Description: Description: 5300_IBMpos

Developing Rule Solutions in IBM Operational Decision Manager V8.7

WB392 (Classroom)

ZB392 (Self-paced)

Course description

This course introduces developers to IBM Operational Decision Manager V8.7. You learn the concepts and skills that you need to design, develop, and integrate a business rule solution with Operational Decision Manager.

The course begins with an overview of Operational Decision Manager, which is composed of two main environments: Decision Server for technical users and Decision Center for business users. The course outlines the collaboration between development and business teams during project development. Through instructor-led presentations and hands-on lab exercises, you learn about the core features of Decision Server, which is the primary working environment for developers. You design a business rule application, and work with the object models that are required to author and execute rule artifacts. You gain experience with rule deployment and execution within various types of client applications. You work extensively with Rule Execution Server and learn how you can integrate decision services within an enterprise environment.

In addition, you become familiar with rule authoring so that you can support business users to set up and customize the rule authoring and validation environments. You also learn how to use Operational Decision Manager features to support decision governance.

The lab environment for this course uses Windows Server 2008 R2 Standard Edition.

For information about other related courses, see the IBM Training website:

**ibm.com**/training

General information

Delivery method

Classroom or self-paced virtual classroom (SPVC)

Course level

ERC 2.0

Product and version

IBM Operational Decision Manager version 8.7

Audience

This course is designed for application developers.

Learning objectives

After completing this course, you should be able to:

* Describe the benefits of implementing a decision management solution with Operational Decision Manager
* Identify the key user roles that are involved in designing and developing a decision management solution, and the tasks that are associated with each role
* Describe the development process of building a business rule application and the collaboration between business and development teams
* Set up and customize the business object model (BOM) and vocabulary for rule authoring
* Implement the execution object model (XOM) that enables rule execution
* Orchestrate rule execution through ruleflows
* Author rule artifacts to implement business policies
* Debug business rule applications to ensure that the implemented business logic is error-free
* Set up and customize the testing and simulation environment for business users
* Package and deploy rulesets to testing and production environments
* Integrate decision services for managed execution within an enterprise environment
* Build client applications to invoke ruleset execution
* Test, monitor, and audit execution of decision services
* Work with Operational Decision Manager features that support decision governance, including the decision governance framework for decision services

Prerequisites

Before taking this course, you should have:

* Experience with the Java programming language and object-oriented concepts
* Experience with Java Platform, Standard Edition (Java SE)
* Knowledge of Java Platform, Enterprise Edition (Java EE)
* Basic knowledge of Extensible Markup Language (XML)

Duration

5 days

Skill level

Intermediate

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| Classroom (ILT) setup requirements | |
| Processor | Intel i7-3630QM processor or faster |
| GB RAM | 8 |
| GB free disk space | 120 |
| Network requirements | None |
| Other requirements | None |

Notes

The following unit and exercise durations are estimates, and might not reflect every class experience. If the course is customized or abbreviated, the duration of unchanged units will probably increase.

This course is an update of the following previous course:

* WB390, *Developing Rule Solutions in IBM Operational Decision Manager V8.6*

Course agenda

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| Course introduction  Duration: 30 minutes |

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| Unit 1. Introducing IBM Operational Decision Manager V8.7  Duration: 2 hours | |
| Overview | This unit introduces IBM Operational Decision Manager and describes the advantages of implementing a decision management solution in your organization. |
| Learning objectives | After completing this unit, you should be able to:   * Explain the benefits of using Operational Decision Manager * Explain how business rules and business events work together * Identify the need for governance * Map the various roles that are involved in a decision management solution to roles in your organization * Identify the tasks that are performed on various Operational Decision Manager modules, and which user roles perform them |

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| Exercise 1. Operational Decision Manager in action  Duration: 1 hour and 15 minutes | |
| Overview | In this exercise, you see how the Operational Decision Manager modules work together to provide a comprehensive Business Rule Management System (BRMS) across the business and development environments. |
| Learning objectives | After completing this exercise, you should be able to:   * Explain the general workflow in Operational Decision Manager for working with business rule projects * Identify the Operational Decision Manager tools that apply to your role in your organization |

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| Unit 2. Getting started with business rule application development  Duration: 1 hour and 45 minutes | |
| Overview | This unit teaches you how to develop a business rule application with Operational Decision Manager, and how to get started with rule projects. |
| Learning objectives | After completing this unit, you should be able to:   * Identify the responsibilities and tasks of the developer role * Set up a rule project in Rule Designer * Share and synchronize rule projects across the business and development environments |

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| Exercise 2. Setting up rule projects  Duration: 1 hour and 30 minutes | |
| Overview | This exercise shows you how to set up rule applications in Rule Designer. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a rule project * Set up the rule project to reference the execution object model (XOM) * Generate a business object model (BOM) and a default vocabulary * Create ruleset parameters * Create rule packages * Synchronize rule projects with Decision Center |

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| Unit 3. Programming with business rules  Duration: 1 hour | |
| Overview | This unit describes the rule engine and how rule execution works. It also describes the rule execution modes. |
| Learning objectives | After completing this unit, you should be able to:   * Describe a rule engine * Describe rule execution * Explain rule execution modes and execution principles |

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| Unit 4. Developing object models  Duration: 1 hour and 15 minutes | |
| Overview | This unit teaches you how to design the object models upon which rules are written and executed, and how to create the vocabulary that is required to author business rules. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the association between the BOM and the vocabulary that is used in rules * Define the XOM * Define the BOM-to-XOM mapping * Use refactoring features to maintain consistency between the BOM and XOM |

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| Exercise 3. Working with the BOM  Duration: 30 minutes | |
| Overview | This exercise describes how to create a BOM from a XOM. |
| Learning objectives | After completing this exercise, you should be able to:   * Generate a BOM from an existing XOM * Verbalize the BOM with natural-language vocabulary |

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| Exercise 4. Refactoring  Duration: 30 minutes | |
| Overview | This exercise describes how to manage inconsistencies within the project as the XOM, BOM, and vocabulary evolve. |
| Learning objectives | After completing this exercise, you should be able to:   * Refactor vocabulary changes * Manage inconsistency issues after updating the XOM and BOM |

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| Unit 5. Orchestrating ruleset execution  Duration: 45 minutes | |
| Overview | This unit teaches you how to orchestrate rule execution through ruleflows. You also learn about rule engine execution modes. |
| Learning objectives | After completing this unit, you should be able to:   * Design ruleflows to organize the execution of the rule artifacts in a ruleset * Configure how rules are selected for execution at run time * Explain rule engine execution modes |

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| Exercise 5. Working with ruleflows  Duration: 30 minutes | |
| Overview | This exercise teaches you how to create a ruleflow. |
| Learning objectives | After completing this exercise, you should be able to:   * Describe the parts of a ruleflow * Create a ruleflow * Orchestrate rule selection and execution through the ruleflow |

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| Unit 6. Authoring rules  Duration: 2 hours and 15 minutes | |
| Overview | This unit teaches you how to author rule artifacts that implement the business logic and policies of a business rule application. |
| Learning objectives | After completing this unit, you should be able to:   * Use the various rule editors and languages to author rule artifacts * Define the objects that rule artifacts manipulate |

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| Exercise 6. Exploring action rules  Duration: 30 minutes | |
| Overview | This exercise teaches you how action rules are written. |
| Learning objectives | After completing this exercise, you should be able to:   * Identify the parts of an action rule * Explain the difference between using automatic variables or rule variables |

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| Exercise 7. Authoring action rules  Duration: 1 hour and 30 minutes | |
| Overview | This exercise teaches you how to author action rules. |
| Learning objectives | After completing this exercise, you should be able to:   * Use the Intellirule editor and Guided editor to author action rules * Use rule variables, automatic variables, and ruleset parameters in rule statements |

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| Exercise 8. Authoring decision tables and decision trees  Duration: 1 hour | |
| Overview | This exercise teaches you how to author decision tables and decision trees. |
| Learning objectives | After completing this exercise, you should be able to:   * Use the decision table editor to create a decision table * Use the decision tree editor to create a decision tree |

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| Unit 7. Customizing rule vocabulary with categories and domains  Duration: 1 hour | |
| Overview | This unit teaches you how to work with categories and domains to customize rule vocabulary. |
| Learning objectives | After completing this unit, you should be able to:   * Simplify rule authoring by defining domains |

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| Exercise 9. Working with static domains  Duration: 1 hour | |
| Overview | This exercise teaches you how to define static domains in the BOM to simplify rule authoring. |
| Learning objectives | After completing this exercise, you should be able to:   * Create various types of static domains * Use domains in rules |

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| Exercise 10. Working with dynamic domains  Duration: 1 hour and 30 minutes | |
| Overview | This exercise teaches you how to define and use dynamic domains with Microsoft Excel spreadsheets. |
| Learning objectives | After completing this exercise, you should be able to:   * Create dynamic domains in Microsoft Excel spreadsheets * Update and use dynamic domains in rules * Access and update dynamic domains in Decision Center * Synchronize dynamic domains between Rule Designer and Decision Center |

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| Unit 8. Queries and ruleset extraction  Duration: 45 minutes | |
| Overview | This unit explains how to use search and query tools with rule artifacts. |
| Learning objectives | After completing this unit, you should be able to:   * Use search features and queries to identify rules according to specific criteria * Define semantic queries according to rule behavior * Use queries to create ruleset extractors * Extract rules from rule projects for execution |

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| Exercise 11. Queries and ruleset extraction  Duration: 1 hour | |
| Overview | This exercise teaches you how to define queries and rule extractors on rule projects. |
| Learning objectives | After completing this exercise, you should be able to:   * Search for rule artifacts and find rules according to their dependencies * Define and run queries and apply actions on query results * Create query-based ruleset extractors to extract ruleset archives |

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| Unit 9. Debugging rules  Duration: 45 minutes | |
| Overview | In this unit, you learn how to verify that the implemented business logic is free of errors. |
| Learning objectives | After completing this unit, you should be able to:   * Use a launch configuration to execute rulesets * Design a simple Java client application to run rule artifacts with an embedded rule engine * Use the Rule Designer debug tools |

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| Exercise 12. Executing rules locally  Duration: 45 minutes | |
| Overview | This exercise teaches you how to run rule projects locally to ensure the correctness of rulesets. |
| Learning objectives | After completing this exercise, you should be able to:   * Create launch configurations to execute rulesets locally * Create Java applications to execute rulesets locally with an embedded rule engine * Explore the rule engine API |

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| Exercise 13. Debugging a ruleset  Duration: 30 minutes | |
| Overview | This exercise teaches you how to debug a ruleset in Rule Designer. |
| Learning objectives | After completing this exercise, you should be able to:   * Debug a ruleset * Set breakpoints on an action rule and on a task in a ruleflow * Inspect objects in the working memory or rule instances in the agenda * Use the various views of the Debug perspective |

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| Unit 10. Enabling tests and simulations  Duration: 1 hour and 15 minutes | |
| Overview | This unit teaches you how to enable business users to run tests and simulations with Decision Validation Services. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the basic features of Decision Validation Services * Collaborate with business users to set up testing and simulation functionality |

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| Exercise 14. Enabling tests and simulations  Duration: 1 hour and 15 minutes | |
| Overview | This exercise teaches you how to set up testing and simulation functionality for business users. |
| Learning objectives | After completing this exercise, you should be able to:   * Validate the BOM and generate scenario file templates in Excel format * Customize scenario file templates * Create virtual attributes to test collections of complex objects * Set up a test server and run tests in Rule Designer to validate remote conditions |

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| Unit 11. Managing deployment  Duration: 1 hour | |
| Overview | This unit teaches you how to deploy the rule artifacts to Rule Execution Server for their managed execution. It also covers XOM management. |
| Learning objectives | After completing this unit, you should be able to:   * Explain the basic features of Rule Execution Server * Package rulesets as RuleApps * Create Rule Execution Server configurations to identify the Rule Execution Server where RuleApps are deployed * Deploy RuleApps to Rule Execution Server * Describe the basics of XOM management |

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| Exercise 15. Managing deployment  Duration: 1 hour | |
| Overview | This exercise teaches you how to deploy rules and XOMs for managed execution with Rule Execution Server. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a RuleApp * Define a RuleApp and ruleset properties * Create a Rule Execution Server Configuration project * Create deployment configurations * Use Rule Designer to deploy RuleApps to Rule Execution Server * Deploy the XOM for its management in Rule Execution Server |

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| Unit 12. Executing rules with Rule Execution Server  Duration: 2 hours and 15 minutes | |
| Overview | This unit explains how to create client applications that request the managed execution of business rules with Rule Execution Server. It also covers the various enterprise environments in which Rule Execution Server can run. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the Rule Execution Server architecture * Describe the platforms in which Rule Execution Server can be deployed * Explain the APIs that are used to create client applications that request ruleset execution with Rule Execution Server |

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| Exercise 16. Exploring the Rule Execution Server console  Duration: 30 minutes | |
| Overview | This exercise teaches you how to work with the Rule Execution Server console. |
| Learning objectives | After completing this exercise, you should be able to:   * Work with Rule Execution Server console tools * Manage RuleApps and rulesets through the Rule Execution Server console |

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| Exercise 17. Executing rules with Rule Execution Server in Java SE  Duration: 15 minutes | |
| Overview | This exercise teaches you how to execute rules with Rule Execution Server in Java SE. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a client application that requests ruleset execution with Rule Execution Server in Java SE * Describe and use the Rule Execution Server API that is required for ruleset execution with Rule Execution Server in Java SE |

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| Exercise 18. Executing rules with Rule Execution Server in Java EE  Duration: 30 minutes | |
| Overview | This exercise teaches you how to execute rules with Rule Execution Server in Java EE. |
| Learning objectives | After completing this exercise, you should be able to:   * Use the basic Rule Execution Server API to request ruleset execution with Rule Execution Server in Java EE |

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| Exercise 19. Executing rules as a hosted transparent decision service (HTDS)  Duration: 30 minutes | |
| Overview | This exercise teaches you how to execute rules as a hosted transparent decision service (HTDS). |
| Learning objectives | After completing this exercise, you should be able to:   * Deploy an HTDS that can be used in a service-oriented architecture (SOA) * Create a client application that uses an HTDS * Monitor HTDS execution statistics in the Rule Execution Server console |

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| Unit 13. Auditing and monitoring ruleset execution  Duration: 1 hour | |
| Overview | In this unit, you learn how to audit and monitor ruleset execution with Decision Warehouse. |
| Learning objectives | After completing this unit, you should be able to:   * Audit the execution of rulesets with Decision Warehouse * Monitor ruleset execution with the Rule Execution Server console |

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| Exercise 20. Auditing ruleset execution through Decision Warehouse  Duration: 45 minutes | |
| Overview | This exercise describes how to enable monitoring of ruleset execution and how to audit execution traces in Decision Warehouse. |
| Learning objectives | After completing this exercise, you should be able to:   * Enable monitoring for ruleset execution * Retrieve decision traces through Decision Warehouse * Optimize Decision Warehouse * Delete trace data from Decision Warehouse |

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| Unit 14. Working with the REST API  Duration: 1 hour | |
| Overview | This unit teaches you how to use the REST API for ruleset execution. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the ruleset execution REST API |

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| Exercise 21. Working with the REST API  Duration: 30 minutes | |
| Overview | This exercise describes how to use the REST API for ruleset execution and resource management. |
| Learning objectives | After completing this exercise, you should be able to:   * Use the REST API to test ruleset execution and manage RuleApp resources |

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| Unit 15. Introducing decision governance  Duration: 1 hour and 30 minutes | |
| Overview | In this unit, you learn how to identify governance issues and use Operational Decision Manager features to support decision governance. |
| Learning objectives | After completing this unit, you should be able to:   * Explain governance issues and good practices * Identify Operational Decision Manager features that support decision governance * Describe how to implement the decision governance framework |

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| Exercise 22. Working with decision services  Duration: 1 hour and 30 minutes | |
| Overview | This exercise shows you how to work with a decision service in Rule Designer and Decision Center with the Decision Governance Framework. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a decision service * Define decision operations * Define deployment configurations * Manage a decision service in the Business console from release creation to deployment |

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| Unit 16. Course summary  Duration: 30 minutes | |
| Overview | This unit summarizes the course and provides information for future study. |
| Learning objectives | After completing this unit, you should be able to:   * Explain how the course met its learning objectives * Access the IBM Training website * Identify other IBM Training courses that are related to this topic * Locate appropriate resources for further study |

For more information

To learn more about this course and other related offerings, and to schedule training, see **ibm.com**/training

To learn more about validating your technical skills with IBM certification, see **ibm.com**/certify

To stay informed about IBM training, see the following sites:

IBM Training News: http://bit.ly/IBMTrainEN

YouTube: youtube.com/IBMTraining

Facebook: facebook.com/ibmtraining

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