

Developing workflow solutions using IBM Business Automation Workflow V20.0.0.1

WB835 (Classroom)

ZB835 (Self-paced)

Course description

This course integrates training in business process management (BPM) methods and implementation with IBM Business Automation Workflow V20. You learn core process modeling and implementation skills, the project development approach, process model implementation fundamentals, and delivery patterns. These skills improve the speed and quality of implementing an executable process. The course uses an interactive learning environment, with class review questions to reinforce concepts and check understanding. Lab exercises throughout the course provide hands-on experience with IBM tools. This course is intended to be collaborative, and you can work in teams to complete class activities.

IBM Business Automation Workflow is a comprehensive environment that provides the visibility and insight that is required to effectively manage the business processes of an organization. The course begins with an overview of the product and then covers business process management, emphasizing the concepts of reuse, ease of maintenance, and high-quality development strategies. You create a structured process using IBM Process Designer from business requirements that are identified during process analysis. You learn how to make team collaboration more efficient by using standard Business Process Model and Notation (BPMN) elements.

The course provides an overview of the architecture of IBM Business Automation Workflow and describes the use of process applications and toolkits within the tool. You create business objects and variables, implement gateways, and demonstrate process flow on your diagrams. You build customized user interfaces (coaches) to enable business and process data flows throughout the process model.

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 1.0

Product and version

IBM Business Automation Workflow v20.0.0.1

Audience

This course is designed for project members who design and implement detailed logic, data models, and external system integrations for an executable business process. These roles include process owners, BPM analysts, BPM authors, BPM developers, BPM administrators, and BPM project managers.

Learning objectives

After completing this course, you should be able to:

* Understand the key capabilities of Business Automation Workflow
* Describe how to use IBM Business Automation Workflow to accomplish process modeling goals
* Describe the purpose of the Process Portal, Process Designer, and Workflow Center repository
* Describe the high-level architecture for Business Automation Workflow
* List and describe the core notation elements that are used in the IBM Process Designer
* Describe the purpose and function of Blueworks Live
* Explain the benefits of using IBM Business Automation Workflow on Cloud
* Define Business Process Management (BPM)
* Understand the process spectrum
* List and describe the phases in the IBM Playback methodology
* Describe Playback 0 and the achievements that are reached during this stage
* Examine a defined workflow from detailed process requirements and identify the interrelated process activities
* Describe how to model a structured process
* Decompose activities into a nested process
* Describe process sequence flow and the runtime use of process tokens
* Explain how to evaluate and model conditions for a gateway
* List and describe intermediate event types that are used in the IBM Process Designer
* Model a business process escalation path with an attached timer intermediate event
* Describe the differences between process flow data and business flow data
* Add variables and business objects to a process
* Describe teams and process lanes
* Explain user distribution in a process application
* Implement routing for tasks
* Create a routing design by using a team filter service
* Assign an expert group to an activity
* Expose a process application to a team
* Use coaches to define and implement guided user interactions
* Implement a service for an activity in a process
* Enhance coaches by applying a theme and adding tabs
* Create a reusable view
* Create a snapshot
* Share your assets by using a toolkit, and exporting your process application
* Organize assets with favorites, tagging, and smart folders
* Conduct a Playback session
* Explain how to create a decision service
* Describe how to create and configure an undercover agent (UCA)
* Describe how to start a process with a message start event
* Define the basic function of services
* Configure and define services for outbound integration
* Create an inbound web service
* Describe the differences between an environment variable and an exposed process variable
* Catch an error in a process and service
* Explain when to use team filter services to support business policy
* Use parallel tasks and messaging in a BPMN model
* Use Multi-instance loops to efficiently route work
* Explain how to integrate with external systems in IBM Business Automation Workflow
* Explain how to handle content events in a process
* Understand how the Target Object Store (TOS) can be used to share documents between a BPM solution and a Case solution
* Understand how to build a simple Case solution that integrates a process from a BPM solution

Prerequisites

Before taking this course, you should have:

* Practical knowledge of data structures
* Understanding of SQL syntax and JavaScript
* Basic understanding of web services
* Experience with modern programming techniques

Duration

5 days

Skill level

Basic

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| Classroom (ILT) setup requirements | |
| Processor | Intel Core i7-3630QM processor |
| GB RAM | 12.0 |
| GB free disk space | 120 |
| Network requirements | LAN / Internet |
| 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 course WB828

Course agenda

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| Course introduction  Duration: 15 minutes |

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| Unit 1. Introduction to IBM Business Automation Workflow  Duration: 1 hour and 30 minutes | |
| Overview | This unit is an overview of IBM Business Automation Workflow, it’s key capabilities, high-level architecture, and its primary components. It focuses on how to create a process application in the Workflow Center, provides a look at the Designer and Inspector views of the IBM Process Designer, and introduces the Process Portal and Workflow repository. |
| Learning objectives | After completing this unit, you should be able to:   * Understand the key capabilities of IBM Business Automation Workflow * Describe how to use IBM Business Automation Workflow to accomplish process modeling goals * Explain how to create process applications in the Workflow Center * Explain how to design process models by using the IBM Process Designer * Describe the purpose of the Process Portal, Process Designer, and the Workflow Center repository * Describe the high-level architecture for IBM Business Automation Workflow * Explain the benefits of using IBM Business Automation Workflow on Cloud |

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| Exercise 1. Creating your first process application  Duration: 1 hour | |
| Overview | This exercise introduces Business Automation Workflow and the creation of your first process application. You are also introduced to various tools that can be used for troubleshooting. After creating your process application, you learn how to export and import snapshots. |
| Learning objectives | After completing this exercise, you should be able to:   * Start IBM Business Automation Workflow * Create a process application in Workflow Center * Use the Process Admin console and other tools to aid in troubleshooting * Export and Import process applications |

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| Unit 2. Introduction to Business Process Management  Duration: 1 hour and 30 minutes | |
| Overview | This unit explains the foundational concepts that establish the importance of process modeling. It includes a review of Business Process Management, the Business Process Management lifecycle, the basics of process modeling, the Playback methodology, and Business Process Management project development. |
| Learning objectives | After completing this unit, you should be able to:   * Understand the process spectrum * Define Business Process Management (BPM) * Define process modeling * Understand the high-level project phases of a BPM project * List and describe the phases in the IBM Playback methodology * Describe Playback 0 and the achievements that are reached at this stage in the Playback methodology |

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| Unit 3. Playback 0: Modeling the As-Is and To-Be business processes  Duration: 1 hour and 30 minutes | |
| Overview | In this unit, you learn how to create a structured process application based on an examination of requirements. You also learn how to identify process activities, decompose some activities into a nested process, and build the initial process. You learn the purpose of Blueworks Live and how it fits into the process development lifecycle. The unit also covers the core notation elements that are used in IBM Process Designer, and the categories of activities like processes and nested processes that contain process tasks. It concludes with a case-study scenario that begins the in-class development of a process that is based on the business requirements that are established within the process analysis - Playback zero phase of the project. |
| Learning objectives | After completing this unit, you should be able to:   * Describe how to model a process * Decompose activities into a nested process * List and describe the core notation elements that are used in IBM Process Designer * Describe the purpose and function of Blueworks Live * Examine a defined workflow from detailed process requirements and identify the interrelated process activities and the roles that are responsible for completing them * Describe the requirements of the Hiring Request Process use case |

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| Exercise 2. Playback 0: Creating the To-Be process  Duration: 2 hours | |
| Overview | This exercise covers how to create a process using IBM Process Designer. The Hiring Requisition process owner provided detailed information about the process and its current state to the BPM analyst, who in turn documented the information. This step completed the process discovery and initial analysis, and now the process model can be created. To accomplish the task of creating the initial process model, you model it with a pool, lanes, and flow objects such as activities, and events, and nested processes. You take the information that is provided for the use case and translate that into a process. Your first task is to create a process and name it according to naming conventions. Add the activities in the appropriate lanes and use sequence flow to connect the activities. Be sure to model the happy path (critical path) first. You also complete decomposition on your process and create a linked process where you see the opportunity. |
| Learning objectives | After completing this exercise, you should be able to:   * Translate business process workflow steps that are documented in the process discovery and analysis into process model tasks * Create the foundation for a process by adding the appropriate lanes to the default pool * Model the expected process flow for the initial process model * Decompose business process workflow steps that are documented in the process discovery and analysis into process model tasks * Create a linked process |

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| Unit 4. Playback 0: Controlling process flow  Duration: 1 hour and 30 minutes | |
| Overview | This unit covers the modeling of process flow, sequence flow, tokens, gateways, and intermediate events. |
| Learning objectives | After completing this unit, you should be able to:   * Describe process sequence flow and the runtime use of process tokens * List and describe gateways as they are used in IBM Process Designer * Explain how to evaluate conditions for a process gateway * Model gateways in a process * List and describe intermediate event types that are used in IBM Process Designer * Model a business process escalation path with an attached timer intermediate event |

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| Exercise 3. Playback 0: Controlling process flow  Duration: 1 hour and 30 minutes | |
| Overview | This exercise covers how to create gateways in a business process, and how to create timer intermediate events. Validation is accomplished through a review session with all business stakeholders, business users, and the BPM development team. This unit describes the Playback 0 validation goals and requirements, explains how to validate that a process model meets the goals and requirements, and describes how to reach consensus on the process model. At the end of this exercise, you complete Playback 0. |
| Learning objectives | After completing this exercise, you should be able to:   * Add gateways to a process * Model the appropriate sequence flows for each gateway * Add a timer intermediate event to a process based on business requirements * Model an escalation path in a process with IBM Process Designer * Add a new swimlane and activity for legal review to meet additional requirements. * Validate the process application and create a snapshot |

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| Unit 5. Playback 1: Controlling process flow with business data  Duration: 1 hour and 30 minutes | |
| Overview | This unit describes how to manage the variables and data flow. It covers the implementation of the intermediate timer event, gateways, and routing tasks. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the differences between process flow data and business flow data * Add variables to a process * Implement gateways to control process flow * Describe teams and process lanes * Implement routing for tasks * Assign an expert group to an activity * Expose a process application to a team |

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| Exercise 4. Playback 1: Controlling process flow with business data  Duration: 1 hour and 30 minutes | |
| Overview | In this exercise, you create assets that are required during Playback 1 controlling the process flow of the process lifecycle. You create variables, implement timer intermediate events, establish routing, and implement exclusive gateways. |
| Learning objectives | After completing this exercise, you should be able to:   * Create simple variables in a process * Implement timer intermediate events in a process * Implement gateways for a process * Implement routing for an activity |

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| Unit 6. Playback 1: Business data, services, and coaches  Duration: 2 hours | |
| Overview | This unit explains the goal of this Playback: to demonstrate that data flows from one coach to another and from one task to another inside the process. All data is bound on the coaches, and if the same data is shared across multiple tasks, Playback participants can track the data when it moves through the various activities. |
| Learning objectives | After completing this unit, you should be able to:   * Build a business object * Initialize a complex object and a list * Build a service * Use coaches to define and implement guided user interactions * Implement a service for an activity in a process * Map variables between a nested service and an activity in the overlying process * Describe the object methods |

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| Exercise 5. Playback 1: Business data, services, and coaches  Duration: 1 hour and 30 minutes | |
| Overview | In this exercise, by using the core requirements, you determine and create all of the necessary assets to support a coach in the Hiring Request Process. You use complex business objects (variable types) to organize your data, and pass data into and out of a linked process. You build a service and define guided user interactions with a coach. You also implement a service for an activity, and map variables between a nested service and an activity. You model the coach by using the concept of grids. |
| Learning objectives | After completing this exercise, you should be able to:   * Determine and organize data when provided with a written process * Add business objects and object types * Create a client-side human service * Add variables and business objects to a process application * Create and configure a coach to obtain process participant input * Model a coach by using the concept of grids * Add coach controls to control process flow * Create a client-side human service and coach for the General Manager review activity * Implement an activity by attaching a service and mapping data |

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| Unit 7. Playback 1: Enhancing coaches  Duration: 1 hour and 30 minutes | |
| Overview | This unit covers how to build coaches and then enhance them. Views are reusable assets that can be shared with multiple coaches or even multiple process applications. The unit covers how to validate the process flow and use toolkits. |
| Learning objectives | After completing this unit, you should be able to:   * Describe how to create tabs on a coach * Enhance coaches and apply a theme * Explain how to create a reusable View * Describe how to create a snapshot * Export your process application * Share your assets by using a toolkit * Conduct a Playback session |

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| Exercise 6. Playback 1: User interface design and implementation  Duration: 1 hour and 30 minutes | |
| Overview | In this exercise, you group controls into tabs on a coach and change the appearance of the coach by applying a theme. |
| Learning objectives | After completing this exercise, you should be able to:   * Create tabs on a coach * Change the appearance of a coach by applying a custom theme * Change the coach layout for a mobile format * Configure controls to respond to different screen sizes * Debug the coach by using a responsive sensor |

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| Exercise 7. Playback 1: Conducting the Playback session  Duration: 1 hour | |
| Overview | This exercise covers how to conduct a Playback of your process. The exercise demonstrates the process, following various paths that flow from the exclusive gateways in the process and demonstrate tasks that are assigned. It also describes the task that is created in the Process Portal inbox, depending on the swimlane and routing settings for an activity. You also create a toolkit to store and share these assets. |
| Learning objectives | After completing this exercise, you should be able to:   * Log on to the Process Portal and create an instance of a process * Demonstrate that the process follows the various paths modeled * Use Process Portal to view the state of activities in a process * Create a toolkit * Create a snapshot in the Workflow Center * Export the process application |

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| Unit 8. Playback 2: Integrations  Duration: 1 hour and 30 minutes | |
| Overview | This unit covers how to create a decision service, implement message events, apply asset tagging, and access and manipulate external data. You learn about exposed process variables (EPVs) and environment variables (ENVs). |
| Learning objectives | After completing this unit, you should be able to:   * Explain how to create a decision service * Define a message start event * Explain how an enabling service is used with the message start event * Describe how to create and configure an undercover agent (UCA) * Describe how to start a process with a message start event * Define the basic function of an integration service flow * Identify the components of the IBM Business Automation Workflow integration architecture * Describe how integration components interact with services * Configure and define integration service flows for outbound integration * Describe the differences between an environment variable and an exposed process variable * Organize assets with favorites, tagging, and smart folders |

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| Exercise 8. Playback 2: Integrations  Duration: 1 hour and 30 minutes | |
| Overview | This exercise covers how to create implementation assets to support Playback 2: integrations. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a decision service * Create and configure a UCA * Start a process with a message start event * Use tagging to organize assets * Query a database to obtain information and populate a list variable * Create environment variables (ENVs) and exposed process variables (EPVs) * Change a text control to a single select control |

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| Unit 9. Playback 3: Error handling and deployment  Duration: 1 hour | |
| Overview | Playback 3 is the final Playback. The goal of this Playback is to demonstrate what happens when your process encounters an error, and how that error is handled. This unit covers error handling patterns that are used in your process application, conveying general principles for error handling without having to demonstrate every instance. |
| Learning objectives | After completing this unit, you should be able to:   * Catch an error in a process or service |

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| Exercise 9. Playback 3: Handling errors and deploying your process application  Duration: 1 hour | |
| Overview | This exercise covers how to implement error handling in a service. |
| Learning objectives | After completing this exercise, you should be able to:   * Harden a service with a catch exception component * Create a snapshot for deployment |

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| Unit 10. Advanced routing  Duration: 1 hour | |
| Overview | This unit covers routing tasks to process participants by using the advanced routing capabilities in IBM Business Automation Workflow. It focuses on routing by using a team filter service and dynamically generated teams. |
| Learning objectives | After completing this unit, you should be able to:   * Explain user distribution in a process application * Determine the best source for team data * Model decision authority for a process * Determine when to implement various types of routing * Explain how to create a routing design by using a team filter service * Explain when to use team filter services to support business policy |

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| Exercise 10. Implementing a custom routing solution  Duration: 1 hour | |
| Overview | In this exercise, you learn how to implement a custom routing solution. |
| Learning objectives | After completing this exercise, you should be able to:   * Implement a custom routing solution |

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| Exercise 11. Implementing the “four eyes” policy by using a team filter  Duration: 1 hour and 30 minutes | |
| Overview | In this exercise, you learn how to implement a “four eyes” policy in a process by using a team filter. |
| Learning objectives | After completing this exercise, you should be able to:   * Implement the “four eyes” policy by using a team filter |

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| Unit 11. Managing complex tasks and process interactions  Duration: 1 hour and 30 minutes | |
| Overview | Process application interactions depend on comprehensive solutions to function correctly. Without the correct approach to implementing complex tasks and interactions, the business process becomes inefficient. This unit covers the methods that developers use to build effective complex tasks and interactions. |
| Learning objectives | After completing this unit, you should be able to:   * Manage parallel activity execution * Implement a parallel task approval within a single process instance * Manage messaging between processes * Determine how to access data that is shared across multiple process activities * Cancel a process at any time * Determine when to use a multi-instance loop * Implement multi-instance loops in IBM Business Automation Workflow * Implement complex end conditions in a multi-instance loop |

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| Exercise 12. Building a cancellation pattern  Duration: 1 hour | |
| Overview | In this exercise, you learn how to implement a cancellation pattern. |
| Learning objectives | After completing this exercise, you should be able to:   * Implement a cancellation pattern in a process application * Implement an undercover agent (UCA) to cancel the hiring request |

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| Unit 12. Integrating with external systems  Duration: 1 hour | |
| Overview | Integrations with external systems are accomplished through integration service flows in IBM Business Automation Workflow. This unit covers the integration service flows that are used to connect to other systems for increased effectiveness of the business process application. |
| Learning objectives | After completing this unit, you should be able to:   * Explain how to build services in IBM Business Automation Workflow to integrate with external systems * Describe the outbound web service integrations and the most common issues that generate connection complexities * Use the System Data toolkit services when other solutions for external system connection are needed * Create an inbound web service integration * Create an event-based undercover agent |

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| Exercise 13. Building web service connections  Duration: 1 hour | |
| Overview | In this exercise you learn how to build inbound and outbound web service connections. |
| Learning objectives | After completing this exercise, you should be able to:   * Create an event-based undercover agent * Build an inbound web service connection * Build an outbound web service to message the inbound web service |

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| Unit 13. Handling content events in a process  Duration: 1 hour | |
| Overview | In this exercise, you learn how to use the CMIS capabilities in IBM Business Automation Workflow. |
| Learning objectives | After completing this unit, you should be able to:   * Use the CMIS capabilities of IBM Business Automation Workfloww * Explain how to handle content events in a process * Describe how to add a document to the BPM document store * Describe how to add a document to a Case solution * Understand how the Target Object Store (TOS) can be used to share documents between a BPM solution and a Case solution * Understand how to build a simple Case solution that integrates a process from a BPM solution |

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| Exercise 14. Handling content events in a process  Duration: 1 hour and 30 minutes | |
| Overview | In this exercise you learn how to implement a content event in a process. |
| Learning objectives | After completing this exercise, you should be able to:   * Use the CMIS capabilities of IBM Business Automation Workflow * Implement a content event in a process * Use the BPM document store to add a document to a process * Use the Target Object Store to share documents between a BPM solution and a Case solutions * Build a simple HR Case solution and create an activity to start the Hiring Request Process in the HR BPM solution * Demonstrate integration between the Case solution and the BPM solution |

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| Unit 14. Course summary and other resources  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:   * Describe the course objectives and what you learned * Identify and describe product certifications that are related to this course * Identify resources that can help you learn more |

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