

Anypoint Platform Development: Fundamentals (Mule 4)

Summary

This instructor-led course is for developers and architects who want to get hands-on experience using Anypoint Platform to build APIs and integrations. In the first part, students use Anypoint Platform discover, consume, design, build, deploy, manage, and govern APIs. In the second part, students focus on using Mule and Anypoint Studio to build applications for use as API implementations and/or integrations.

The course includes a voucher to take a new MuleSoft Certified Developer exam for Mule 4 to be released later this year.

Duration

5 days in-person or online

Objectives

At the end of this course, students should be able to:

- Build an application network using API-led connectivity and Anypoint Platform.
- Use Anypoint Platform to discover, consume, design, build, deploy, manage, and govern APIs.
- Connect to databases, files, web services, SaaS applications, JMS queues, and more.
- Add application logic, handle errors, and transform data using DataWeave.
- Structure applications to facilitate development and deployment.
- Handle batch data processing.

Prerequisites

- Experience with an object-oriented language
- A basic understanding of data formats such as XML, CSV, and JSON
- A basic understanding of typical integration technologies such as HTTP, JMS, JDBC, REST, and SOAP

Setup requirements

- A computer with at least 4GB available RAM, 2GHz CPU, and 10GB available storage and a minimum screen resolution of 1024x768
- Internet access to ports 80, 3306, and 61616 (with > 5Mbps download and > 2Mbps upload)
- The latest version of Firefox or Chrome or Internet Explorer 10 or newer

- An Anypoint Platform account
<http://anypoint.mulesoft.com>
- JDK 1.8
<http://www.oracle.com/technetwork/java/javase/downloads/index.html>
- Anypoint Studio 7 with embedded Mule 4.1 runtime
<https://www.mulesoft.com/lp/dl/studio>
- Advanced REST Client (or some other REST client application)
<http://install.advancedrestclient.com>
- A Salesforce Developer account (NOT a standard account) and API Access token
<https://developer.salesforce.com/en/signup>

A detailed setup document can be downloaded from here: <https://training.mulesoft.com/downloads>.

Outline

PART 1: Building Application Networks with Anypoint Platform

Module 1: Introducing Application Networks and API-Led Connectivity

- Explain what an application network is and its benefits
- Describe how to build an application network using API-led connectivity
- Explain what web services and APIs are
- Explore API directories and portals
- Make calls to secure and unsecured APIs

Module 2: Introducing Anypoint Platform

- Identify all the components of Anypoint Platform
- Describe the role of each component in building application networks
- Navigate Anypoint Platform
- Locate APIs and other assets needed to build integrations and APIs in Anypoint Exchange
- Build basic integrations to connect systems using flow designer

Module 3: Designing APIs

- Define APIs with RAML, the Restful API Modeling Language
- Mock APIs to test their design before they are built
- Make APIs discoverable by adding them to Anypoint Exchange
- Create API portals for developers to learn how to use APIs

Module 4: Building APIs

- Use Anypoint Studio to create flows graphically
- Build, run, and test Mule applications
- Use a connector to connect to databases
- Use the graphical DataWeave editor to transform data
- Create RESTful interfaces for applications from a RAML file
- Connect API interfaces to API implementations

Module 5: Deploying and Managing APIs

- Describe the options for deploying Mule applications
- Deploy Mule applications to CloudHub
- Use API Manager to create and deploy API proxies to CloudHub
- Restrict access to API proxies

PART 2: Building Applications with Anypoint Studio

Module 6: Accessing and Modifying Mule Events

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

Module 7: Structuring Mule Applications

- Create and reference flows and subflows
- Pass messages between flows using the Java Virtual Machine (VM) transport
- Use properties in Mule applications so they can be easily moved between environments
- Encapsulate global elements in separate configuration files
- Explore the files and folder structure of Mule projects and deployable archives

Module 8: Consuming Web Services

- Consume RESTful web services with and without parameters
- Consume RESTful web services that have RAML definitions
- Consume SOAP web services
- Use DataWeave to pass parameters to SOAP web services

Module 9: Controlling Event Flow

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

Module 10: Handling Errors

- Handle messaging errors in flows
- Handle errors for one or more event processors instead of at the flow level
- Create and use global error handlers
- Specify a default error handler

Module 11: Writing DataWeave Transformations

- Write DataWeave expressions for basic and complex XML, JSON, and Java transformations
- Use DataWeave operators and coerce and format strings, numbers, and dates
- Define and use custom data types
- Simplify and abstract DataWeave code into reusable functions and modules
- Call Mule flows from DataWeave transformations

Module 12: Connecting to Additional Resources

- Connect to JMS queues
- Connect to files
- Connect to SaaS applications
- Poll resources

Module 13: Processing Records

- Use the For Each scope to process items in a collection in series
- Use the Batch scope to process individual records in parallel
- Use batch jobs to synchronize data from legacy databases to SaaS applications