Anypoint Platform Development: Mule 4 for Mule 3 Users

Summary
This course is for experienced Mule 3 developers who want to quickly uplevel their skills to Mule 4. The course is hands-on and focuses on what’s new and/or different in Mule 4 and Studio 7.

This course prepares students to take the MuleSoft Certified Developer – Level 1 (Mule 4) exam or the MuleSoft Certified Developer – Level 1 (Mule 4) DELTA exam. Upon successful completion of the course, students automatically receive two exam attempts.

Duration
3 days (in-person or online)

Objectives
At the end of this course, students should be able to:
• Build, configure, and debug Mule 4 applications using Anypoint Studio 7.
• Use and apply the new Mule 4 event model with the new reactive, self-tuning, streaming, and non-blocking Mule 4 runtime.
• Apply new Mule 4 connector operations and features anywhere in a flow and configure new Mule 4 connector listeners as flow triggers.
• Apply new DataWeave 2 code everywhere as the new Mule 4 expression language.
• Transform complex data schema using DataWeave 2.
• Use the new Mule 4 error handling framework and the new Try scope.
• Use the new Batch Job and Batch Aggregator scopes inline in flows.

Audience
Mule 3 users who have mastery of the content covered in the Anypoint Platform Development: Fundamentals (Mule 3) course

Prerequisites
Experience developing Mule 3 applications as demonstrated by one of the following:
• Passing the MuleSoft Certified Developer - Integration and API Associate (Mule 3) exam
• Completion of the Anypoint Platform Development: Fundamentals (Mule 3) course
• Passing the MuleSoft Certified Developer - Integration Professional (Mule 3) exam
Setup requirements

- A computer with:
  - At least 8-16 GB available RAM (16 highly recommended), 2GHz CPU, and 10GB available storage
  - A minimum screen resolution of 1024x768
- Internet access to ports 80 and 3306 (with > 5Mbps download and > 2Mbps upload)
- An Anypoint Platform account
- Anypoint Studio 7.7.0 or later with embedded Mule 4.3 runtime
- Advanced REST Client (or any other REST client application)
- A Salesforce Developer account (not a standard account) and API Access token
- (Optional) If no internet access to ports 80 and 3306, OpenJDK 8 (not 11 or a later version)

Get a detailed setup document here.

Outline

PART 1: Building applications with Anypoint Studio

Module 1: Accessing and modifying Mule 4 events

- Log event data
- Debug Mule applications
- Read and write event properties
- Write expressions with the DataWeave expression language
- Create variables

Module 2: Structuring Mule 4 applications

- Create applications composed of multiple flows and subflows
- Pass events between flows using asynchronous queues
- Encapsulate global elements in separate configuration files
- Specify application properties in a separate properties file and use them in the application
- Describe the purpose of each file and folder in a Mule project
- Define and manage application metadata

Module 3: Consuming web services in Mule 4

- Consume web services that have an API (and connector) in Anypoint Exchange
- Consume RESTful web services
- Consume SOAP web services
- Pass parameters to SOAP web services using the Transform Message component
- Transform data from multiple services to a canonical format
Module 4: Controlling event flow in Mule 4

- Multicast events
- Route events based on conditions
- Validate events

Module 5: Handling errors in Mule 4

- Handle messaging errors at the application, flow, and processor level
- Handle different types of errors, including custom errors
- Use different error scopes to either handle an error and continue execution of the parent flow or propagate an error to the parent flow
- Set the success and error response settings for an HTTP Listener
- Set reconnection strategies for system errors

Module 6: Writing DataWeave 2.0 transformations

- Write DataWeave expressions for basic XML, JSON, and Java transformations
- Write DataWeave transformations for complex data structures with repeated elements
- Define and use global and local variables and functions
- Use DataWeave functions
- Coerce and format strings, numbers, and dates
- Define and use custom data types
- Call Mule flows from DataWeave expressions
- Store DataWeave scripts in external files

PART 2: Building applications to synchronize data

Module 7: Triggering flows in Mule 4

- Read and write files
- Trigger flows when files are added, created, or updated
- Trigger flows when new records are added to a database table
- Schedule flows to run at a certain time or frequency
- Persist and share data in flows using the Object Store
- Publish and consume JMS messages

Module 8: Processing records in Mule 4

- Process items in a collection using the For Each scope
- Process records using the Batch Job scope
- Use filtering and aggregation in a batch step
PART 3: Migrating Applications with Mule Migration Assistant

Module 9: Migrating Mule 3 Applications

- Migrate a Mule 3 application using Mule Migration Assistant (MMA)
- Describe the scope and limitations of MMA
- Read and understand MMA migration reports
- Refactor a migrated application to make best use of Mule 4 features