

Developing Solutions with IBM Decision Server Insights V8.8

WB399 (Classroom)

ZB399 (Self-paced)

Course description

In this course, you learn about the main features of the Decision Server Insights component of IBM Operational Decision Manager Advanced V8.8.

Decision Server Insights enables real-time, in-memory, rule-based, event-driven, and analytical decision making. You experience how to use analytics, time-based reasoning, and location-based reasoning to build a real-world solution that detects and responds to business situations. You also learn the key capabilities of the multi-agent architecture of Decision Server Insights by developing several agents that are bound to a single entity for different purposes.

This course focuses on solution development, deployment, testing, and administration. You learn how to implement the business logic that detects business situations and uses situational context to decide and take the next best action.

The course begins with an overview of the programming model for Decision Server Insights and the architecture for the Decision Server Insights runtime environment. You learn how to design a Decision Server Insights solution, model the business entities and events that you care about, and implement the business logic. You work with a realistic test client to test the behavior of your implementation after deployment.

The course also covers administration topics, including installation, configuration of the Decision Server Insights reference topology, solution deployment in a grid environment, and grid administration.

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 1.2

Product and version

IBM Operational Decision Manager Advanced V8.8

Audience

This course is designed for developers.

Learning objectives

After completing this course, you should be able to:

* Describe the Decision Server Insights programming model and architecture
* Design and create a Decision Server Insights solution
* Define the business model for the events, entities, and concepts that are relevant to your domain
* Use global aggregates for calculations across all events or a population of entities
* Implement business logic with rule agents and rules to detect and respond to business situations
* Deploy solutions to the Insight Server runtime and test runtime behavior
* Explain Decision Server Insights integration capabilities

Prerequisites

Before taking this course, you should have:

* Experience with the Java programming language and object-oriented concepts
* Basic knowledge of Extensible Markup Language (XML)
* Basic knowledge of the WebSphere Application Server Liberty profile
* Familiarity with the Representational State Transfer (REST) architectural style
* Familiarity with WebSphere eXtreme Scale

Duration

4 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 available (not total disk space) |
| Network requirements | LAN / Internet |
| Other requirements | This course requires 4 workstations per instructor and 4 workstations per student. The image set should be in an isolated network. The table lists the requirements for the first workstation, Host 1: dsiHost1.  The following list provides the technical requirements for the remaining three workstations.  Host 2: container1   * Hardware requirements (Processor: Intel i7-2630QM processor or faster, RAM: 8 GB, free disk space: 120 GB * Network requirements (Connection: LAN, Internet access: none, IP address assignment: none)   Host 3: container2   * Hardware requirements (Processor: Intel i7-2630QM processor or faster, RAM: 8 GB, free disk space: 120 GB * Network requirements (Connection: LAN, Internet access: none, IP address assignment: none)   Host 4: container3   * Hardware requirements (Processor: Intel i7-2630QM processor or faster, RAM: 8 GB, free disk space: 120 GB * Network requirements (Connection: LAN, Internet access: none, IP address assignment: 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 course WB398 and ZB398, *Developing Solutions with IBM Decision Server Insights V8.7.1.*

Course agenda

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| Course introduction  Duration: 30 minutes |

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| Unit 1. Introducing IBM Decision Server Insights  Duration: 1 hour and 30 minutes | |
| Overview | This unit introduces you to the Decision Server Insights programming model and architecture. |
| Learning objectives | After completing this unit, you should be able to:   * Describe Decision Server Insights and explain how it works * Explain the programming model * Describe the Decision Server Insights architecture * Outline the user roles that are associated with Decision Server Insights |

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| Exercise 1. Getting started with Decision Server Insights  Duration: 1 hour and 30 minutes | |
| Overview | This exercise explores the installation and configuration of Decision Server Insights. |
| Learning objectives | After completing this exercise, you should be able to:   * Install Decision Server Insights with IBM Installation Manager * Prepare a workspace in Insight Designer * Set the debug port for your installation |

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| Unit 2. Designing Decision Server Insights solutions  Duration: 1 hour and 30 minutes | |
| Overview | This unit teaches you how to plan and design a Decision Server Insights solution. |
| Learning objectives | After completing this unit, you should be able to:   * Model a solution * Outline design factors * Describe the solution project |

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| Exercise 2. Creating a solution in Insight Designer  Duration: 15 minutes | |
| Overview | This exercise demonstrates how to create the solution project in Insight Designer. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a solution project |

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| Unit 3. Creating the business model  Duration: 1 hour | |
| Overview | This unit teaches you how to create the business model definition file. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the elements of a business model * Translate a UML diagram into a business model definition |

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| Exercise 3. Defining the business model  Duration: 30 minutes | |
| Overview | This exercise covers how to create a business model. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a business model definition file |

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| Unit 4. Authoring the business logic  Duration: 1 hour and 30 minutes | |
| Overview | This unit teaches you how to implement the business logic with rule agents. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the structure of rule agents, Java agents, and predictive scoring agents * Implement business logic with rules * Explain how to implement time-based reasoning * Describe location-based tests |

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| Exercise 4. Creating a rule agent  Duration: 30 minutes | |
| Overview | This exercise covers how to create agents, how to write agent descriptors that bind the agent to an entity, and how to write a rule that emits an event. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a rule agent * Write an agent descriptor * Write a rule that emits an event * Create a Java agent |

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| Exercise 5. Writing and testing rules  Duration: 30 minutes | |
| Overview | This exercise covers how to add a rule to an existing rule agent and deploy the solution for testing. |
| Learning objectives | After completing this exercise, you should be able to:   * Add a rule to a rule agent * Deploy a solution * Submit events through a test client to test rule behavior |

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| Unit 5. Working with aggregates  Duration: 45 minutes | |
| Overview | This unit teaches you how to implement analytics in your business logic by using local, global, and shared aggregates. |
| Learning objectives | After completing this unit, you should be able to:   * Define global aggregates * Define shared aggregates |

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| Exercise 6. Using global aggregates in rules  Duration: 1 hour and 15 minutes | |
| Overview | This exercise shows you how to create global aggregates and use them in your rules to identify and respond to outliers. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a global aggregate * Use global aggregates in rules * Use the REST API to view aggregates in your solution |

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| Exercise 7. Using event aggregates in rules  Duration: 45 minutes | |
| Overview | This exercise shows you how to use event aggregates to analyze a current transaction in comparison to historical transactions. |
| Learning objectives | After completing this exercise, you should be able to:   * Use event aggregates and shared aggregates in rules |

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| Exercise 8. Using time-based and location-based reasoning in rules  Duration: 30 minutes | |
| Overview | This exercise covers how to correlate time-stamped and geo-localized events. |
| Learning objectives | After completing this exercise, you should be able to:   * Use time facets to implement time-based reasoning in rules * Use location facets to implement spatial reasoning in rules |

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| Exercise 9. Testing for the absence of events  Duration: 30 minutes | |
| Overview | This exercise covers how to recognize when an event did not occur and respond in a timely manner. |
| Learning objectives | After completing this exercise, you should be able to:   * Test for the absence of events |

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| Unit 6. Testing solutions  Duration: 1 hour | |
| Overview | This unit teaches you how to test the implementation of your business logic. |
| Learning objectives | After completing this unit, you should be able to:   * Test solutions with the TestDriver API * Test solutions with the Test Client * Work with the REST API * Analyze event processing with Insight Inspector * Work with the Map Viewer |

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| Exercise 10. Testing solutions  Duration: 30 minutes | |
| Overview | This exercise covers how to create and test a solution with the Test Client. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a test client project * Run a test scenario |

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| Exercise 11. Using the Map Viewer  Duration: 30 minutes | |
| Overview | This exercise shows how to configure and use the Map Viewer to test a solution. |
| Learning objectives | After completing this exercise, you should be able to:   * Configure Insight Map Viewer * Run a solution and view entities that are displayed on Insight Map Viewer |

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| Unit 7. Modeling and defining connectivity  Duration: 1 hour | |
| Overview | This unit describes how to define and manage connectivity for your solution. |
| Learning objectives | After completing this unit, you should be able to:   * Define inbound and outbound connectivity for a solution * Configure and deploy connectivity |

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| Exercise 12. Defining connectivity  Duration: 30 minutes | |
| Overview | This exercise shows how to define connectivity for a solution. In a later exercise, you deploy and test the connectivity. |
| Learning objectives | After completing this exercise, you should be able to:   * Configure inbound and outbound endpoints * Generate and validate connectivity configurations |

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| Unit 8. Integrating Decision Server Insights  Duration: 1 hour | |
| Overview | This unit explores the integration capabilities of Decision Server Insights. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the integration capabilities of Decision Server Insights * Explain the exchange event schemas between IBM Integration Bus and Decision Server Insights * Consume IBM MQ or IBM Information Bus monitoring events * Create a predictive scoring agent |

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| Unit 9. Configuring Insight Server  Duration: 1 hour | |
| Overview | This unit explains how to configure Decision Server Insights. |
| Learning objectives | After completing this unit, you should be able to:   * Describe WebSphere eXtreme Scale basics * Describe the Decision Server Insights reference topology * Design and configure a production topology |

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| Exercise 13. Installing Decision Server Insights  Duration: 1 hour | |
| Overview | In this exercise, you learn how to install Decision Server Insights on multiple hosts. |
| Learning objectives | After completing this exercise, you should be able to:   * Install IBM Installation Manager on every machine in the lab environment where Insight Server should run * Use Installation Manager to install Decision Server Insights on every machine in the lab environment where Insight Server should run |

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| Exercise 14. Configuring Decision Server Insights  Duration: 3 hours | |
| Overview | In this exercise, you learn how to configure Insight Servers on multiple hosts to create a grid. |
| Learning objectives | After completing this exercise, you should be able to:   * Create and configure catalog, container, and inbound and outbound servers |

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| Unit 10. Managing deployment  Duration: 1 hour | |
| Overview | This unit explains how to deploy to Insight Server. |
| Learning objectives | After completing this unit, you should be able to:   * Explain how to export and deploy solutions * Describe how to manage solutions with the solutionManager script * Manage deployment to multiple hosts |

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| Exercise 15. Deploying solutions  Duration: 1 hour and 30 minutes | |
| Overview | In this exercise, you learn how to deploy solutions to a grid. You also learn how to deploy and test connectivity for a grid environment. |
| Learning objectives | After completing this exercise, you should be able to:   * Use solutionManager to deploy solutions * Manage deployment and connectivity for a grid environment |

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| Unit 11. Administering Decision Server Insights  Duration: 1 hour | |
| Overview | This unit explains how to administer Decision Server Insights. |
| Learning objectives | After completing this unit, you should be able to:   * Use administration scripts to monitor status and activity of your servers and grid * Use trace files and logging to monitor Decision Server Insights * Describe how to monitor WebSphere eXtreme Scale and WebSphere MQ |

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| Exercise 16. Administering Decision Server Insights  Duration: 1 hour | |
| Overview | In this exercise, you learn how to manage security, deploy solutions, and monitor the grid. |
| Learning objectives | After completing this exercise, you should be able to:   * Monitor and manage the hosts in a Decision Server Insights grid |

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| Unit 12. 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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