

COURSE ABSTRACT

Merative SPM for Developers (Customization) 7.X

9D74G

Course Description

This training provides learners with an understanding of customizing SPM out-of-the-box (OOTB) solutions using the Merative Social Program Management (SPM) Application Development Environment (ADE).

The first part of the course describes the approach that SPM uses for customizing OOTB applications compliantly. The main part of the course describes how to customize client and server artifacts, including source code and non-source code artifacts. The final part of the course outlines how REST and web services are used for integrating with external applications and how custom features can be implemented using events, deferred processes, and batch processes.

During the course, learners will perform impact analysis on OOTB applications and implement compliant customizations.

General Information

Delivery Method: Classroom (ILT) and self-paced with lab.

Audience: This course is intended primarily for developers and technical architects who will work on SPM implementation projects. The course is also useful for anyone who needs a technical understanding of the SPM Platform, including testers and support engineers.

Topics: The course covers the following topics:

- Interpreting the SPM Enterprise Reference Model and processing class architecture
- Impact analysis using product documentation
- Customizing client and server artifacts compliantly
- Integrating with external applications using REST APIs and web services

- Implementing events, deferred processes, and batch processes
- Gathering troubleshooting data

Learning Objectives: After completing the course, learners should be able to:

- Describe the approaches for customizing SPM artifacts
- Perform impact analysis to determine the changes required for customizations
- Customize out-of-the-box artifacts compliantly:
 - Client artifacts
 - Non-source code server artifacts
 - Modeled application classes
 - Non-modeled application classes
- Describe how web services and REST APIs can be used for real-time integration
- Outline how to develop custom events, deferred processes, and batch jobs

Prerequisites: Before taking this course, students should have completed the following course:

- *Merative SPM for Developers (ADE) 7.X*

Duration: 40 Hours (5 days ILT)

Skill Level: Intermediate

Version: This course was last updated for SPM V7. The course covers core topics that do not change much from one version of SPM to the next.

Notes

The course duration gives learners an estimate of how much time they need to allocate to the course. The course duration does not specify the actual time required to complete the course, which varies by learner. The course agenda shows the schedule for a classroom (ILT) delivery. Learners taking this course in a self-paced environment should allow more time for exercises.

Course Agenda

Unit 1 - Getting Started with SPM Customization

Lesson 1 – Course Introduction

Duration: 15 minutes

Learning objectives: After completing this lesson, learners should be able to:

- List the course objectives
- Outline the course format and resources
- List sources of help

Lesson 2 – Customization Overview

Duration: 30 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Outline the typical stages of the SPM implementation lifecycle
- Describe the approaches for modifying SPM to meet customer requirements
- Outline the techniques for customizing source code and non-source code artifacts

Exercise 1 – Reference Customization Resources

Duration: 30 minutes

Exercise 2 – Define a Custom Component

Duration: 40 minutes

Lesson 3 – Analyzing the Reference Application

Duration: 20 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Interpret the SPM Reference Models by using entity-relationship diagrams (ERDs)
- Describe how the Cúram Analysis Document Generator (CADG) is used to analyze artifacts in the reference application

Exercise 3 – Run the Reference Application

Duration: 20 minutes

Exercise 4 – Analyze the Reference Application

Duration: 60 minutes

Unit 2 – Customizing Client Artifacts

Lesson 1 – Customizing Pages, Navigation, and Properties

Duration: 30 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Describe how to customize UIM pages
- Describe how to customize application navigation files
- Describe how to customize additional client artifacts, including property files, images, and style sheets
- Describe the purpose of the key client configuration files and how to customize them

Exercise 5 – Customize Pages and Navigation

Duration: 50 minutes

Lesson 2 – Customizing Widgets

Duration: 45 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Describe how domain plug-ins can be used for custom data conversion and sorting
- Outline the options for customizing widgets
- Describe the purpose of the Custom Widget Development Framework (CWDF)
- Briefly describe how to define pods

Exercise 6 – Customize Widgets

Duration: 60 minutes

Unit 3 – Customizing Server Artifacts

Lesson 1 – Customizing Non-Source Code Artifacts

Duration: 40 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Describe the approach for customizing the main server configuration files
- Describe how to customize message files, code tables, and data manager files
- Describe how to enable and disable configurable validations

Exercise 7 – Customize Server Artifacts (Non-Source Code)

Duration: 90 minutes

Lesson 2 – The Processing Class Architecture

Duration: 20 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Describe the processing class architecture and the purpose of each of its constituent layers

Exercise 8 – Navigate the Processing Class Architecture (Modeled Classes)

Duration: 60 minutes

Lesson 3 – Customizing Modeled Classes

Duration: 40 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Outline the techniques for customizing source code artifacts:
 - Structs
 - Façade and process classes
 - Entity classes
 - Domain Definitions
- Describe the purpose of subclassing and the significance of the Replace Superclass option

Exercise 9 – Customize Modeled Classes

Duration: 170 minutes

Unit 4 – Customizing Non-Modeled (Handcrafted) Classes

Lesson 1 – Introduction to Handcrafted Interfaces

Duration: 45 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Outline how service layer classes developed using PI differ from those developed using the classic development approach
- Explain the purpose of the entity and entity DAO interfaces
- List the components that use handcrafted service layer interfaces
- Explain why Google Guice is used in SPM

Exercise 10 – Navigate the Processing Class Architecture (Non-Modeled Classes)

Duration: 60 minutes

Lesson 2 – Customizing using Strategy

Duration: 30 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Interpret the SPM documentation to select the appropriate approach for customizing handcrafted interfaces
- List the techniques for customizing handcrafted interfaces
- Outline how handcrafted implementations can be replaced using the Strategy pattern

Exercise 11 – Customize Handcrafted Service Layer Classes Using Strategy

Duration: 70 minutes

Lesson 3 – Customizing using Events

Duration: 30 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Provide an overview of event handling in components developed using PI
- Explain how business and persistence events are used for customizing
- Describe how to add attributes to PI entities

- Describe how to customize service layer implementations using the Event/Listener pattern

Exercise 12 – Customize Handcrafted Service Layer Classes Using Events

Duration: 70 minutes

Lesson 4 – Referencing Handcrafted APIs

Duration: 20 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Identify where handcrafted service layer APIs can be called from
- Compare the approach for accessing data using the classic approach and accessing data using the PI approach

Exercise 13 – Reference Handcrafted Service Layer Classes

Duration: 65 minutes

Unit 5 – Additional Tools for Customization

Lesson 1 – Integrating using Web Services and REST

Duration: 50 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Describe the support that SPM provides for web services
- Outline the steps for creating inbound and outbound web services in SPM
- Outline the steps for developing REST APIs in SPM

Exercise 14 – Add a Simple REST API (Optional)

Duration: 90 minutes

Lesson 2 – Additional Processing Types

Duration: 60 minutes

Learning objectives: After completing this lesson, learners should be able to:

- List the processing types supported by SPM
- Outline the operation of deferred processes
- Describe how to implement deferred processes
- Explain how to use EVX events to implement the Observer pattern
- Describe the support for batch processing in SPM

Exercise 15 – Use Additional Processing Types (Optional)

Duration: 60 minutes

Lesson 3 – Troubleshooting and Resources

Duration: 30 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Outline the SPM support process and tools
- Describe how SPM releases are identified
- Describe the purpose of deprecation reporting

Exercise 16 – Gather Troubleshooting Data

Duration: 45 minutes

Unit 6 – Course Conclusion

Lesson 1– Case Study

Duration: 10 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Describe the purpose and approach for completing the case study

Exercise 17 – Case Study: Customize Service Supplier

Duration: 300 minutes

Lesson 2 – IBM SPM V7.X Developer Certification

Duration: 20 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Describe the structure of the test
- List the topics that are examined
- Outline tips for preparing for the test
- Describe how to arrange the test
- View sample questions

Lesson 3 – Course Summary

Duration: 5 minutes

Learning objectives: After completing this lesson, learners should be able to:

- Review the objectives of the course
- List the next options for SPM training