Anypoint Platform Operations: Customer-Hosted Runtimes

Summary

This course is for all operations and administration personnel, developers, and architects who want to get hands-on experience managing and monitoring customer-hosted Mule runtimes and applications (on-premises or in a private cloud) with Anypoint Runtime Manager (whether on the cloud or using the Private Cloud Edition).

Duration

2 days (in-person or online)

Objectives

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

- Describe the Mule runtime architecture.
- Install, configure, run, tune, and scale Mule runtimes.
- Deploy Mule applications to Mule runtimes.
- Use Anypoint Runtime Manager to manage, monitor, and analyze Mule runtimes and Mule applications.
- Scale and tune Mule runtimes and Mule applications.
- Automate administration tasks.

Prerequisites

- A knowledge of system administration and server commands
- 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 4GB available storage
    - A minimum screen resolution of 1024x768
- Unrestricted internet access to port 80 (with > 5Mbps download and > 2Mbps upload)
- Unrestricted WebSocket access (ws:// and wss://) to ports 80 and 433
- The latest version of Chrome, Safari, Firefox, or Edge

- [OpenJDK 8](#) (not 11 or a later version)
- [Mule 4.3 runtime](#)
- [Anypoint Platform CLI tool](#)
- [Advanced REST Client](#) (or any other REST client application)
- (Optional) [VisualVM](#)
- (Optional) [Cygwin utilities for Windows](#)
- (Optional) [Microsoft Process Explorer for Windows](#)

Get a detailed setup document [here](#).

Outline

PART 1: Administering Mule Runtimes and Mule Applications

Module 1: Introducing customer-hosted Mule runtimes

- Describe typical Mule deployment architectures and solutions
- Identify infrastructure options to host Mule runtimes
- Install and start Mule runtimes
- Deploy Mule applications to Mule runtimes

Module 2: Managing Mule applications and Mule domain projects

- Inspect and manage deployed Mule applications
- Deploy Mule domain projects to Mule runtimes
- Deploy and manage multiple Mule applications in the same shared Mule domain

Module 3: Managing and monitoring Mule runtimes

- Configure and manage Mule runtimes and licenses
- Locate and interpret Mule runtime log files
- Monitor Mule runtimes with JMX
- Create secure Mule runtime administration connections

Module 4: Tuning and troubleshooting Mule runtimes

- Tune the JVM for Mule runtimes
- Dump a Mule runtime's heap memory and threads
- Analyze and troubleshoot Mule runtimes

PART 2: Administering with Anypoint Runtime Manager

Module 5: Managing users and resources

- Organize users and resources with business groups, environments, teams, and permissions
- Administer Anypoint Platform users
- Create and manage Anypoint Platform permissions for teams of users

Module 6: Managing Mule runtimes and Mule applications

- Register customer-hosted Mule runtimes with Anypoint Runtime Manager using Runtime Manager Agent
- Deploy Mule applications to customer-hosted Mule runtimes using Runtime Manager
- Manage Mule applications with Runtime Manager
- Align servers and server groups with SDLC environments

Module 7: Configuring Mule applications

- Configure a Mule application for deployment
- Configure a Mule runtime to use external properties files
- Use properties files with encrypted values
- Configure environment-specific properties files

Module 8: Monitoring and analyzing Mule runtimes and Mule applications

- View Mule runtime and Mule application dashboards
- Configure alerts for Mule runtimes and Mule applications
- Control Mule application flows
- Monitor and analyze business events generated by Mule applications
- Configure third-party monitoring and analysis plugins

Module 9: Meeting performance and reliability goals

- Distinguish between Mule application performance tuning and scaling goals, options, and solution architectures
- Create and manage Mule runtime clusters
- Deploy Mule applications to Mule runtime clusters
- Test load balancing and failover behavior of applications deployed to Mule runtime clusters

Module 10: Automating administration tasks

- Automate admin tasks with the Anypoint CLI tool
- Automate admin tasks with the Anypoint Access Management, CloudHub, and Runtime Manager REST APIs