installation/local.md>
- [5] <https://www.jaegertracing.io/download/>
- [6] <https://www.mysql.com/downloads/>