

Course Guide

Process Modeling with IBM Business Process Manager Standard V8.5.7

Course code WB822 / ZB822 ERC 1.0



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Course description

Process Modeling with IBM Business Process Manager Standard V8.5.7

Duration: 2 days

Purpose

This course integrates training in business process management (BPM) methods and implementation with IBM Business Process Manager V8.5.7. You learn core process modeling skills and the project development approach. These skills improve the speed and quality of process definition creation efforts.

IBM Business Process Manager is a comprehensive BPM 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 business process management, emphasizing the concepts of reuse, ease of maintenance, and high-quality development strategies. You create simple ad hoc activities by using the web-based tools, and use the IBM Business Process Manager web Process Designer to create a process from business requirements that are identified during process analysis. You learn how to make team collaboration more efficient by enabling all team members to use standard Business Process Model and Notation (BPMN) elements.

The course uses an interactive learning environment, with hands-on demonstrations and class activities to reinforce concepts and check understanding. Lab exercises throughout the course provide hands-on experience with BPM tasks and skills. This course is intended to be collaborative, and you can work in teams to complete class activities.

Audience

This course is designed for project members who design executable business processes. These roles include process owners, BPM analysts, BPM authors, BPM developers, BPM administrators, and BPM project managers.

Prerequisites

Before taking this course, you should have experience with modern programming techniques.

Objectives

- Describe why process modeling is an important phase in the BPM lifecycle
- Create structured and unstructured processes (formerly Case) by using the web Process Designer
- Explain how to use Process Designer to create a process application

- List and identify the core elements that are used to create a process in the web Process Designer
- Translate workflow steps into business process activities and nested processes
- Use gateways to control the process flow
- Validate that the process model meets Playback 0 goals and requirements

Contents

- Introduction to business process management
- Introduction to IBM Business Process Manager and Integration with other tools
- Playback 0: Modeling the as-is business process
- Playback 0: Modeling the to-be business process
- Playback 0: Controlling process flow
- Playback 0: Building consensus

Curriculum relationship

This course is an update of course WB818, .

Agenda

**Note**

The following unit and exercise durations are estimates, and might not reflect every class experience.

Day 1

- (00:15) Course introduction
- (01:30) Unit 1. Introduction to business process management
- (01:30) Unit 2. Introduction to IBM Business Process Manager and integration with other tools
- (01:30) Unit 3. Playback 0: Modeling the as-is business process
- (01:30) Exercise 1. Playback 0: Creating a process with ad hoc activities

Day 2

- (02:30) Unit 4. Playback 0: Modeling the to-be business process
- (01:30) Exercise 2. Playback 0: Creating a structured process
- (01:30) Unit 5. Playback 0: Controlling process flow
- (01:30) Exercise 3. Playback 0: Controlling process flow
- (01:00) Unit 6. Playback 0: Building consensus
- (00:15) Exercise 4. Validating the process model
- (00:30) Unit 7. Course summary

Unit 1. Introduction to business process management

Estimated time

01:30

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, and business process management project development. It introduces 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.

How you will check your progress

- Checkpoint questions



How to check online for course material updates



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4. The wiki page displays information for the course. If there is a course corrections document, this page is where it is found.
5. If you want to download an attachment, such as a course corrections document, click the **Attachments** tab at the bottom of the page.
6. To save the file to your computer, click the document link and follow the prompts.



Figure 1-1. How to check online for course material updates

Unit objectives

- Define business process management (BPM)
- List and describe the phases in the BPM lifecycle procedure
- Define process modeling
- Describe Playback 0 and the achievements that are reached during this stage of project development

Topics

- Business process management (BPM)
- About process modeling
- BPM project development
- About playbacks, specifically Playback 0

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Figure 1-3. Topics

1.1. Business process management (BPM)

Business process management (BPM)

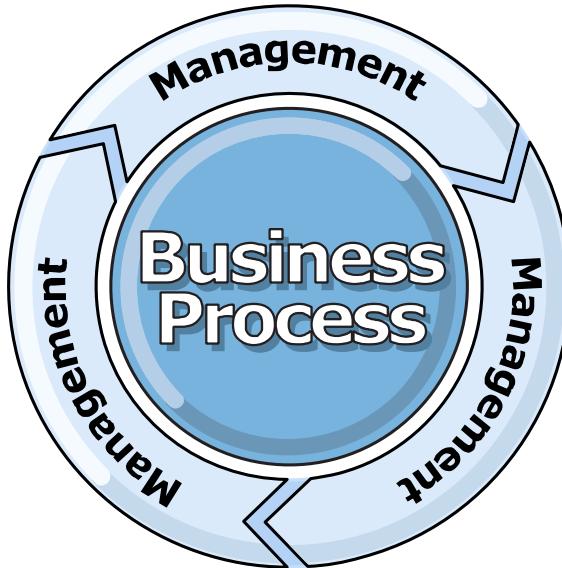
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Figure 1-4. Business process management (BPM)

Organizations often seek ways to improve their organization to increase productivity, lower costs, and increase revenues. The challenge organizations face is that change is inevitable in business because of various factors, like market dynamics. To keep up with the climate of change in business, organizations must rely on efficient and effective business processes.

Many organizations try to implement different strategies to accomplish change management of processes with little to no disruption of customer service and employee productivity. But many times, those efforts fail outright or accomplish only a portion of the process improvement because there is little performance measurement.

What is IBM BPM?



Comprehensive change management of business processes
that results in continuous process improvement

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Figure 1-5. What is IBM BPM?

Business process management (BPM) excels at providing a comprehensive change management of business processes, which results in continuous process improvement.

Processes are meant to evolve as the organization or external conditions change.

Three themes

Goal	System	Results
The BPM goal is efficient and effective business processes with visibility.	The BPM system is the management of people-to-people work steps, system-to-system communications, or person-to-system interactions.	The BPM expected result is process improvement that brings about financial benefits and customer and employee satisfaction.

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Figure 1-6. Three themes

BPM is also described with these common themes: the goal, the system, and the expected results.

All organizations have processes; however, the visibility of processes can be varied. BPM is a way to increase that visibility and hence give direction to the continued efficiency of the processes.

In true BPM, all aspects of a system are important, including human interactions. True BPM seeks to define and visualize all aspects of your process regardless of what role or system is conducting that part of the work. BPM results in continual process improvement, which provides many beneficial outcomes to the client.

An IBM BPM vision

“

BPM is the means by which companies and governments improve their operations by using internal business expertise in new, scalable ways.

Improvement is achieved by directly engaging business people in the design, definition, and creation of enterprise-class process applications.

”

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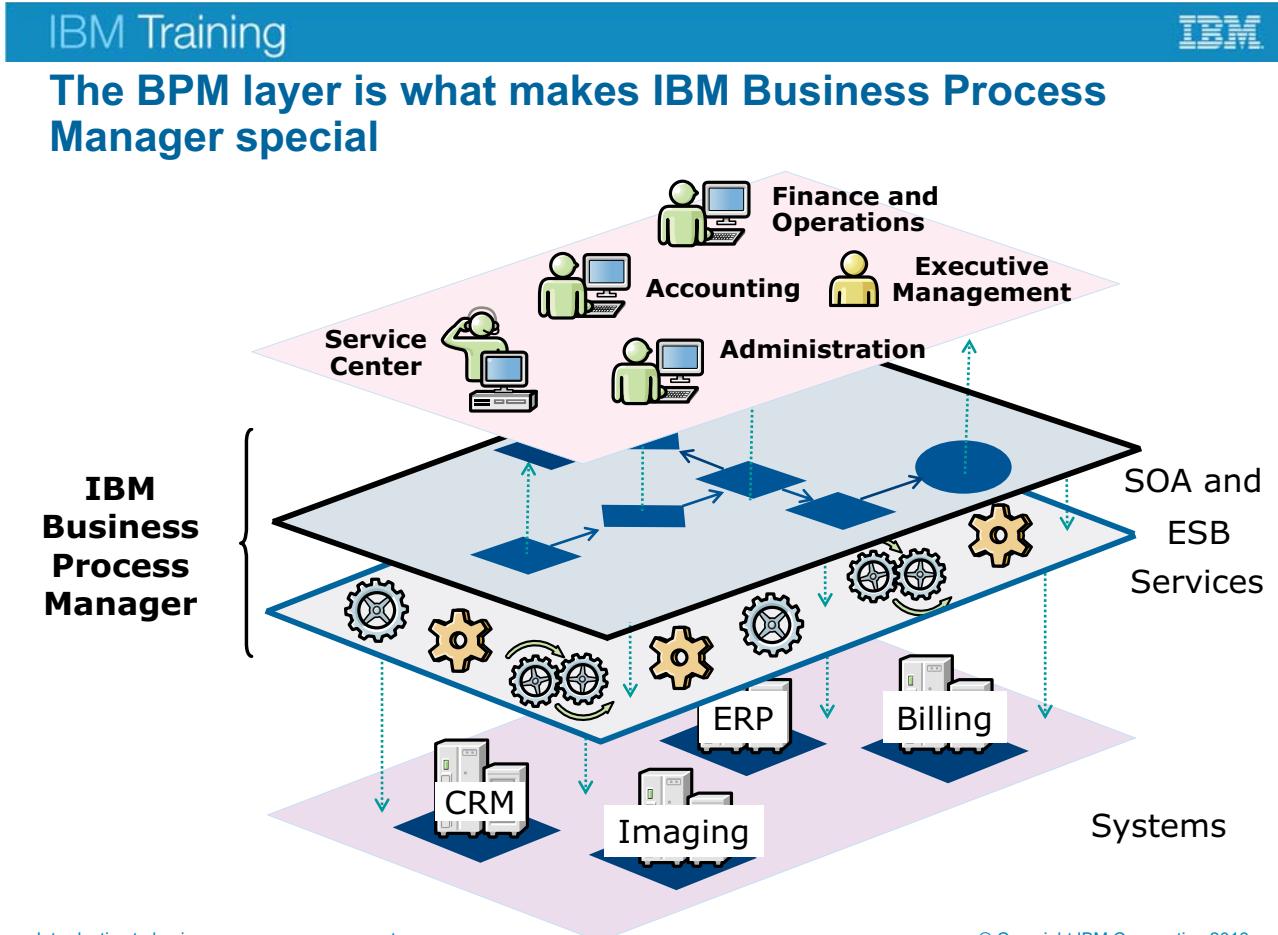
Figure 1-7. An IBM BPM vision

Does BPM have or even require a vision? If the ideal is to match existing core competencies and tool sets with the stated goal, system, and expected result, then the vision might be limited to only the execution of a process application build. It would also affect what a process model might look like and what it would communicate to an application development team.

What if a broader vision for BPM is the following?

“BPM is the means by which companies and governments improve their operations by using internal business expertise in new, scalable ways. Improvement is achieved by directly engaging business people in the design, definition, and creation of enterprise-class process applications.”

This vision provides a wider scope for BPM in that it specifies the change not only to the business process but also to the strategies, development methods, and most importantly, the thinking in project development. BPM is a business-led solution, and any tool set that is used to implement it must support that involvement.



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Figure 1-8. The BPM layer is what makes IBM Business Process Manager special

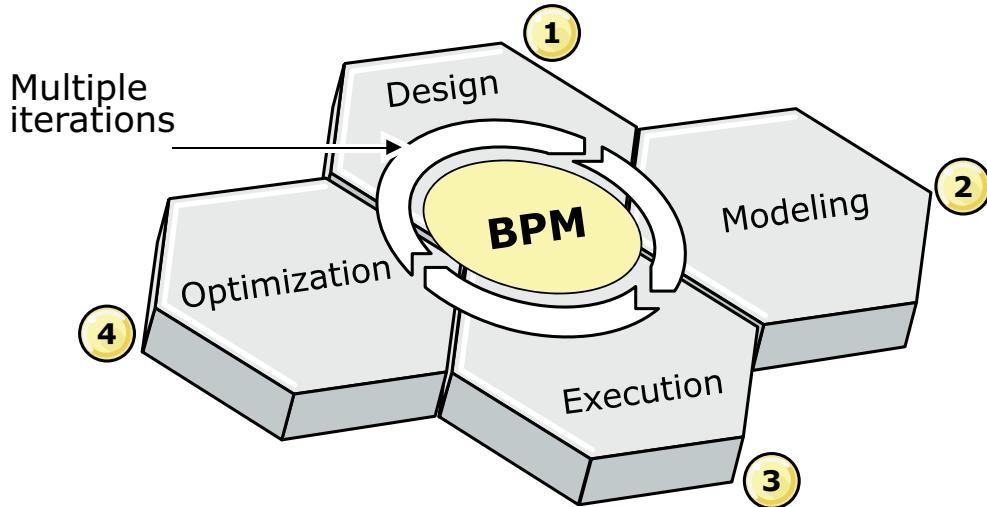
A good way to think about BPM is that it is a layer that gives you the control and visibility over the processes. IBM Business Process Manager:

- Sits between people and systems, and manages the process across those participants
- Prioritizes your work, but also gives you visibility and control
- Quickly and immediately implements changes when the process evolves and changes

The business users create and refine the process model. Developers start with the model and implement the solution to its final executable state. Every conversation revolves around a single executable model. IBM Business Process Manager doesn't have a model for development and a separate model for execution. It doesn't compile the model and then send it into another environment for execution. The single model has many advantages, simplifies development and governance, and allows all stakeholders to discuss the BPD as an executable asset rather than just being a picture like a model you might create inside a drawing software program.

IBM Business Process Manager orchestrates the services, systems, and users in your enterprise. It can leverage SOA and ESB capabilities to deliver process agility and visibility with reduced implementation cycle times. Your role is to harness the power of IBM Business Process Manager to realize the organization's process improvement goals.

IBM BPM lifecycle



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Figure 1-9. IBM BPM lifecycle

The BPM lifecycle has four phases: design, modeling, execution, and optimization.

Looking at the BPM lifecycle, it becomes apparent that there are opportunities to use the expertise of business and IT to collaborate in each phase of the lifecycle. Using this approach to BPM, the business process is stable and on target. This stability is because of the overall iterative improvement cycles in keeping up with business goals, business change, and opportunities within each phase to make critical adjustments.

Business and IT working in concert throughout the BPM lifecycle require a clear set of goals for each phase. Matched against those lifecycle phase goals are the responsibilities for each group. Clearly, the governance of the business process varies at each phase for each group, but the involvement of both ensures that the process improvement is realized.

The goals of each phase are as follows:

1. Design goals:

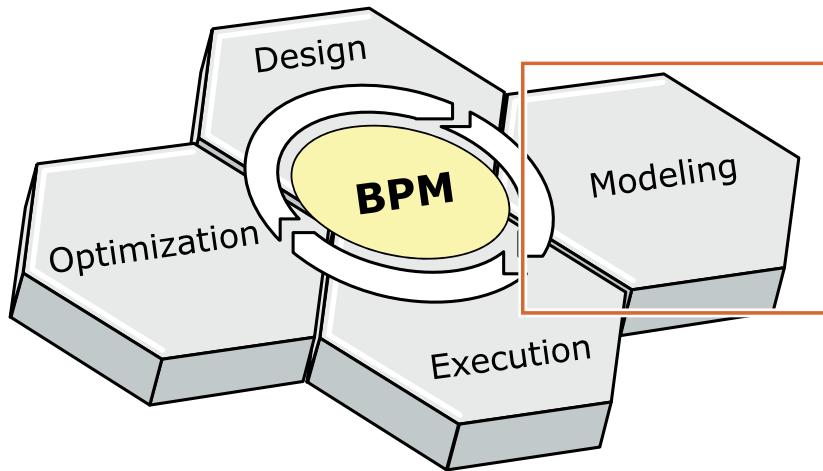
- Capture executive vision
- Process nomination
- Process prioritization
- Process discovery

- Process analysis
2. Modeling goals:
- Create a process model
 - Process adjustments
 - Process simulation
3. Execution goals:
- Implement the process model as a process application
 - Adjust business process requirements as needed
 - Deploy and monitor the process application
4. Optimization goals:
- Analyze and evaluate process performance data
 - Evaluate the business process ability to meet new business goals

After business practices or external conditions change or the current process is no longer optimal, BPM iterates again through the lifecycle. This continual iteration allows the effective management of business processes.

A true BPM implementation tool allows these iterations to be easily applied.

The modeling phase



- Process discovery and documentation
- Process analysis
- Simulation and adjustment

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Figure 1-10. The modeling phase

The course focuses on the modeling phase of the BPM lifecycle and how business and IT collaborate to create the process model. The modeling phase is more than just creation of the process model; it also requires an understanding of how to adjust the model to meet evolving business requirements. So, throughout this phase, the process model goes through continued analysis and a series of adjustments and refactoring efforts to obtain a model that can be implemented into a process application.

All the adjustments and testing allow for a process model that meets what the business expects in terms of an improved and efficient business process at the end of project development.

BPM done correctly results in business processes that are modeled, analyzed, and adjusted early and often. The BPM effort goes far beyond basically applying technology to a process to yield a changed process. Applying technology to automate a bad business process without regard to necessary analysis and adjustment efforts leads only to a more efficient, but still bad process.

1.2. About process modeling

About process modeling

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Figure 1-11. About process modeling

An understanding of a business process is necessary before it can be modeled.

What is a business process?



- A set of activities that takes specific inputs and converts them into specific outputs in a defined, predictable fashion

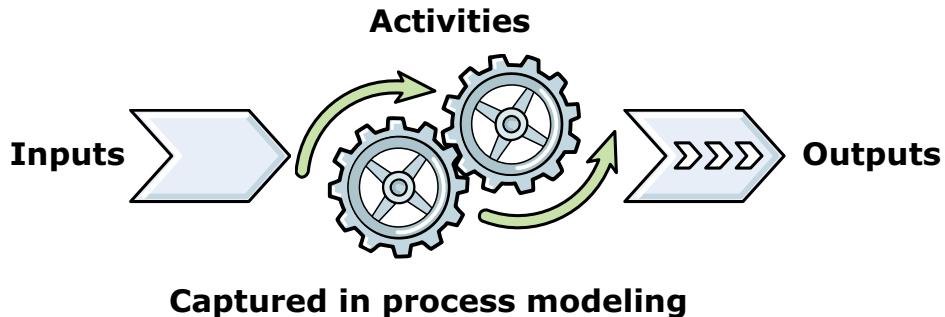
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Figure 1-12. What is a business process?

A business process is a set of tasks or activities that takes specific inputs and converts them into specific outputs in a defined, predictable fashion. Inputs typically consist of information or a set of information that triggers a set of activities in the process. Outputs are the results that the activities render.

What is process modeling?



- Captures the ordered sequence of the business process tasks or activities

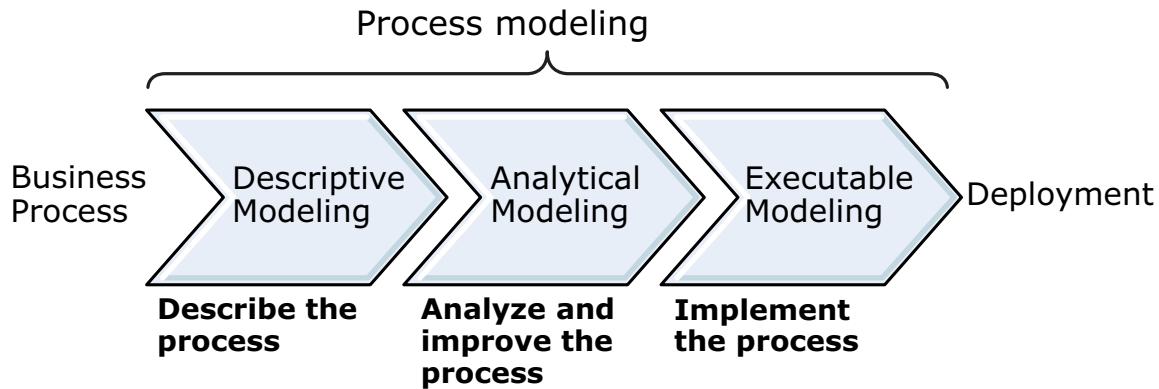
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Figure 1-13. What is process modeling?

Process modeling captures the ordered sequence of the business process tasks or activities, and the responsible roles that are conducting the activities. It also captures the conditional branching and the sequencing of the flow of work between activities, along with the supporting information from start to end.

Three-phase approach



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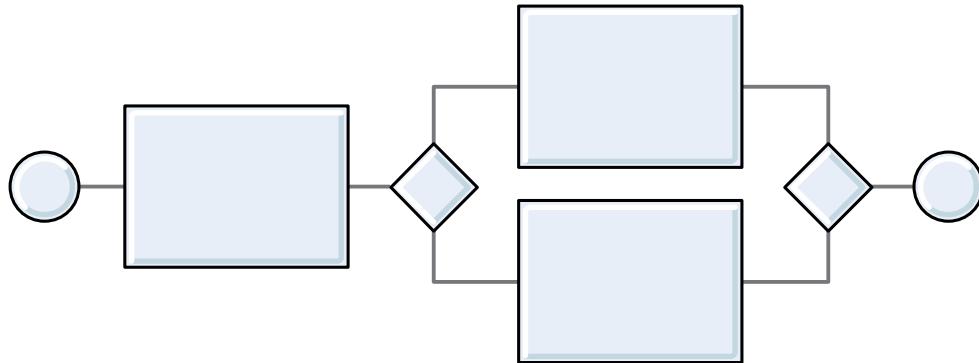
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Figure 1-14. Three-phase approach

Process modeling can be described as having a three-phase approach:

- **Phase I or descriptive modeling:** Describe the process. This high-level model provides a description of the process that is based on business requirements. The model is easily communicated across the organization.
- **Phase II or analytical modeling:** Analyze and improve the process. This analytical, more detailed modeling shows all pertinent activities and flow that are used to detail process requirements.
- **Phase III or executable modeling:** Implement the process. This model details the functional requirements to implement the executable process application.

What is a process model?



A graphical representation, or diagram, of the business process that is universally understood and easily communicated

Figure 1-15. What is a process model?

A good process model is a graphical representation or diagram of the business process that is universally understood. Business people understand it easily, and it is directly implemented in a business process management system (BPMS) such as IBM Business Process Manager.

For all parties to understand a process model universally, process owners, process participants (business), and the BPM development teams must easily understand each other and recognize the same concepts in the same context. There is no need for IT to redraw a process model to provide more clarity or a different point of view.

A good process model provides views into a process that are clearly and easily communicated in 5 minutes or less, at every level of granularity.

Process model development

Now that it is established when and what must be accomplished in process modeling, the next thing is to focus on is how process modeling is accomplished in terms of development methods.

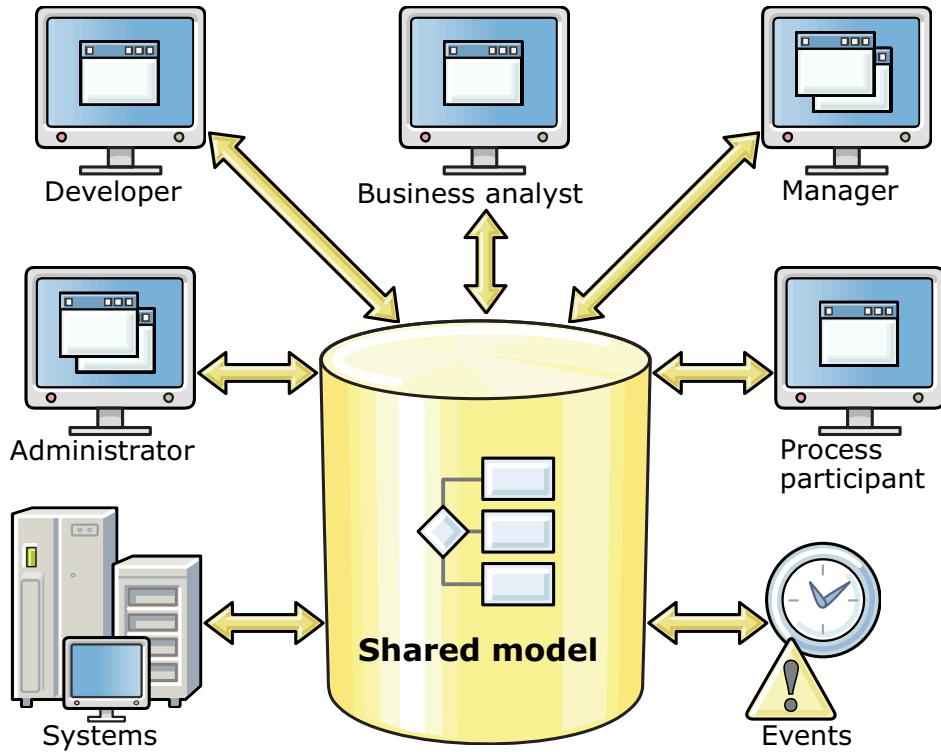
Understanding how to model a process requires comprehension of the project development methods that are used for BPM. Realize that project development strategies for process models differ from standard methods, especially when you consider the usage of process models. In standard project development, the shelf life of diagrams that are derived from requirements is only from the business hand-off to the development teams. In essence, these requirements are translated into code, and their use ends at that point.

BPM process models are different. Going back to the BPM lifecycle, notice that the process model evolves in terms of usage. The prolonged shelf life of a process model allows for the iterative BPM lifecycle because it is data-driven and not code-driven. This setting provides the stability for a process application without fear of having to start from scratch when change is needed.

This data-driven process model is known as a business process definition (BPD) in IBM Process Designer.



The right process model development strategy



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Figure 1-16. The right process model development strategy

IBM Business Process Manager uses a single shared environment for project design and development. All process artifacts are stored in a single shared model architecture. All parties that are involved in the effort to define, model, implement, measure, and improve the process are working from a common shared model that encapsulates all of the various components. It helps maintain the vision of bringing business and IT together.

The following list shows various people who are all using the same business process definition, or process model:

- Business analysts who are modeling the process
- The IT developers who are constructing the detailed implementation of the model
- The responsible process participants who are completing their activities in the process
- The process owner and analysts who monitor the process performance and identify improvements

The model of the process that the analysts and developers build is the same one that completes at run time. It is the same one that is used to create reports on the performance and status of the process, and the same one that is used to implement process improvements.

1.3. BPM project development



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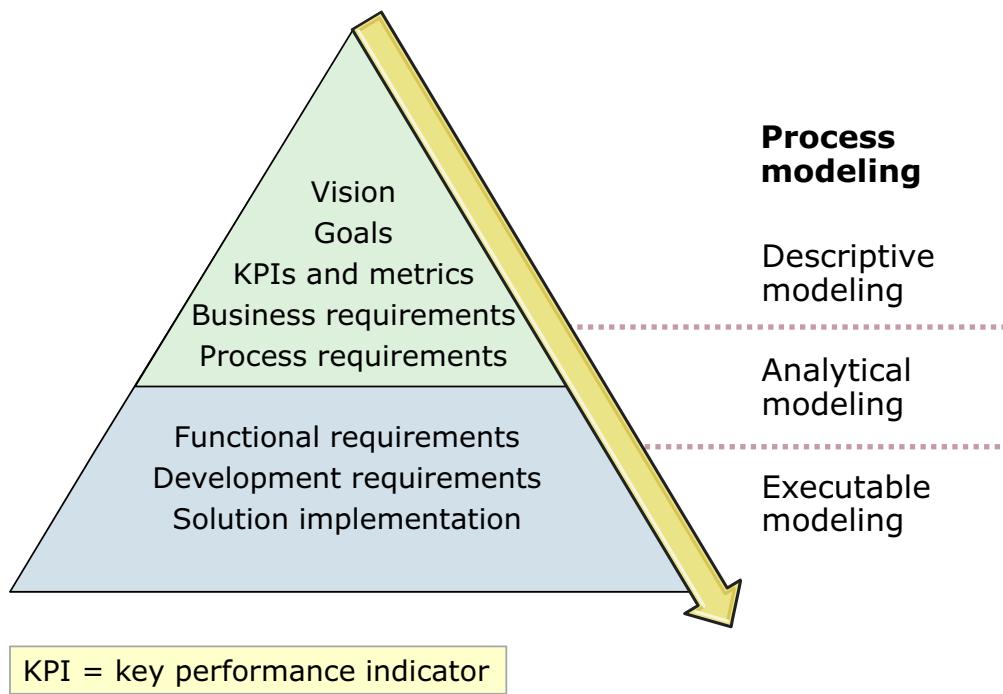
Figure 1-17. BPM project development

The established standards and development methods typically reinforce the project development for any IT initiative. A BPM project, especially one that includes the broader vision and definitions that are provided, would not fit the typical project development standards because the key BPM project components are slightly different. This difference is because the BPM project components reinforce the process first, and the solution second. In BPM, everything is process-driven, so the development method that is used to develop process models and the eventual process application must be uniquely focused on the process needs. It is not a system that is traditionally used to develop projects.

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IBM BPM project components



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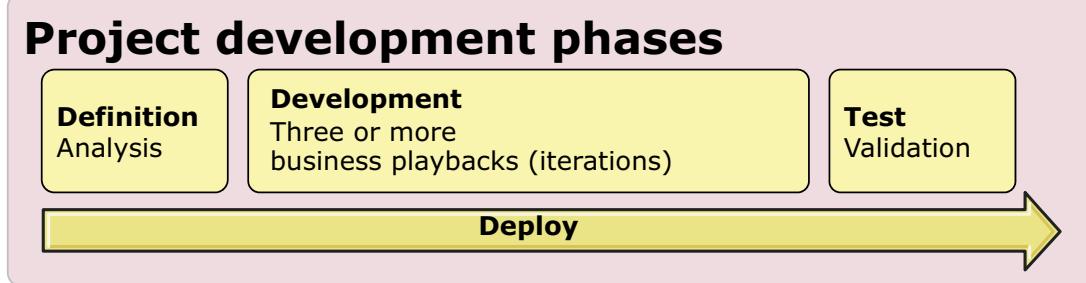
Figure 1-18. IBM BPM project components

The top-down diagram view of the BPM components provides a quick view of how a typical BPM project development evolves. Any of these components that are missing from a project would interrupt the effective design, definition, and creation of the process application, and curtail the engagement of business people.

KPI = key performance indicator



Project development phases



- **Definition:**
 - Discover and define the process
 - Analyze the process for improvements, model the process, and set the process performance measurement criteria
- **Development:**
 - Prepare the process application for deployment by using an iterative development with three or more playbacks
- **Test:**
 - Validate the process application performance in achieving expected business process goals in a production user environment

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Figure 1-19. Project development phases

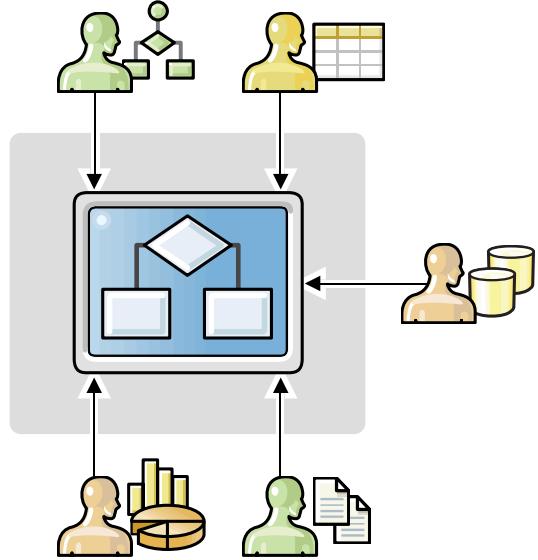
In contrast to the traditional IT application development approach stands the phased BPM project development approach that closely aligns to the overall BPM lifecycle. This approach also focuses on the BPM project components and allows for the different phases of process modeling.

The project development phases are:

- **Definition:** Discover and define the process. Analyze the process for improvements, model the process, and set the process performance measurement criteria.
- **Development:** Prepare the process application for deployment with an iterative development with three or more playbacks.
- **Test:** Validate the process application performance in achieving expected business process goals in a production or user environment.

IBM BPM project teams

- Process sponsor
- Process owner
- BPM project manager or program manager
- Subject matter experts
 - Core process activities
- Core team members
 - Analyst
 - Developer
 - Solution architect
- Administrators
- Facilitators
 - Ad-hoc member (optional)



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Figure 1-20. IBM BPM project teams

The unique phases and components of a BPM project require a specific set of project roles, including:

- **Process sponsor:** Responsible for establishing the project goals and scope, securing organizational support and resources, and ensuring alignment with organizational business goals
- **Process owner:** The person who is accountable for the successful execution of the process, knows the process from end to end at a high level, and can identify the subject matter experts
- **BPM project or program manager:** The person responsible for the success of the project
- **Subject matter experts:** People with knowledge of specific process resources, or systems
- **Core team members:** Business process management (BPM) development teams, typically including BPM analysts, BPM developers (includes integration designer developers and technical consultants), and solution architect (advanced role that can lead teams and serve as an analyst and developer)
- **Administrator:** Installs, updates, and configures the business process management system
- **Facilitator:** (optional) Typically manages the collaboration meetings for a BPM team

All of these participants work together to collaborate in the design of the process model.

1.4. About playbacks, specifically Playback 0

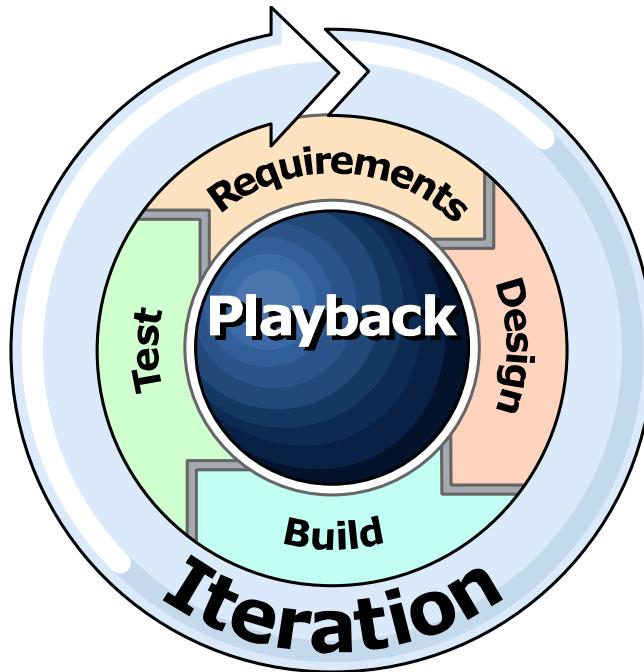
The slide features a blue header bar with the text "IBM Training" on the left and the IBM logo on the right. The main content area has a light blue diagonal striped background. The title "About playbacks, specifically Playback 0" is centered in large, bold, dark blue font. At the bottom center, there is a small copyright notice: "© Copyright IBM Corporation 2016" followed by "Course materials may not be reproduced in whole or in part without the prior written permission of IBM."

Figure 1-21. About playbacks, specifically Playback 0

A playback between business and IT is a focused demonstration of a partially implemented process model at the designated development phase. This phase includes the goal of discussion, consensus building, collaborative improvement, and ultimate approval of the process model. Playbacks enable the iterative development of the process application.

Playbacks provide early visibility and input from the business group on process application functions. The perspective of the business group at the early stages benefits development because the business quickly identifies adjustments to requirements well before the final product is implemented. The ability to shift direction during the definition and development phase is key to reaching the ultimate BPM project target.

Playback iterations



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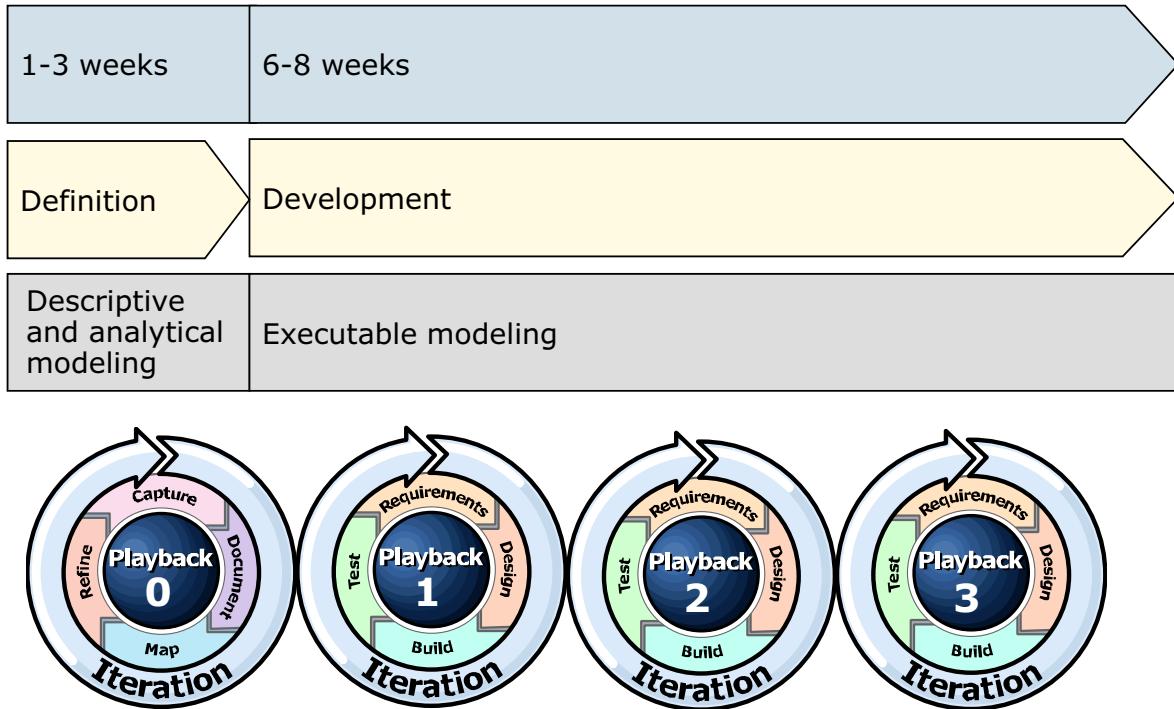
Figure 1-22. Playback iterations

Iteration of your process is one critical key for BPM success.

An “iteration” of a playback allows users to focus on a part of the overall project and have it validated before moving on to the next part.

Most playbacks allow users to gather requirements, design and build solutions, and then have them validated (tested). When the playback is validated, you move to the next area of focus until this part of the project is complete.

Playback cycles



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Figure 1-23. Playback cycles

Often playbacks are conducted as themed stages. The number of actual collaboration meetings that are conducted inside of each stage can vary. Usually, multiple smaller playbacks are conducted and target individual groups with a specialized role (developers, administrators, and other roles), but these smaller playbacks build upon one another, leading to a final playback. During this final playback, make sure that you reach consensus before moving into the next stage.

This slide is an example of a project plan that contains a typical playback timeline and content of each of the playbacks. In modeling and implementation, shorter cycles than what your company might currently be accustomed to are good practices. The agile development approach with shorter cycles is critical to BPM success. Larger projects are scoped down to smaller release cycles. Creating smaller chunks for a project has many benefits, as follows:

- Overall project risk is reduced.
- Working code can be released into production in a shorter amount of time.
- Changes to the project cause less rework if releases occur on a more regular basis.

Here are some examples of what happens during these playbacks in the suggested project plan:

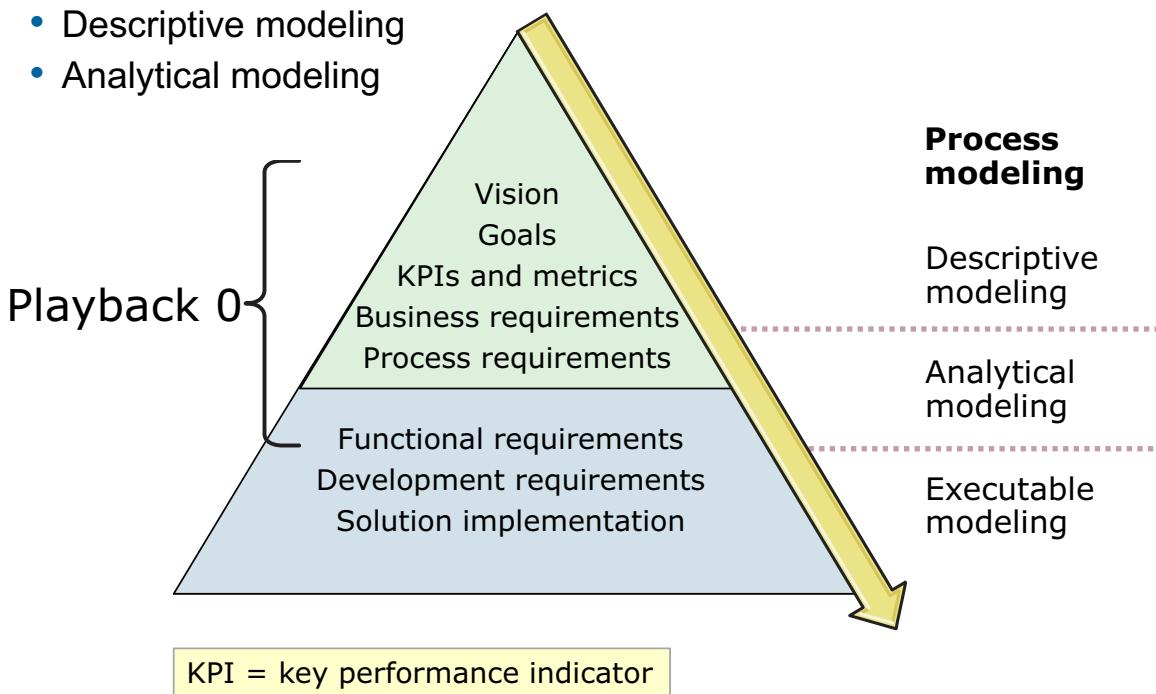
- Playback 0: Focus on high-level business process understanding and building consensus

- Process discovery, as-is model or map, process analysis, ending with a “to-be” model ready for implementation
- Playback 1: Focus on user interface design and implementation
 - Data model and process flow implementation
 - Human service or coach design, and data mapping
 - Business rules, process flow control implementation
- Playback 2: Focus on integrations
 - Creating a decision service
 - Implementing message events
- Playback 3: Focus on consolidation of the previous themes and producing an end-to-end solution
 - Handling errors in services
 - Deploying process applications



Playback 0

- Descriptive modeling
- Analytical modeling



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Figure 1-24. Playback 0

The definition stage of project development focuses primarily on descriptive and analytical process modeling. There is a Playback 0 for the definition stage. The goal for Playback 0 is that the concerns and achievements at this stage of project development are iterated until a final solution is reached.

The process must be discovered before it is modeled as a diagram. That requires sessions with the business process owner to uncover the particulars of the business process at a high level. As the process is defined, it is then necessary to start to analyze and create initial models if possible. Use an incremental approach from the current state to a future state business process that is accepted and agreed upon as a final “to-be” model.

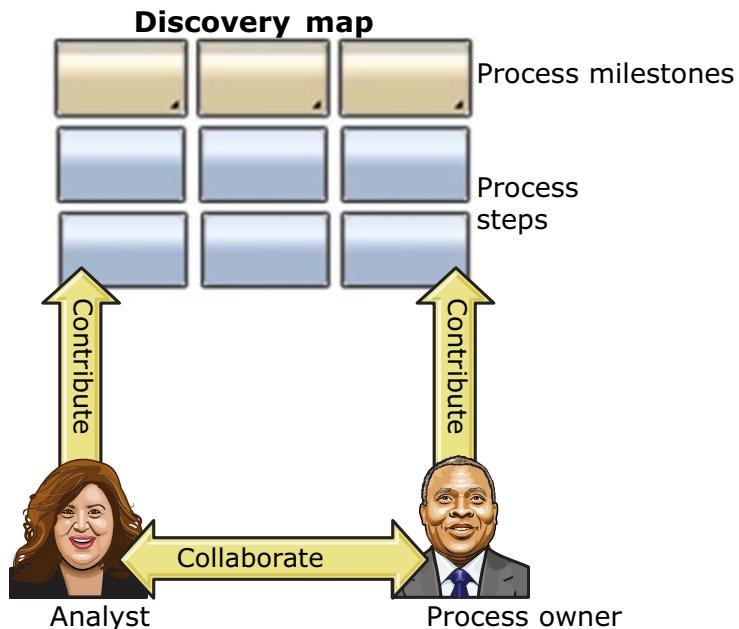
Descriptive modeling

The descriptive modeling that is accomplished at early stages can be done with various tools, including Blueworks Live. Blueworks Live provides the “best-of-breed” for process modeling that is focused on process discovery and analysis. A brief introduction to Blueworks Live is in the next unit.

Early stage, or descriptive, modeling that is based on discovery and analysis has a specific outcome. Process model diagrams and documentation are refined until both the process owner (business) and the BPM team designate that the business process is completed and validated. The focus now changes from business requirements to actual process requirements.

The milestones to get to the final stage in descriptive modeling are process discovery and the as-is model.

Playback 0: Process discovery (1 of 2)



- Document the current state of the business process
- BPM analyst, process owner, and BPM project manager

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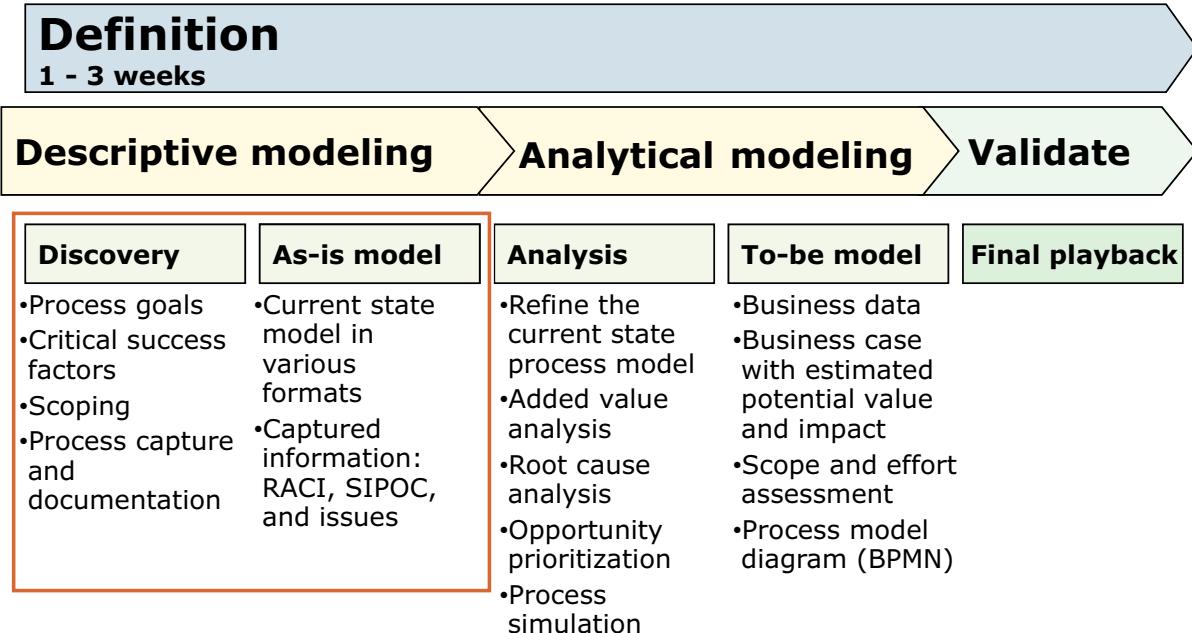
Figure 1-25. Playback 0: Process discovery (1 of 2)

The process discovery effort in Playback 0 allows for the capture of the initial process information that translates into the initial process model. It is typically an effort from process owners and BPM team members who want to make sure that the current state of the business process is documented. This documentation can be stored in various tools available to the team, including Blueworks Live. However, Blueworks Live has the advantage of providing connectivity to IBM Business Process Manager. With Blueworks Live, the documentation effort maintains a high level of usage, even beyond process discovery and analysis of the business process.

Agile software development places a greater value on working code than on comprehensive documentation. Although documentation is valuable, code that works is more valuable. Process discovery should attempt to capture the process as quickly and accurately as possible, but should not sacrifice project time to create documentation that does not lead to the project goals. Capturing and documenting processes inside of a tool like Blueworks Live and IBM Business Process Manager directly contribute to implementing the process.

Playback 0: Process discovery (2 of 2)

Playback zero



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Figure 1-26. Playback 0: Process discovery (2 of 2)

Descriptive modeling is discovering what you currently have; it is providing visibility. The aim is to document the as-is model, or what you currently do. This action provides the baseline for going forward.

Moving from discovery to model:

Business process discovery documentation, or mapping, with as much process detail as possible, is at times a quick process. The beginning of a process modeling effort can happen early. Therefore, the most common question when in the midst of a process discovery effort is: When do you move from process discovery to process modeling?

Several aspects must be considered to answer this question.

It is time to transfer to a process model when process discovery sessions exhaust all requirements to communicate the following concepts:

- What a process is
- Who is responsible for process task completions
- Who is documenting the problems within the process

Also, consider the conversations in the process discovery sessions during Playback 0 meetings. If the questions are no longer centered around “What does this process do?” and start to center around “What does this process look like?”, then the move to a process model is at hand.



Playback 0: Process analysis

Playback zero

Definition

1 - 3 weeks

Descriptive modeling

Analytical modeling

Validate

Discovery

- Process goals
- Critical success factors
- Scoping
- Process capture and documentation

As-is model

- Current state model in various formats
- Captured information: RACI, SIPOC, and issues

Analysis

- Refine the current state process model
- Added value analysis
- Root cause analysis
- Opportunity prioritization
- Process simulation

To-be model

- Business data
- Business case with estimated potential value and impact
- Scope and effort assessment
- Process model diagram (BPMN)

Final playback

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Figure 1-27. Playback 0: Process analysis

The next phase in process modeling and Playback 0 is analytical modeling. The milestones to get to the final stage in analytical modeling are analysis and the “to-be” model.

Discovery documentation is a “just the facts” effort, meaning the only thing that interests the BPM analyst and process owner is that the process in its current state is captured. A good example is the capture of process problems, or issues. During discovery, it is not important to try to solve process issues, only to document them. This action is where the next step in Playback 0 starts to take shape: process analysis.

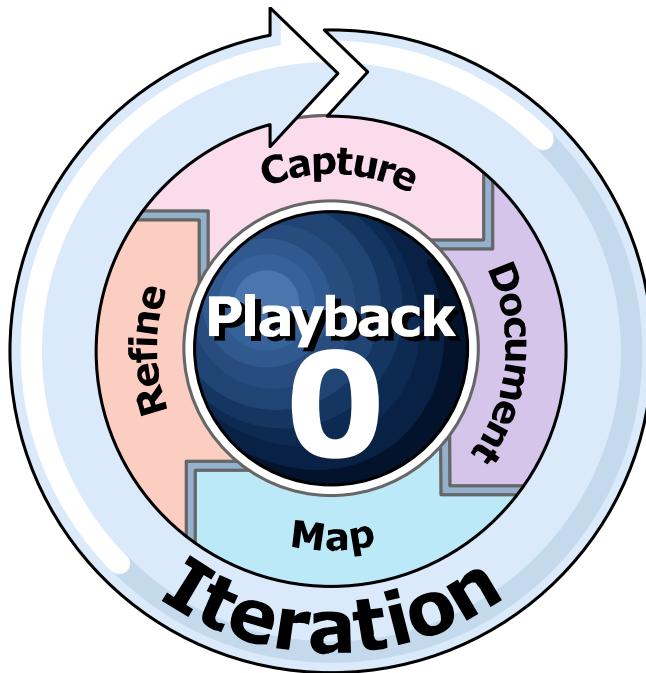
Process analysis is when the business process is continually refined until analysis goals are reached, such as solving process pain points through root cause analysis. Other process analysis goals include added-value analysis of each process activity that is captured and analysis to ensure the correct priority for improvement opportunities. With process analysis, the business requirements are vetted and the process requirements are aligned so that the “to-be” process model is ready to be finalized.

This course does not cover in detail the “how to” for process discovery and analysis. IBM Cloud Education offers courses on process analysis methods for comprehensive training on process analysis.

You might also notice that the third phase, executable modeling, is not shown here because executable modeling comes later; therefore, it is covered in the next part of the course.



Playback 0: Iteration



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Figure 1-28. Playback 0: Iteration

Playback 0 has a unique set of achievements during this stage of project development. A BPM analyst handles Playback 0 when working in concert with the process owner and BPM project manager. BPM project managers need the data from Playback 0 to plan for the next project development cycles, or playback stages. The process owner is interested in the business process. The successful outcome of Playback 0 for a process owner is to have the most efficient and effective business process that is modeled for continued use in implementation.

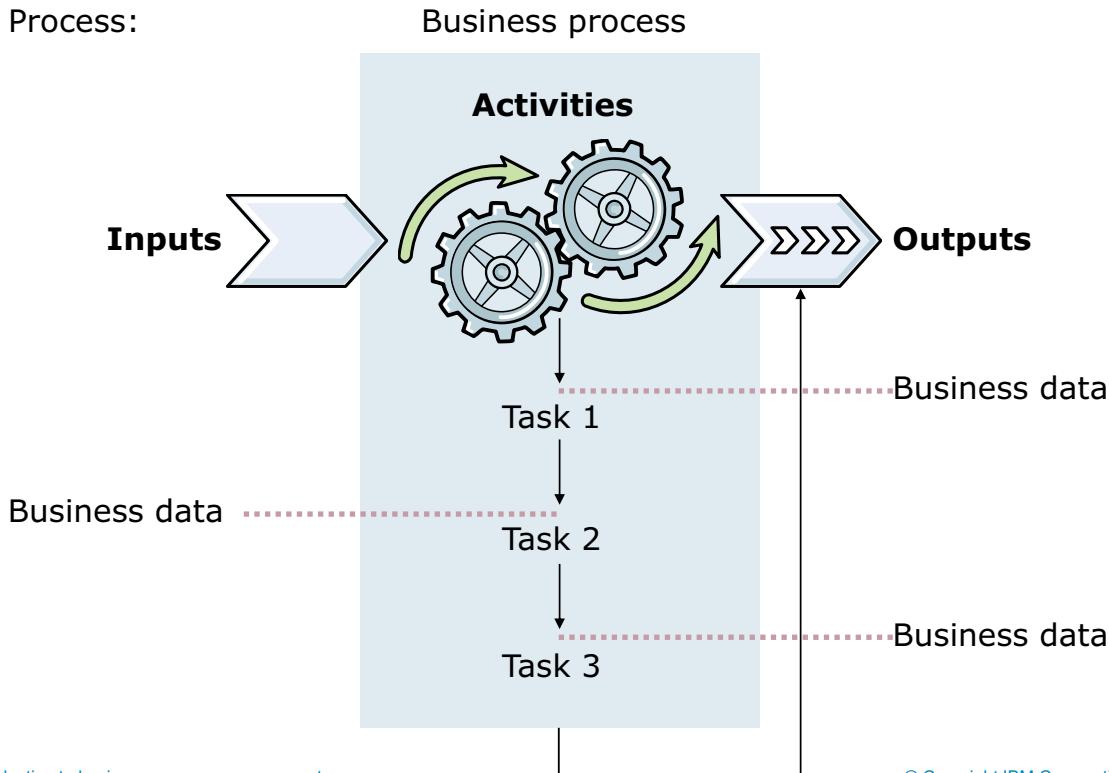
To achieve both objectives, the strategy that is used to gather Playback 0 data is the iterative phase approach of:

- **Capture:** Make sure that the business process information is shared fully
- **Document:** Refine documentation as the analysis continues because there are more stakeholders than just the process owner
- **Map:** Create a discovery map that can clearly define the important information in an easy-to-read manner
- **Refine:** Allow for adjustment to a business process as a clear definition of the business process and process model is incrementally made

All requirements in Playback 0 are iterated, including the model that is finalized for validation. It is typical to encounter scope creep, or a broadening of the requirements to implement during this

iteration. Keep in mind the duration of the iteration and use the backlog to document those requirements that do not make this iteration.

Business data



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Figure 1-29. Business data

Analytical modeling allows the process owner and BPM team to identify the business data that is needed for the process model. In general, business data provides the context of the process task for each responsible role for task completion. For example, if the business process is to process an insurance claim, the task verifies the claim, and the business data provides the claim type, claim number, claim description, and claim submitter.

When defining the business data for a process model, BPM teams look at the process as a whole. The question for each activity becomes: “What data does the process require to complete this task?” In the end, the process analysis produces the “to-be” process model and a business data model as well.

Business data is not implemented during Playback 0. Capture the inputs and outputs of activities or tasks in the documentation. Later in Playback 1, you implement the business data as part of the process. For now, business data is useful to conceptualize the process and to determine the following information: which activities must be part of the process, what occurs inside of the activity, what the outputs of the activity are, and what input data is necessary for the next activity.

1.5. The Hiring Requisition Process

The Hiring Requisition Process

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Figure 1-30. The Hiring Requisition Process

A company is experiencing much growth and must hire many people in a short amount of time. The process that you are going to examine and model is called the Hiring Requisition process. This process covers a new job position through submission, approval, and completion so applicants can apply for the job position.

The following process requirements already went through an analysis stage and were refined. For more information about how to get to this point in your process and complete the discovery, analysis, and refinement stages, consider taking the courses on process analysis methods.

Core requirements

- 1.1: A Hiring Manager submits a hiring requisition to the HR department. The request contains the following information:
 - Requisition number
 - Date of request
 - Requester
 - Date position available
 - Job title
 - Job description

- Job level
 - Number of direct reports
 - Division
 - Department
 - Salary to offer
 - Bonus amount
 - Hiring Manager comments
 - New position
- 2.1: If the answer to “New position” is yes, the request is forwarded to a General Manager. After the General Manager receives the request, the General Manager indicates approval or disapproval.
 - 2.2: If the request is not approved, the General Manager specifies a reason and the request is closed. If the request is approved, a salary compliance check is conducted.
 - 2.3: The Hiring Manager is notified of the General Manager’s decision after the General Manager’s approval step.
 - 2.4: When the hiring requisition is submitted, an automated system level checks for salary compliance. If the request meets salary compliance, the hiring request is automatically posted to the HR Positions database and made available for dissemination.
 - 2.5: When a request violates the established salary guidelines of the company, the HR Administrator can approve or reject the requested salary override.
 - 2.6: If the salary override is approved, the request is posted to the HR Positions database and made available for dissemination.
 - 2.7: If HR Administrators reject the requested salary, they must provide comments about the violation, add a proposed salary, and send the request back to the Hiring Manager who originated the request.
 - 2.8: When the Hiring Manager gets the request back because of a rejection, the Hiring Manager attempts to negotiate an adjusted salary or can cancel the request. If the negotiation is successful, the request is resubmitted back to the same HR Administrator.
 - 2.9: All hiring requests must be added to the HR Positions database regardless of the disposition at the end of the process during a finalization activity.
 - 2.10: The HR Administrator has 4 hours to complete the review. If the review is not completed within 4 hours, an email is sent to the HR Administrator. The email notifies the HR Administrator of the missed deadline.

Unit summary

- Define business process management (BPM)
- List and describe the phases in the BPM lifecycle procedure
- Define process modeling
- Describe Playback 0 and the achievements that are reached during this stage of project development

Review questions

1. True or False?

Playbacks are based on a waterfall methodology.

2. True or False?

When defining the business data model for a process model, BPM teams look at the process as a whole.

3. What are the four phases of the IBM Business Process Manager lifecycle?

- A. Design, Test, Action, and Deploy
- B. Design, Modeling, Execution, and Optimization
- C. Design, Modeling, Execution, and Monitor

4. What are the four stages of Playback 0?

- A. Requirements, Document, Build, and Refine
- B. Requirements, Design, Build, and Test
- C. Capture, Design, Map, and Test
- D. Capture, Document, Map, and Refine

Figure 1-32. Review questions

Write your answers here:

1.

2.

3.

4.

Review answers

- 1. False.** Playbacks are based on an agile methodology.
- 2. True.**
- 3. B:** Design, Modeling, Execution, and Optimization
- 4. D:** Capture, Document, Map, and Refine

Unit 2. Introduction to IBM Business Process Manager and integration with other tools

Estimated time

01:30

Overview

This unit is an overview of IBM Business Process Manager and integration with other tools. It describes how to create a process application in the Process Center, examines the Designer and Inspector views of the web Process Designer, and introduces the Process Portal.

How you will check your progress

- Checkpoint questions

Unit objectives

- Describe how to use IBM Business Process Manager to accomplish process modeling goals
- Explain how to create and modify process applications in the Process Center
- Explain how to create and modify process models with the Designer view of the web Process Designer
- Describe how to validate process models with the Inspector view of the web Process Designer
- Describe the purpose of the Process Portal
- Describe the purpose and function of Blueworks Live
- Describe integration with other tools and products

Topics

- About IBM Business Process Manager
- The Process Center
- IBM Web Process Designer
- The Process Portal
- Introduction to BPM on Cloud

Introduction to IBM Business Process Manager and integration
with other tools

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Figure 2-2. Topics

2.1. About IBM Business Process Manager

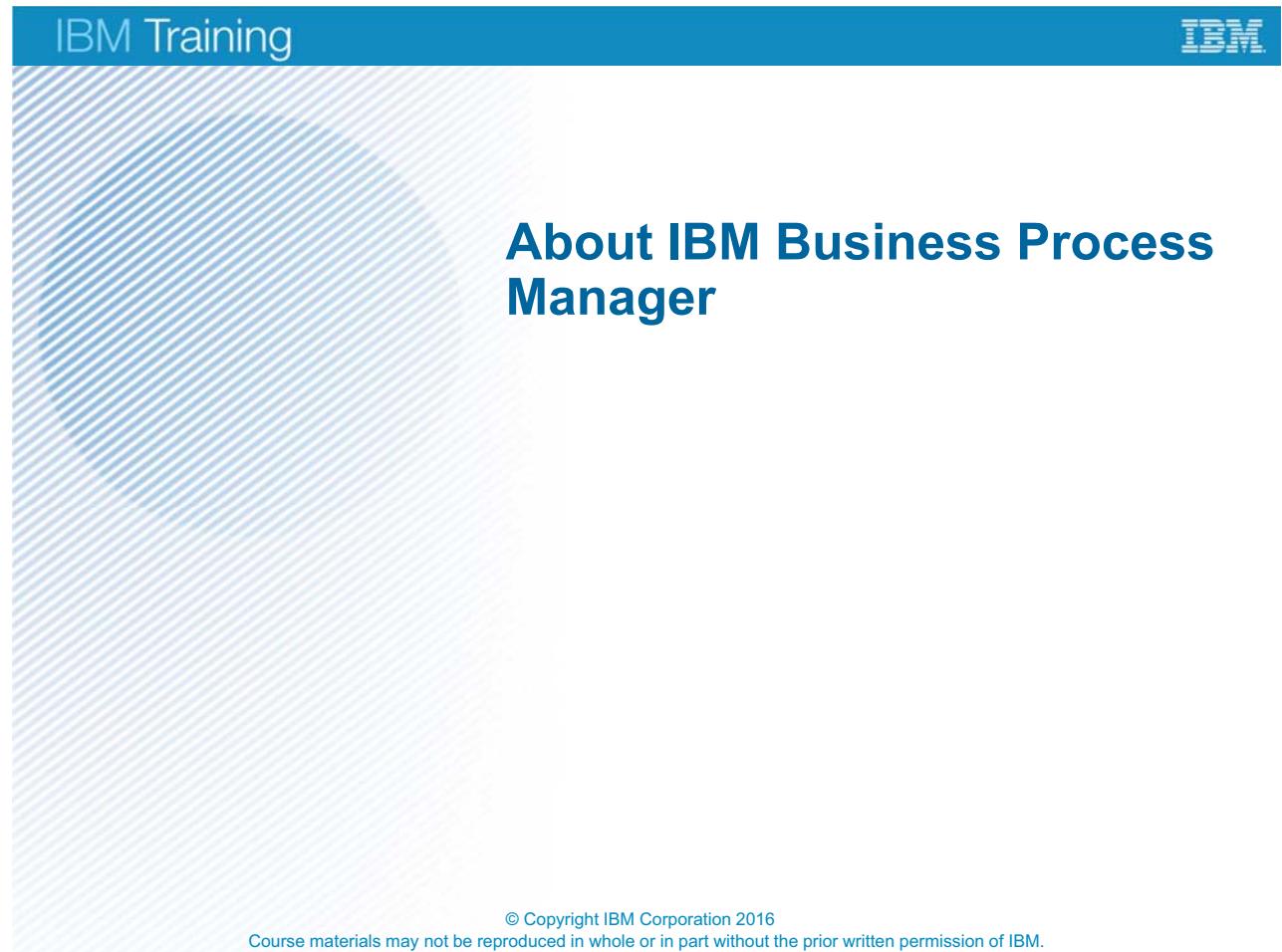


Figure 2-3. About IBM Business Process Manager

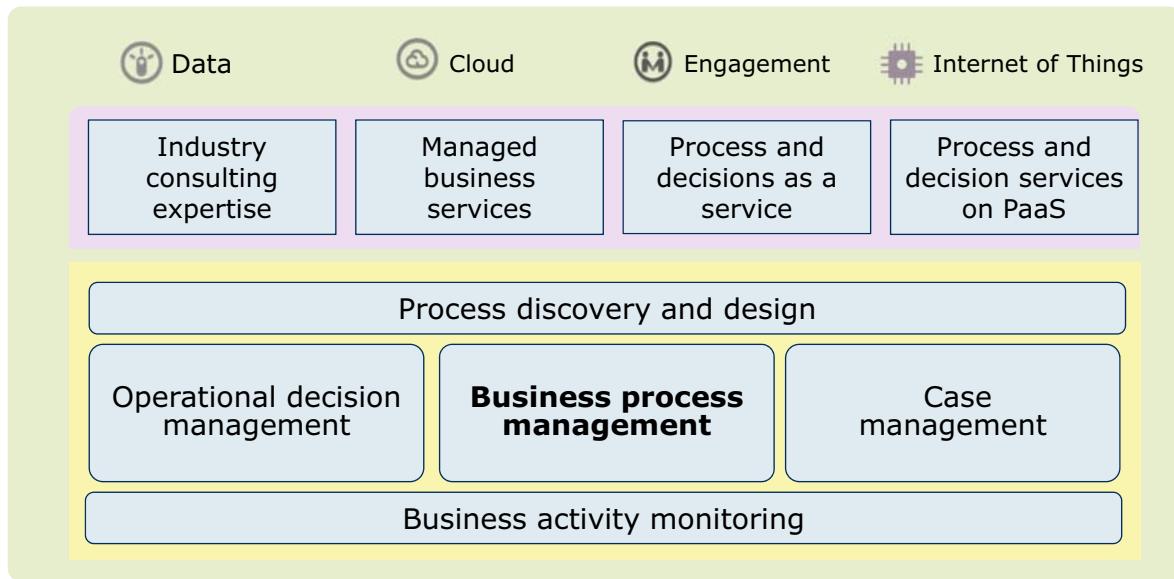
Process modeling is a three-phase approach: descriptive, analytical, and executable. BPM toolsets strive to meet those objectives in process modeling and also to fit within the parameters of agile development and collaboration between business and information technology (IT).

IBM Training



The Smarter Process suite

IBM's approach for reinventing business operations to enable greater customer-centricity while driving innovation into end-to-end processes



Introduction to IBM Business Process Manager and integration
with other tools

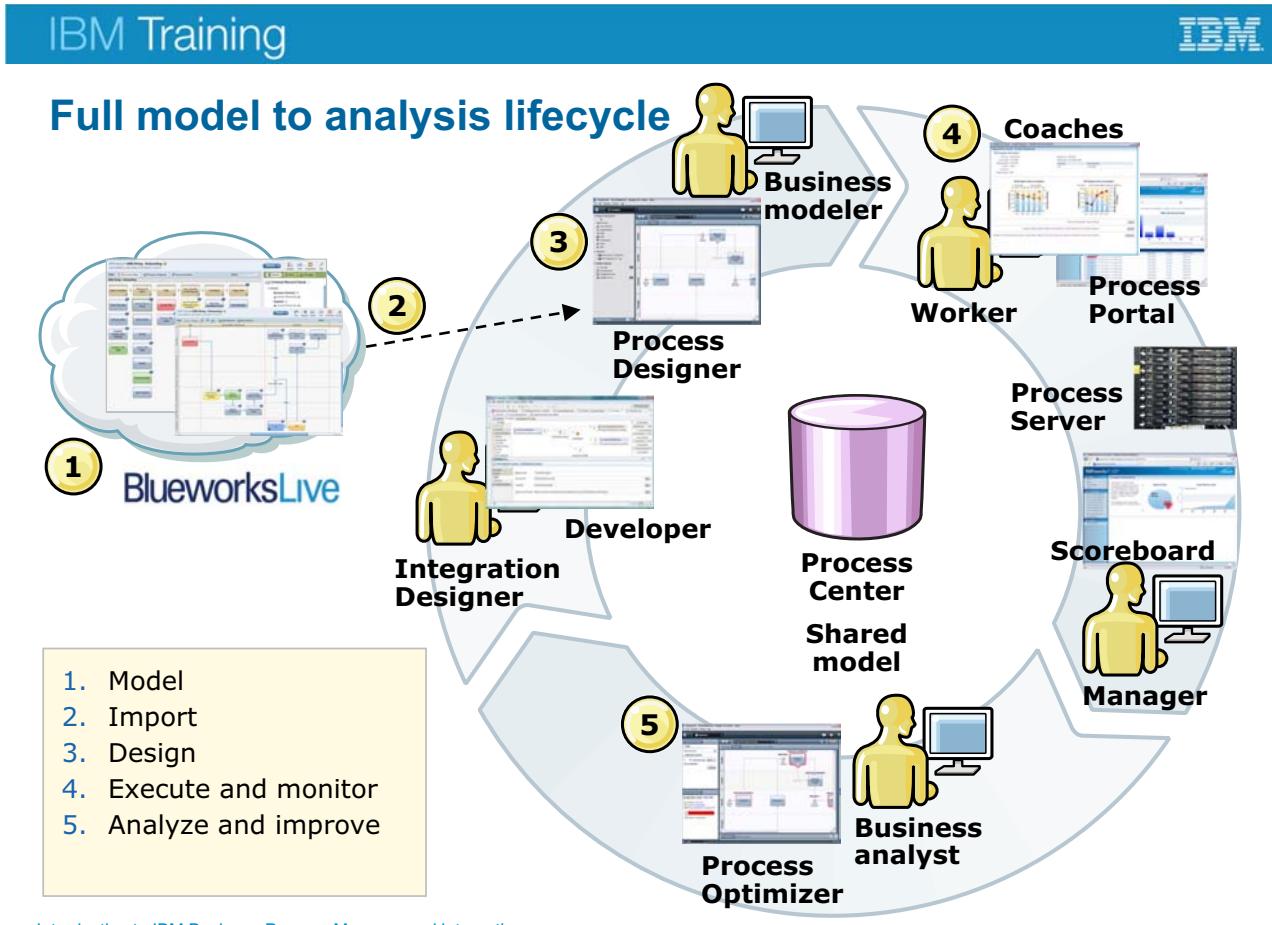
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Figure 2-4. The Smarter Process suite

Smarter Process combines real-time automation and team collaboration to ensure that tasks are completed quickly and easily.

Smarter Process integrates the control and visibility of the process lifecycle across lines of business, IT, and customers.

Smarter Process analyzes and optimizes performance and behavior to improve outcomes.



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Figure 2-5. Full model to analysis lifecycle

The analysis lifecycle is as follows:

- Model:** Create business processes in either Blueworks Live, a cloud-based, collaboration tool for in-process discovery, modeling, documentation, and process automation or some other tools.
- Import:** As soon as it is created, import the process into Process Designer for detailed design and executions. Subscribe to process changes.
- Design:** Add coaches, services and other configuration objects.
- Execute and monitor:** As processes execute, the Process Portal provides visibility to the number of processes, what activities are overdue, and how the organization is doing against SLAs.
- Analyze and improve:** Process information is automatically captured, and Process Designer gives the ability to analyze the information and simulate the impact of changes.

The cornerstone of this technology approach to BPM is the concept of the “shared model”: all parties that are involved in the effort to define, model, implement, measure, and improve the process are working from a common shared platform that encapsulates all of the various components. It involves the analyst who models the process, the developers who construct the detailed implementation of it, the participants who execute the process, and the process owner and

analysts who monitor and identify improvements. They are all using the same tool, which uses the same definition of the process. The model of the process that the analysts and developers build is the same one that executes at run time. It also is the same one that is used to create reports on the current performance and status of the process, and is the same one that is used to model and simulate potential improvements.

- **Blueworks Live**

Blueworks Live is a cloud-based, collaboration tool for in process discovery, modeling, documentation, and process automation.

- **Process Center**

The Process Center includes a repository for all process artifacts and provides the tools that are required to develop, deploy, and manage process applications.

- **Process Server**

Process Server is an IBM Business Process Manager runtime environment that supports running a range of business processes and integrations. By using Process Server, you can run processes as you build them.

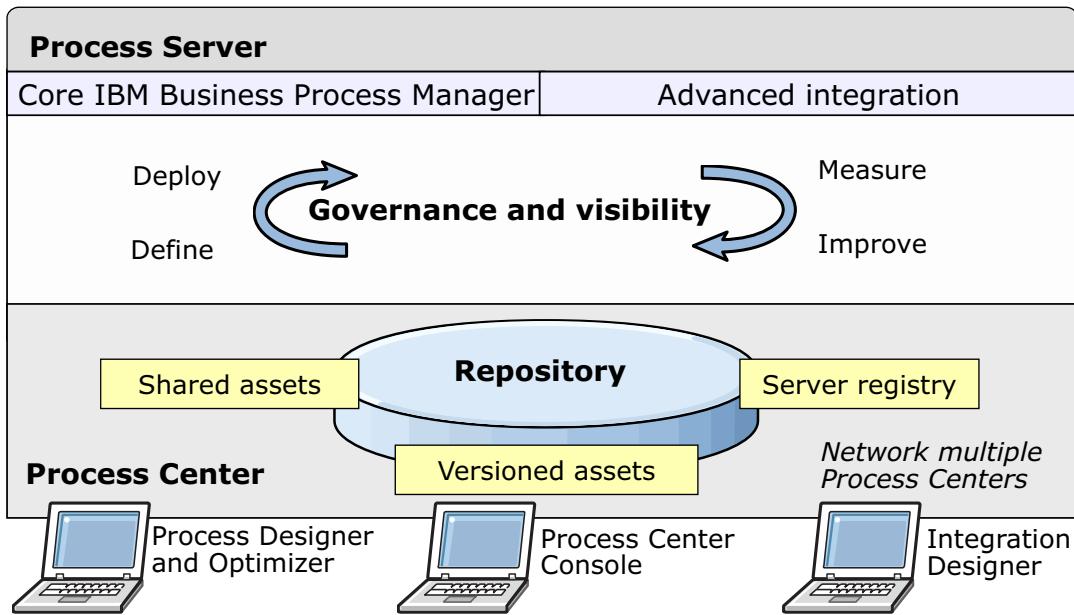
- **IBM Web Process Designer**

IBM Web Process Designer is a design time tool that is used to develop process applications.

- **IBM Integration Designer**

IBM Integration Designer is a development environment for building end-to-end applications. It includes numerous prepackaged integration adapters to build complex automated processes.

Product overview: IBM Business Process Manager



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Figure 2-6. Product overview: IBM Business Process Manager

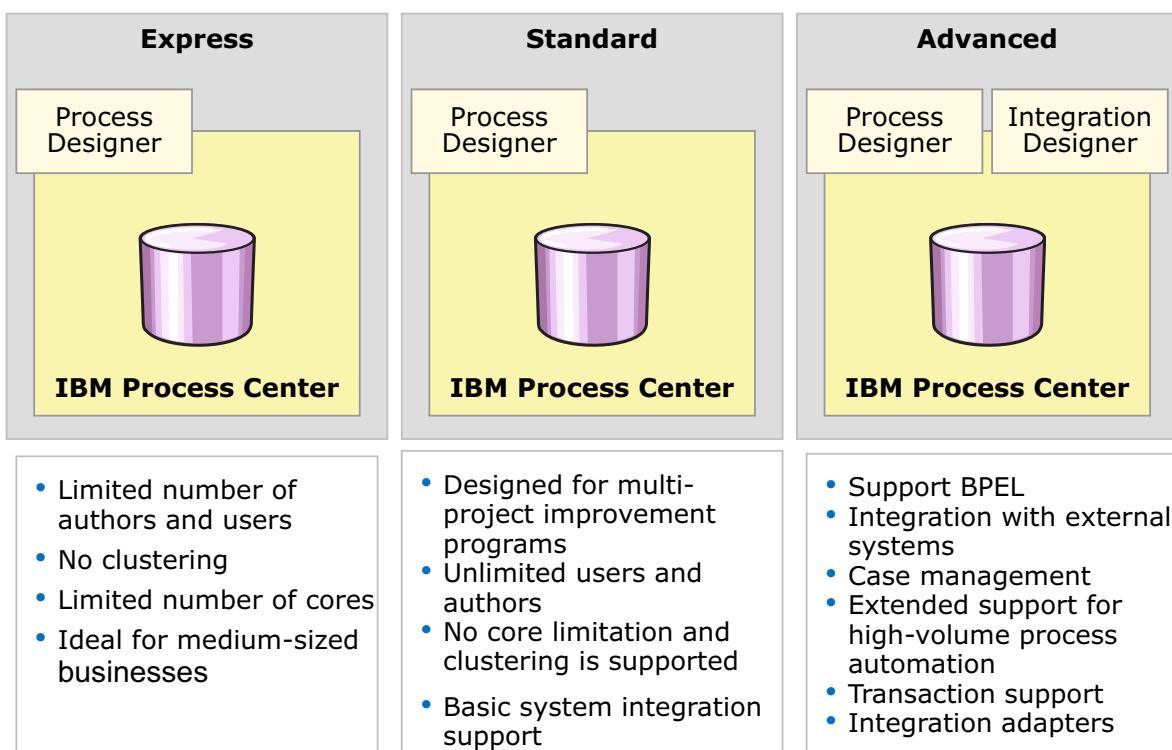
This slide is a high-level overview of a basic IBM Business Process Manager environment.

IBM Business Process Manager brings together a number of technologies and capabilities under a single unified platform with which customers can build human-centric and system-centric business processes. It enables organizations to implement a business's process lifecycle and includes tools and runtime for process design, execution, monitoring, and optimization. A business process management environment mainly consists of a repository environment to store and develop various elements: IBM Business Process Manager artifacts, authoring tools for process developers to develop and test processes, one or more runtime environments to deploy processes, and a set of administration and monitoring tools to administer and monitor business processes.

IBM Training



IBM Business Process Manager configurations



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Figure 2-7. IBM Business Process Manager configurations

IBM Business Process Manager is a single BPM environment that combines human-centric and integration-centric capabilities into a unified product. Different configurations of the product are available for different users, and satisfy different needs in the enterprise. Product configurations can be combined for collaborative authoring and network-deployed runtime environments. Three versions of IBM Business Process Manager are offered, each one building upon the capabilities of the previous one, but all maintaining the core IBM Business Process Manager product.

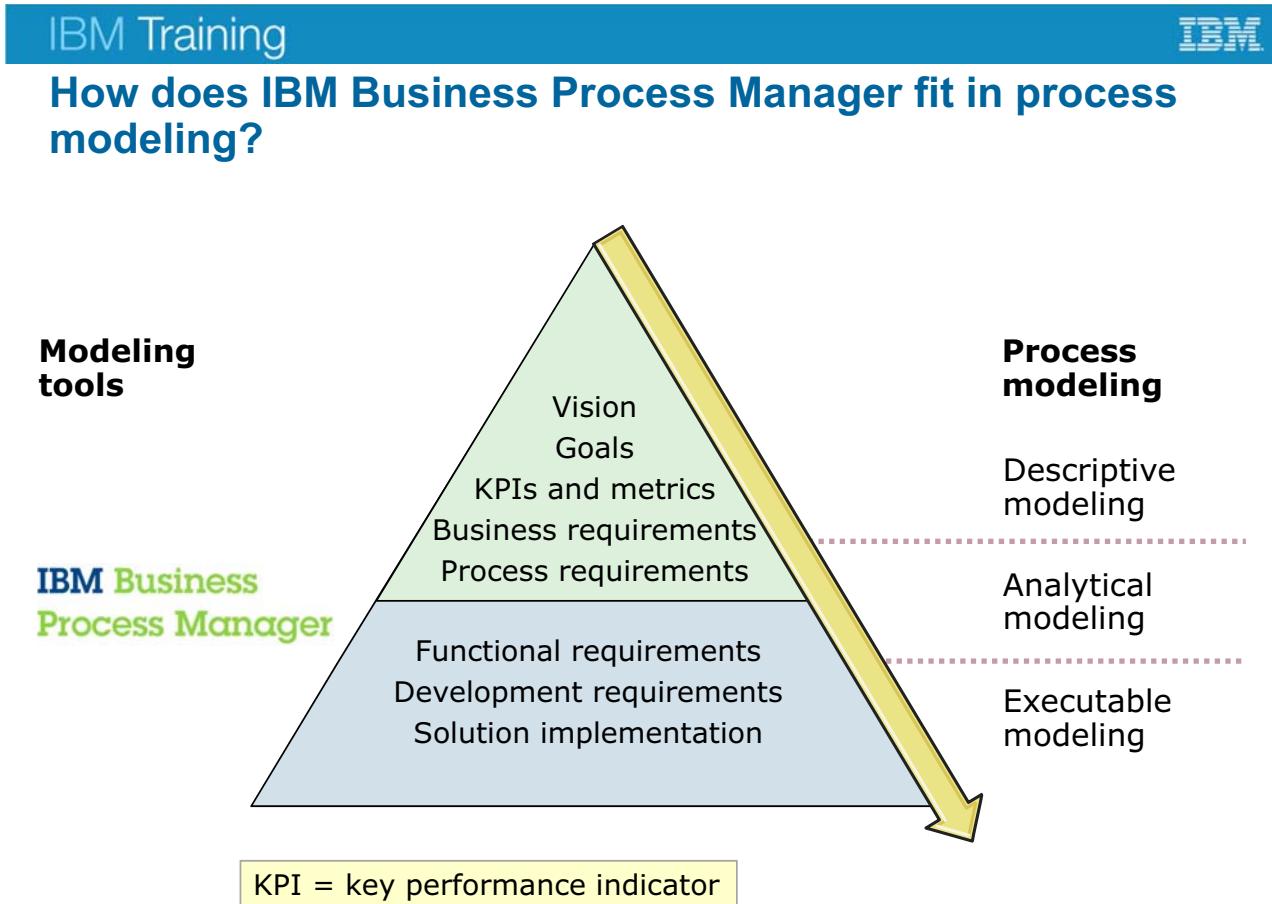
The Express configuration is limited to 200 users and 3 authors, allows only four cores in production and two cores for development servers, and is not allowed to be clustered. It comes with the core IBM Business Process Manager package that all of the configurations contain.

The Standard configuration includes all of the capabilities of the Express edition, but does not include restrictions on users, authors, or cores, and can be clustered.

The Advanced configuration includes all of the capabilities of the Standard editions, and also includes:

- WebSphere Process Server compatible execution
- Integration Designer (BPEL)
- Built-in enterprise service bus (ESB)

- Transaction support
- Integration adapters
- Flexible Business Space user interface



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Figure 2-8. How does IBM Business Process Manager fit in process modeling?

The first phases of the BPM lifecycle require a BPM team to designate business process candidates, discovery, and initial definition of the process. It is appropriate to choose the best tools to accomplish these tasks. You can use any modeling tools because IBM Business Process Manager can import anything that is compliant with BPMN 2.0. IBM also has a tool, Blueworks Live, which is used for modeling and simple execution. Blueworks Live is one of the best tools on the market for discovery and initial definition of a process. Later in the unit, you learn more about Blueworks Live.

Many times, a BPM team must change to a tool that handles the adjustments and refinement of a complicated process model on the way toward execution. Remember that it is best to think of a shared model approach to maintain a central artifact by which to modify and improve the process. This approach is where IBM Business Process Manager excels.

Business Process Manager offers the ability to efficiently handle key components of a BPM project and the three phases of process modeling. Blueworks Live was built as a process modeling SaaS tool. IBM Business Process Manager is a much more robust modeling and execution tool with the ability to integrate with external systems, customize the interfaces, and provide enterprise-class reporting and visibility into your processes. IBM Business Process Manager can import Blueworks Live processes to implement them in ways that Blueworks Live cannot.

It is important to note that the two types of tools do not have a clear demarcation where one stops and the other begins in terms of process modeling. That varies from project to project; however, both work together to engage the business and information technology (IT) sides of a business.

Both tools contain tools to model your processes. For purposes of this course, you start modeling in IBM Business Process Manager in the analytical modeling effort. Where this course starts process modeling is not where every process modeling effort begins. Typically, you complete many steps that precede analytical modeling, but because of time constraints, this course covers only a portion of modeling.

2.2. The Process Center

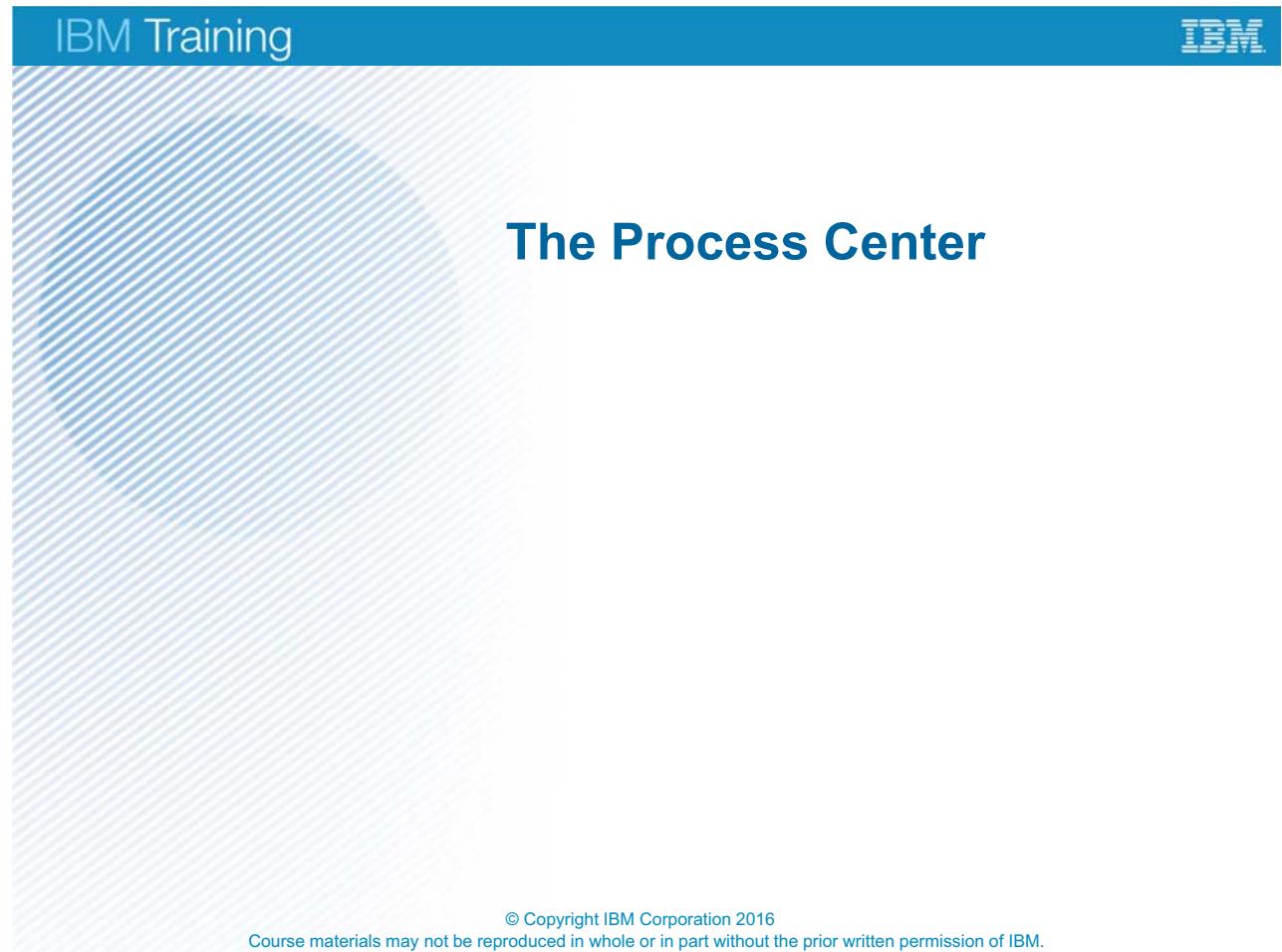
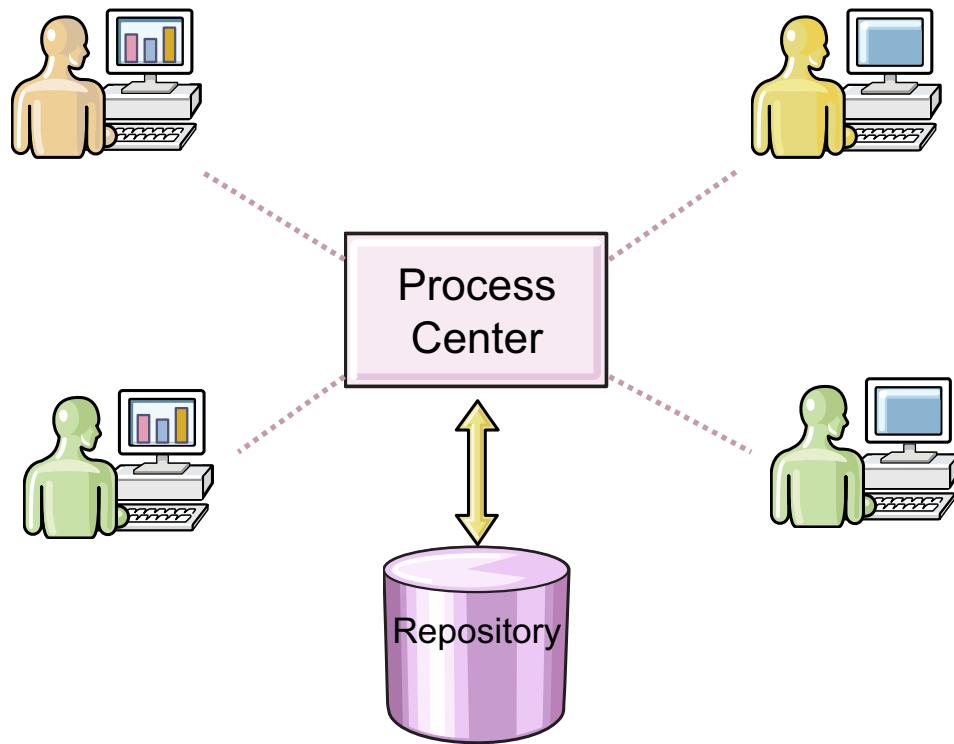


Figure 2-9. The Process Center

The unique design environment of IBM Business Process Manager includes a central repository, which is called the Process Center.



The Process Center: The center of process development



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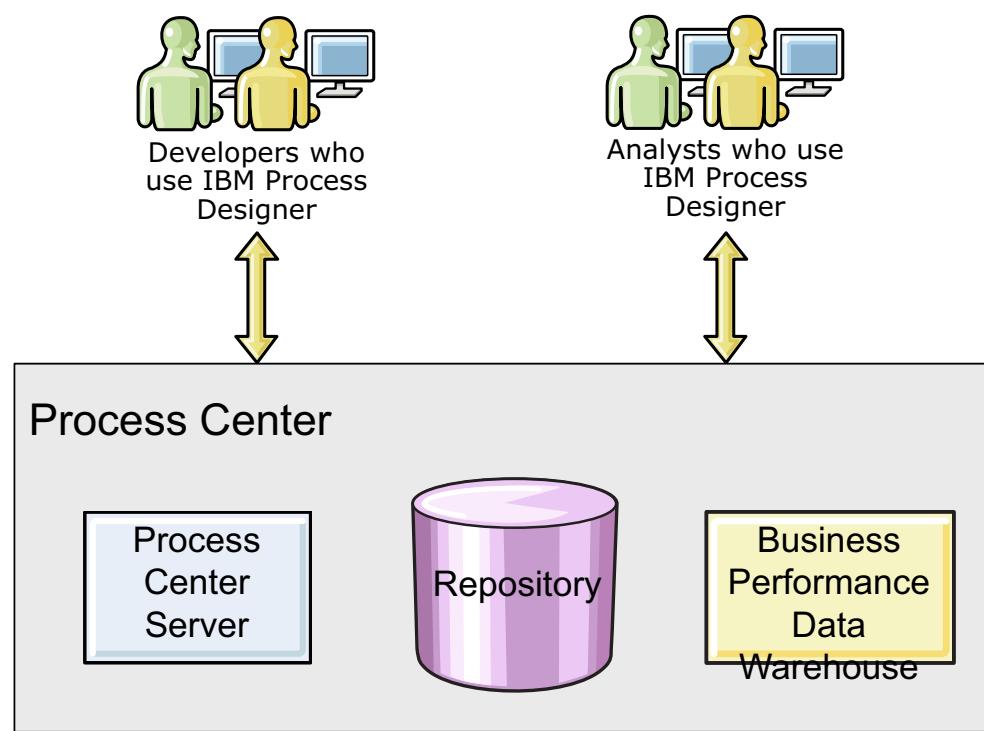
Figure 2-10. The Process Center: The center of process development

The Process Center provides a central development environment and repository for multiple process authors who are working in IBM Process Designer. The Process Center includes a Process Center server and a Business Performance Data Warehouse, which you can use to build and run process applications. You can also use them to store process performance data for testing and playback purposes during development efforts.

Multiple authors can connect to the Process Center and concurrently view the same processes or assets.

IBM Training

The Process Center: Process applications

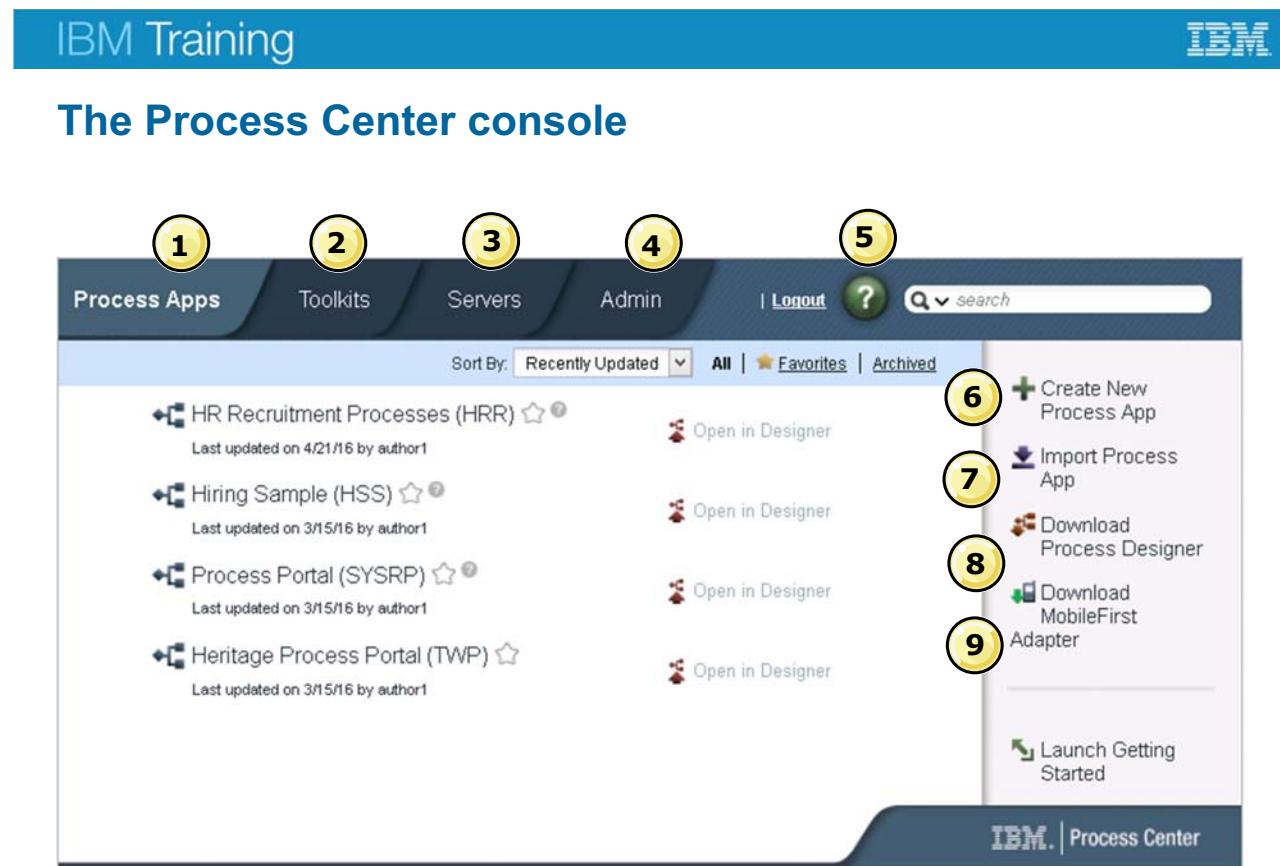


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Figure 2-11. The Process Center: Process applications

The Process Center contains three components. It has the Process Center repository, which is responsible for managing the artifacts, and it has an instance of a Process Server. The Process Center can be accessed either through IBM Process Designer or through a web-based interface.



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Figure 2-12. The Process Center console

Process Center is a central repository for all project assets that are created in Process Designer. When multiple Process Designer clients connect to Process Center, users can share items, such as processes and services. Users can also see changes that other users make as they happen.

1. **Process Apps:** You can create, clone, and import process applications and do other maintenance tasks on the process applications.
2. **Toolkits:** You can create toolkits to enable Process Designer users to share library items across process applications.
3. **Servers:** Administrators can manage the IBM Business Process Manager servers in their environments.
4. **Admin:** Administrators can manage user access to the Process Center repository from the Process Center console.
5. **Search:** This field allows users to conduct searches on the Process Center repository.
6. **Create New Process App:** This option allows user to create a process application.
7. **Import Process App:** This option allows users to import process application.
8. **Download Process Designer:** You can use this option to download the Process Designer installation file.

9. **Download MobileFirst Adapter:** You can use this option to download the IBM MobileFirst adapter.

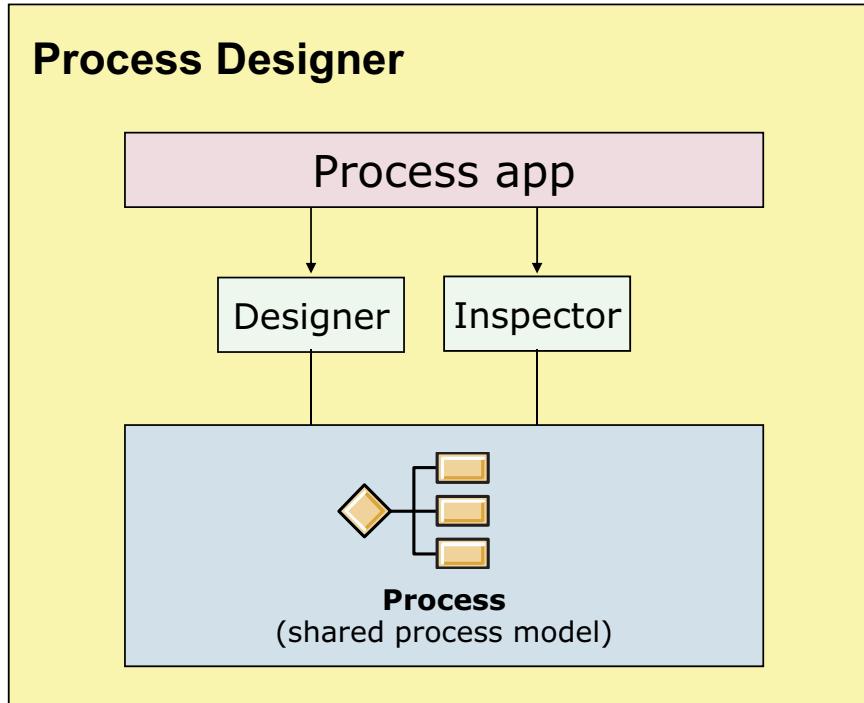
2.3. IBM Web Process Designer



Figure 2-13. IBM Web Process Designer

After a process application is in place in the Process Center, the next step is to create and edit the business process definition that will be contained within. This step is accomplished through the IBM Business Process Manager interface: IBM Process Designer.

IBM Web Process Designer



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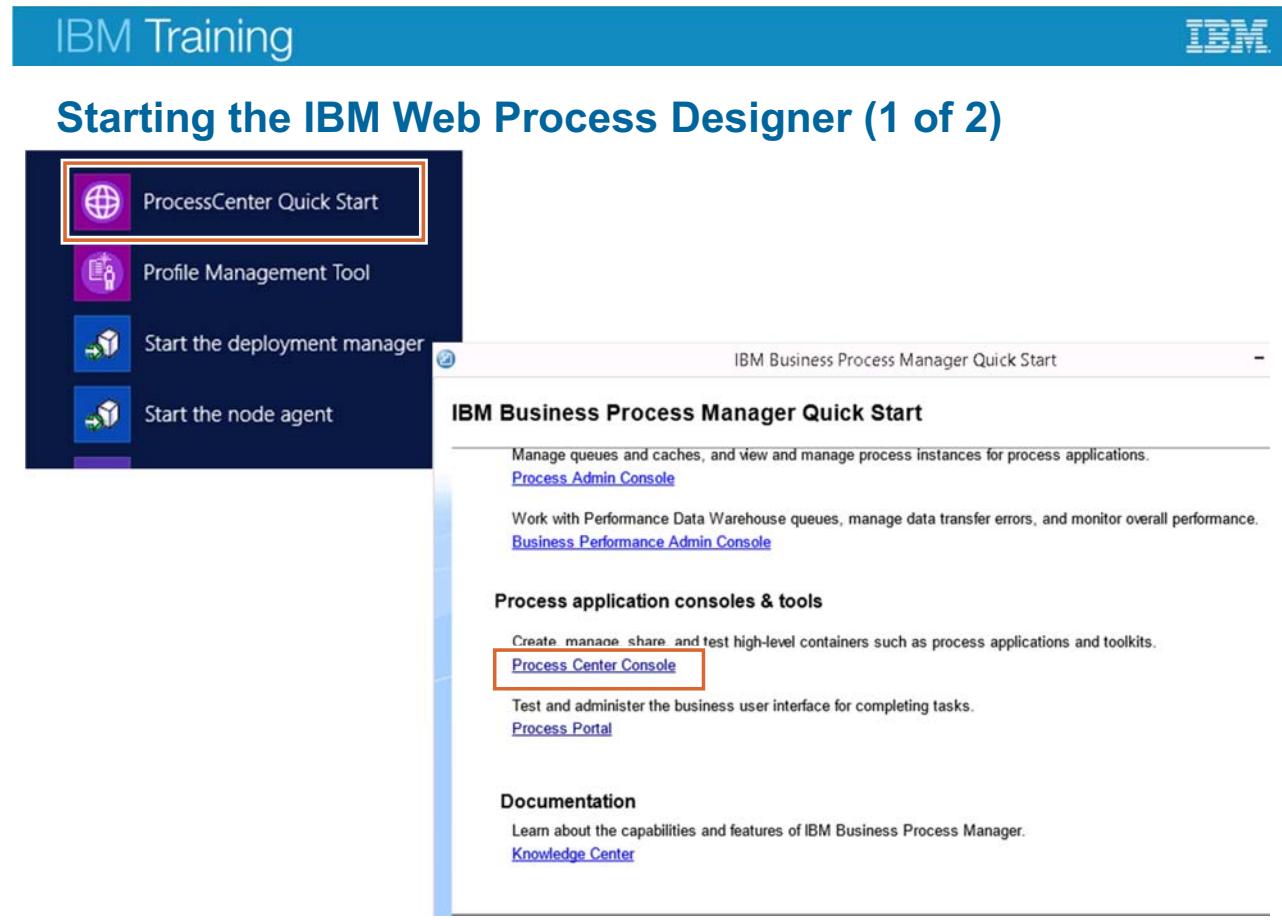
Figure 2-14. IBM Web Process Designer

Process modeling in IBM Business Process Manager is accomplished through the IBM Process Designer views or interfaces. These interfaces allow developers or authors to create, manage and test process models.

IBM Web Process Designer is composed of two key interfaces:

- Designer (model)
- Inspector

To access these interfaces, an author goes through the central repository, the Process Center, and opens a process app.



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Figure 2-15. Starting the IBM Web Process Designer (1 of 2)

You start the IBM Web Process Designer from the Windows start menu. Before starting, ensure that the Process Center that it connects to is started. IBM Web Process Designer is basically a client to the Process Center server. If the Process Center is not running, the IBM web Process Designer displays an error message.

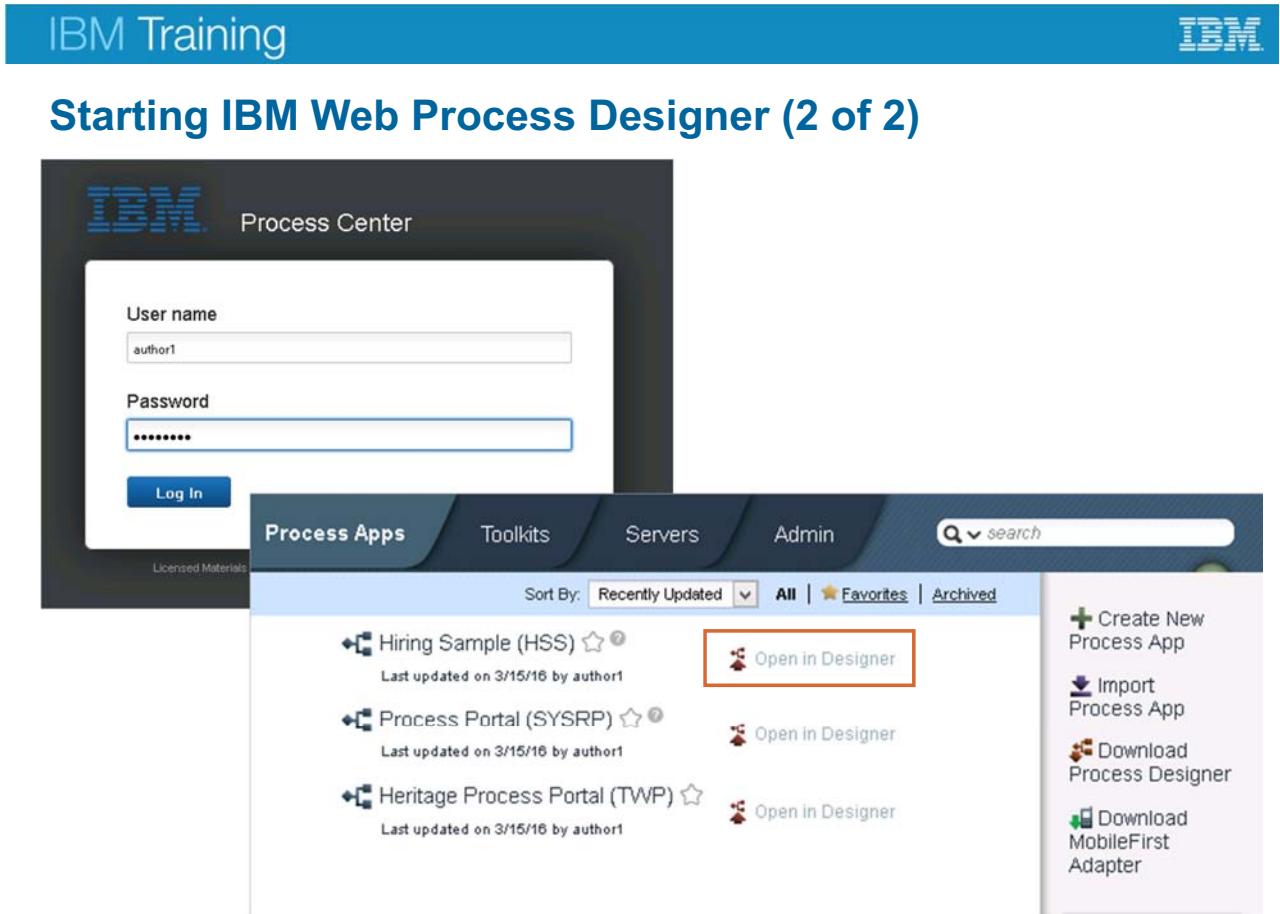


Figure 2-16. Starting IBM Web Process Designer (2 of 2)

The Process Center window displays the list of process applications that are available. Click **Open in Designer** to open the process application.

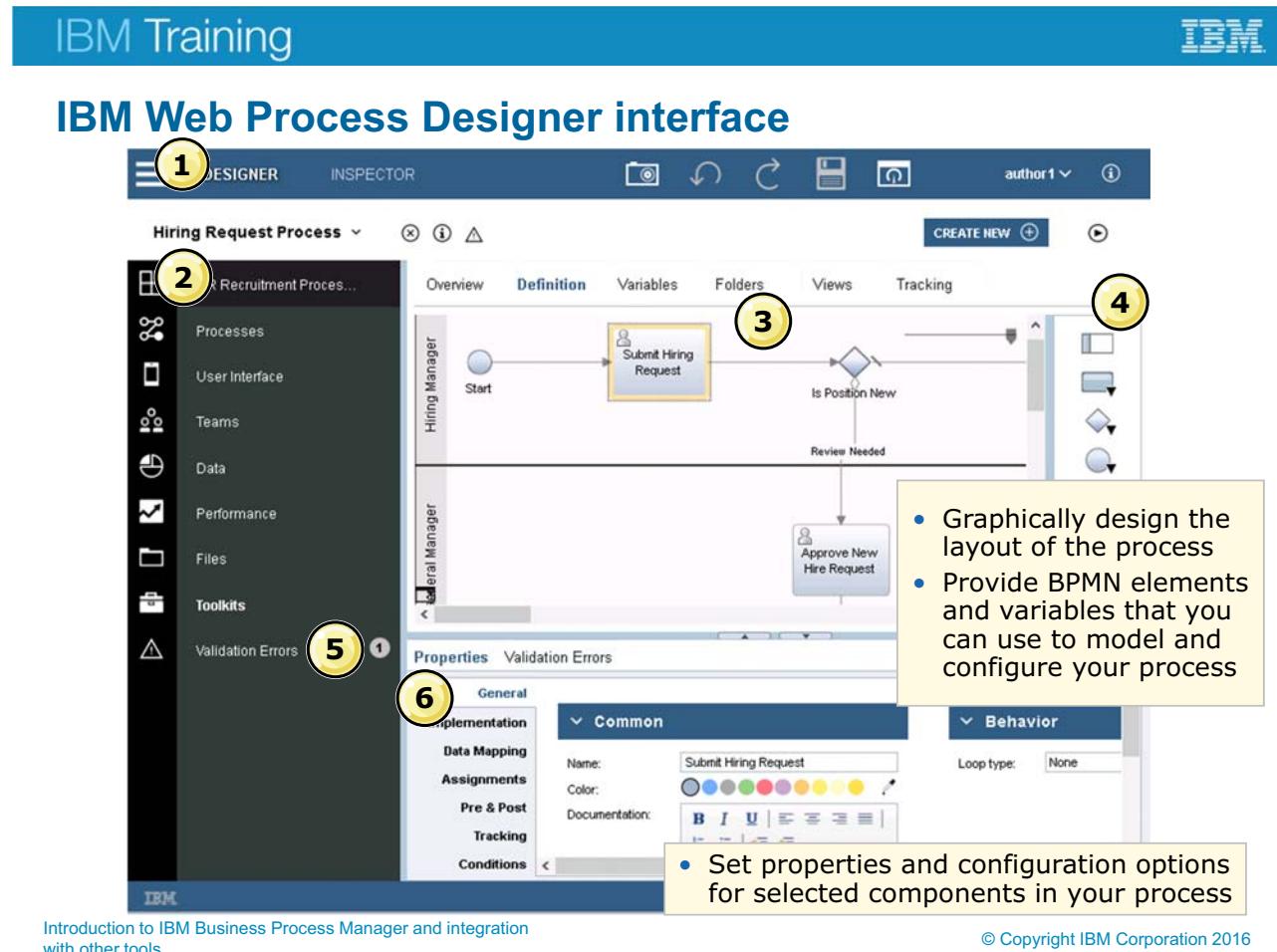


- 1. Designer:** Provide the interface to model your processes
- 2. Inspector:** Manage and debug instances of processes
- 3. Snapshot:** Record the state of library items within a process application or track at a specific point in time
- 4. Undo:** Revert to the last state in the process
- 5. Redo:** Redo the latest changes made in the process
- 6. Save:** Save your work
- 7. Process Center:** Takes you back to the Process Center
- 8. Help:** Open the IBM Business Process Manager Help system

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Figure 2-17. IBM Web Process Designer: Main toolbar



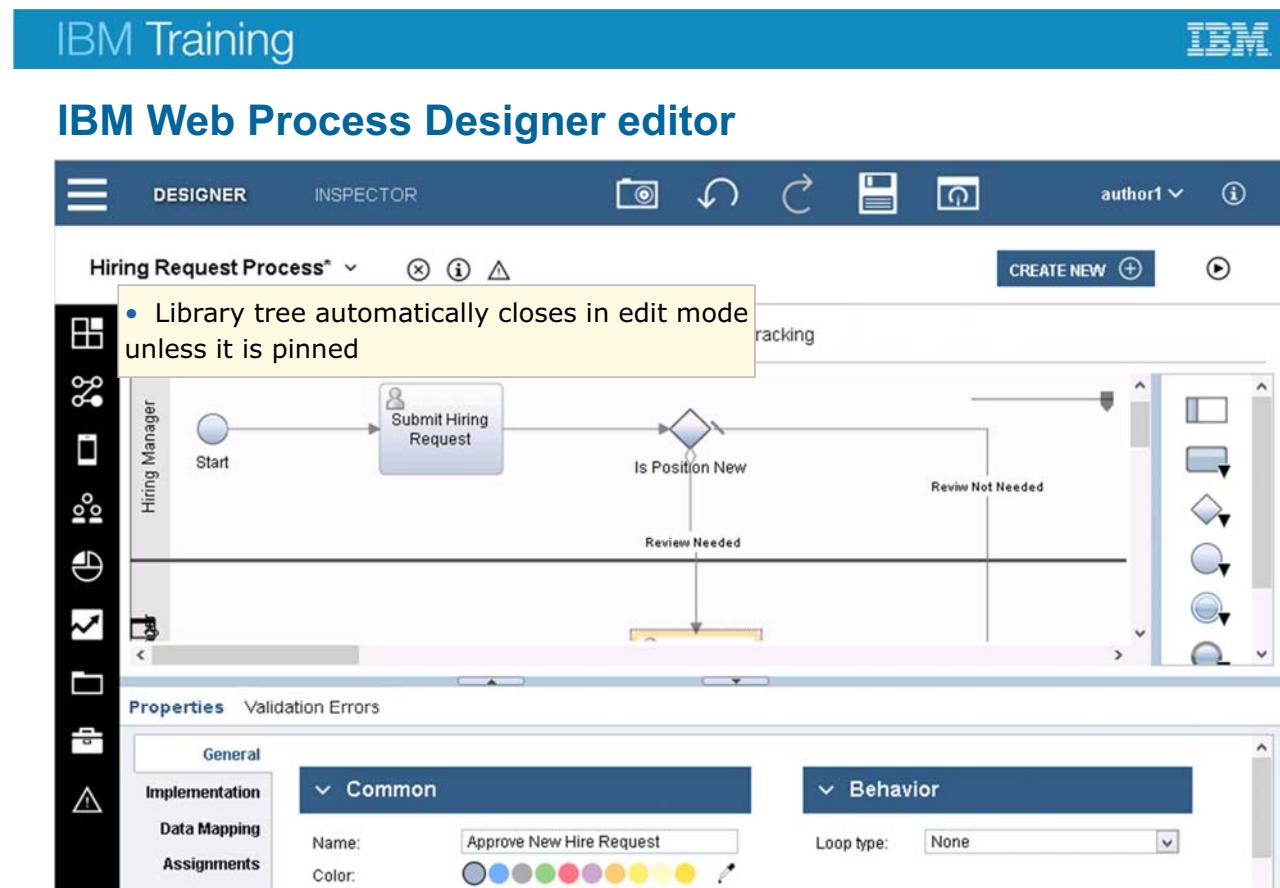
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Figure 2-18. IBM Web Process Designer interface

You use IBM Web Process Designer to model and implement your business processes and easily demonstrate process design and functionality during development efforts.

1. **Main toolbar:** Provides access to Designer, Inspector, and Process Center. The main toolbar is also where you save all open editors, take a snapshot, and view help.
2. **Process library:** Provides access to the library items for the current process application.
3. **Main canvas:** The area in which you can graphically model your process. Each process automatically includes a start event and an end event. Two default lanes are included for user and system tasks.
4. **Palette:** When you develop the process diagram in the Designer in IBM Web Process Designer, the tools and components are available from the palette.
5. **Validation Errors:** Indicates the validation errors in the process application.
6. **Properties:** Opens the view to set the properties and configuration options of the item selected on the canvas.



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Figure 2-19. IBM Web Process Designer editor

The screenshot shows the IBM Web Process Designer interface. At the top, there's a header bar with the IBM logo and a navigation bar with tabs: DESIGNER (highlighted), INSPECTOR, and Folders. There are also icons for camera, refresh, save, and user information. Below the header, a title bar says "Hiring Request Process". On the left is a sidebar with icons for HR Recruitment Pr..., Processes, User Interface, Teams, Data, Performance, and Files. The main area has tabs for Overview, Definition, Variables, Folders, Views, and Tracking. Under the Overview tab, there's a "Common" section with a "New" button and a list of artifacts: Client-Side Human Service (selected), Theme, Coach View, and Localization Resource. To the right of the artifacts is a "Details" panel with fields for instance name ("Hiring Request Proces"), enable due date (checkbox checked), due in (input field with value 8), enable at risk calculations (checkbox checked), enable tracking groups (checkbox checked), and allow projected path management (checkbox checked). Below the Details panel is a "Work Schedule" section with time schedule fields. A yellow callout box contains three numbered points:

1. Inspector tab is available to debug services and processes
2. Artifacts you can author in Web Process Designer
3. Each editor includes usability enhancements i.e. “expand folders”

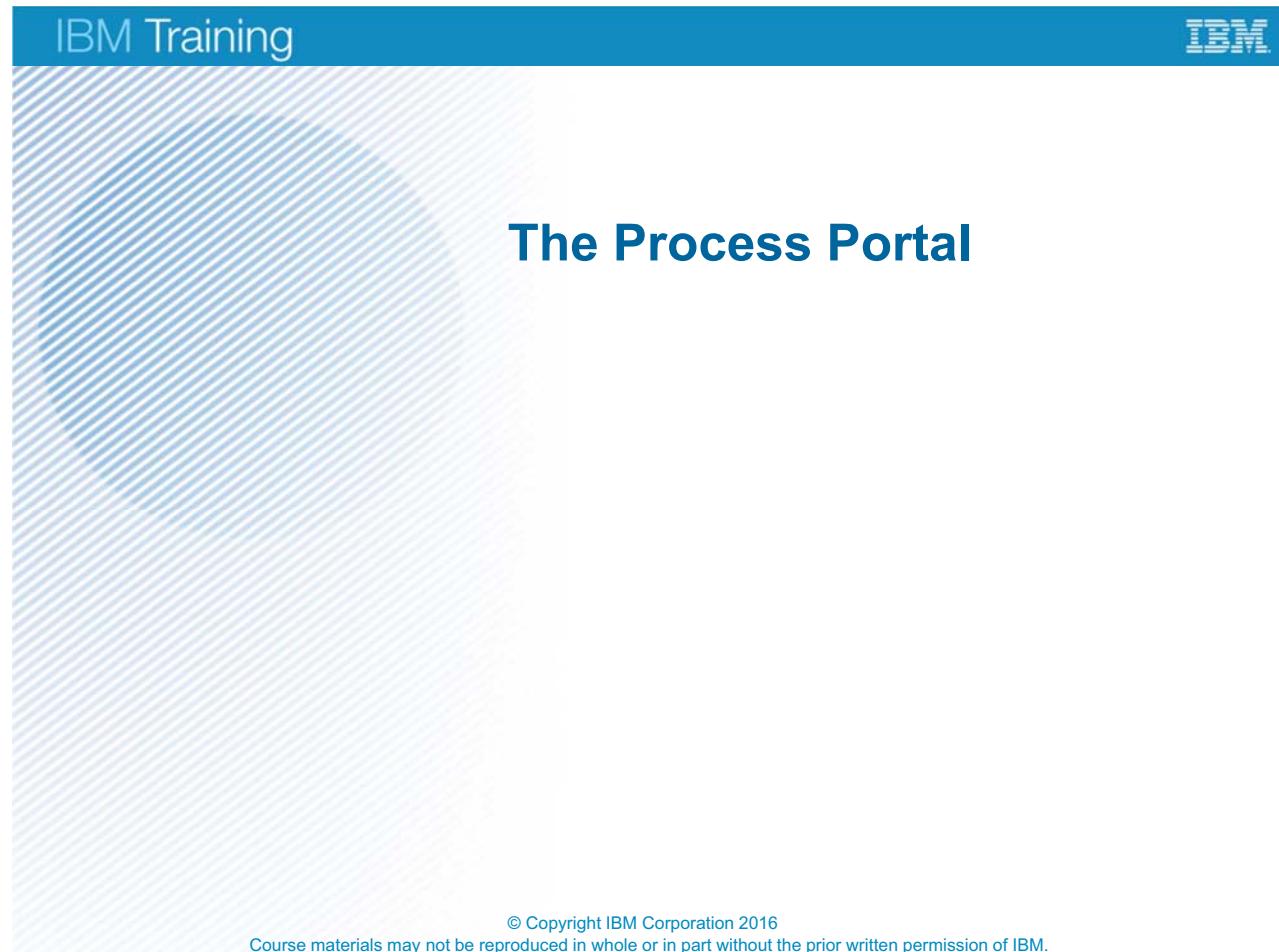
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Figure 2-20. IBM Web Process Designer: modern web interface

1. Inspector tab is available to debug services and processes
2. Artifacts you can author in Web Process Designer
3. Each editor includes usability enhancements i.e. “expand folders”

2.4. The Process Portal



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Figure 2-21. The Process Portal

The Process Portal is the main tool that business process users interact with to complete tasks and processes. Other tools, such as the IBM Business Process Manager mobile application, can also be used to complete tasks and processes.

The Process Portal also has use for project development, especially in terms of validation. BPM teams and business stakeholders want to reach consensus in the playback session to end a stage of development. When consensus is the goal, the Process Portal allows the team to view the process performance as it would function in a user environment.

This unit focuses on the Process Portal, but also presents the mobile application to show other ways that business users can run processes and tasks.

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Figure 2-22. The Process Portal (1 of 2)

The Process Portal has a main page that you can use to run and manage tasks.

1. User can edit the profile and log out from here
2. Users view their current process performance or the team's performance by selecting the tab for each dashboard.
3. You can launch your process
4. **Search** allows users to search tasks
5. On the Work page, **Overdue**, **On Track** and **At Risk** headings are used to separate tasks. Users manage tasks by using the menu directly to the right of the task.
6. To complete a task, click the Step and claim the task. You can use another page to complete the task.

The screenshot shows the IBM Process Portal for the 'Hiring Request Process:53'. The main header displays the process name and a yellow circle with the number 5. Below the header, a sub-header also shows 'Hiring Request Process:53' with a yellow circle containing the number 1. The portal is divided into several sections:

- Data:** Shows fields like Requisition Number, Department, Job Title, and Salary, each with a yellow circle containing the number 2.
- Documents:** Displays a document titled 'Hiring Requisition' with author 'author1' and creation date '12:17 PM', accompanied by a yellow circle with the number 3.
- Tasks:** Lists a task titled 'Step: Submit Hiring Request' with status 'Open | Completed' and due date 'March 29, 2016 1:17 PM', with a yellow circle containing the number 4.
- Stream:** A timeline showing the creation of the process instance ('Created Mar 29, 2016 12:17 PM') and its due date ('Due Mar 29, 2016 8:17 PM'), with a yellow circle containing the number 6.
- Activities:** A section listing ad-hoc activities: 'Approve Hiring Request' and 'Review Salary', each with a yellow circle containing the number 7.

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Figure 2-23. The Process Portal (2 of 2)

The Process Portal has a Processes page that you can use to run and manage tasks.

1. The process instance with the instance ID
2. Data flowing between the tasks
3. Documents attached to the process
4. Open and Completed tasks are listed. You can claim an open task from here
5. You can view the Gantt chart of the process
6. The Stream shows the actions that occur for this instance. You can also post a comment to the stream that will appear immediately in the stream
7. The ad hoc activities are shown under the Activities section

The screenshot shows the IBM Process Portal interface. At the top left is the 'IBM Training' logo, and at the top right is the 'IBM' logo. The main title 'The Process Portal: Social features' is centered above the interface. The interface itself has several components:

- Stream Panel:** On the left, there's a vertical list of recent activity items. One item is highlighted with a yellow circle containing the number '2'. A red box highlights the 'Post' button next to it. Another red box highlights the 'Stream' tab at the top of the Stream panel.
- Task List:** Below the Stream panel, there's a list of tasks. One task is highlighted with a yellow circle containing the number '1'. A red box highlights the 'Post' button next to it.
- Sidebar:** On the right side, there's a sidebar with two sections: 'Following' and 'Mentions'. Each section has a count of 0 and a 'View' button. Below the sidebar are 'REFRESH' and 'GANTT CHART' buttons.
- Callout Box:** A callout box on the right lists three numbered points:
 1. The Stream shows the actions that occur for this instance
 2. You can also post a comment to the stream that will appear immediately in the stream
 3. You can view the Gantt chart for the process

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Figure 2-24. The Process Portal: Social features

The Process Portal has several social features. When completing a task, you can use a menu in the right window to access task details, the process activity stream, and experts of the task.

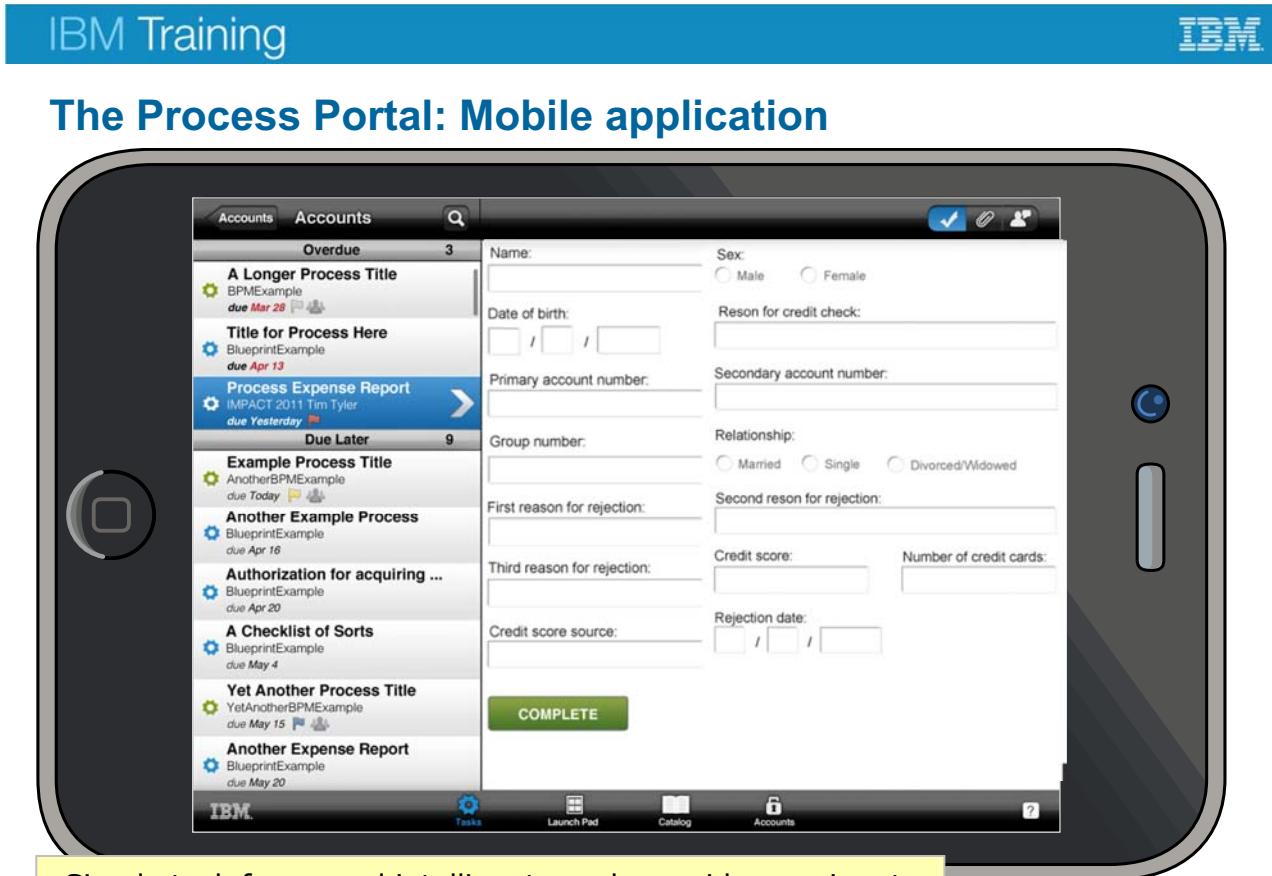
Activity streams provide a way for you to monitor and complete ad hoc actions on your “favorite” processes and tasks.

Experts, either predefined or discovered dynamically (by using social analytics), help you complete process tasks. An expert’s advice can be taken while working on a task. Experts can also be invited for collaborative working on tasks. There are two types of experts:

- **Experienced experts:** Experts that are discovered dynamically by using social analytics. For example, business users who claim the tasks and complete on time are discovered as experienced experts.
- **Subject matter experts:** The experts that are predefined during the process-modeling phase are shown under the “Subject Matter Experts” label.

You can use the stream to comment and post, read, and comment on what actions the process completes immediately after they occur. You can upload a photo, and each post displays your photo. You can also create an IBM Connections Integration, which enables the default Process Portal business card to be replaced with the Connections business card. Automatic system posts are designated by an icon with blue gears.

In addition to text posts, you can also post attachments and links. Mention other users by using the @ symbol and typing the first few characters of the user name.



Simple task forms and intelligent coaches guide user inputs

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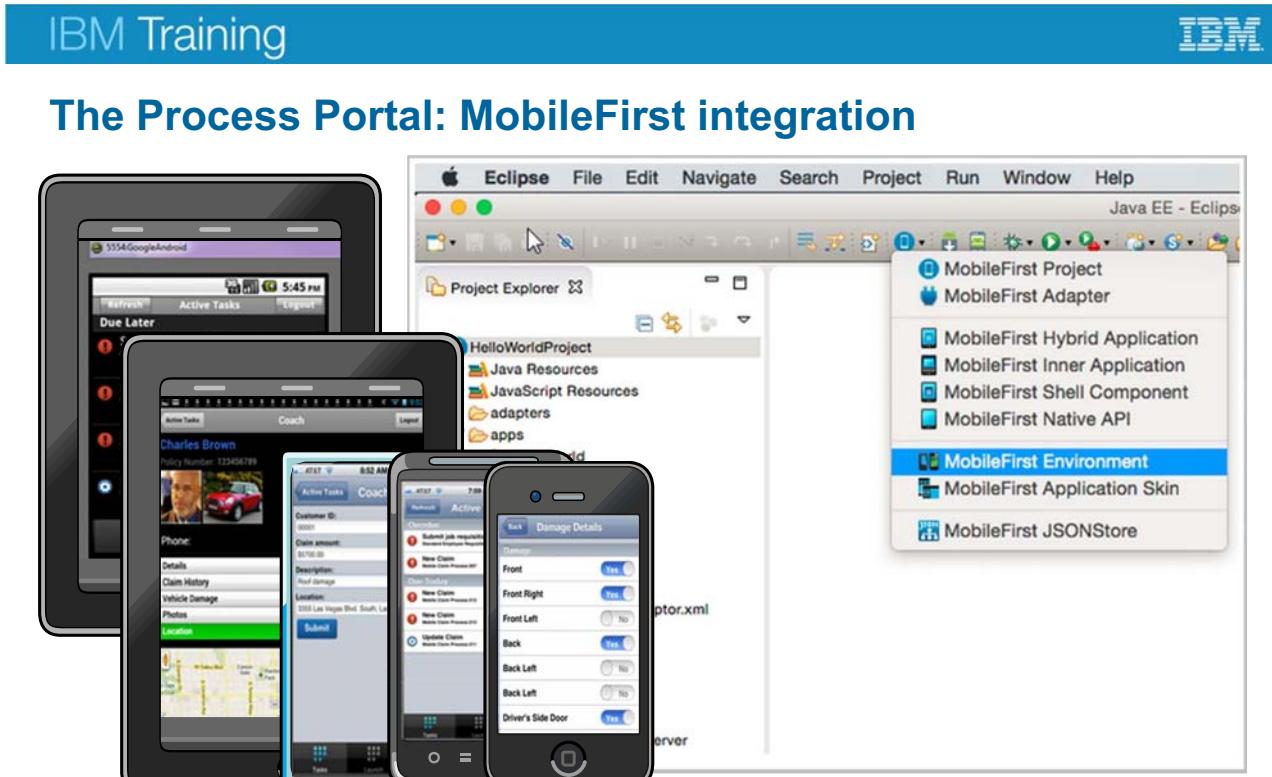
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Figure 2-25. The Process Portal: Mobile application

Sometimes the Process Portal is not used in implementation. Email, Business Space widgets, or integrated software of a company runs the Process Portal as well. Another way to run a process or task is on your Apple iPhone or Apple iPad. Coaches are displayed in the mobile format by using custom mobile-ready coach views. You learn about coach views and building coaches during Playback 1.

A mobile application is available in the Apple iTunes store to integrate with IBM Business Process Manager. With the mobile application, you can:

- Review file attachments for extra context or approval
- Attach photos to an existing task
- View and complete tasks right from your mobile device
- Start new processes remotely
- Have full on-screen assistance
- Work within a single interface to both Blueworks Live and IBM Business Process Manager applications



- Use **IBM MobileFirst** capability for multi-environment development and deployment
- Integrate with IBM Business Process Manager through REST APIs

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Figure 2-26. The Process Portal: MobileFirst integration

To develop the Business Process Manager mobile apps with IBM MobileFirst Platform Foundation, BPM users can activate, work on, and complete process tasks that use their mobile devices.

Mobile application developers can use IBM MobileFirst Platform Foundation to enable mobile applications to access IBM Business Process Manager process applications. The IBM Business Process Manager adapter for MobileFirst solution consists of two adapters that provide access to the IBM Business Process Manager REST APIs on the IBM Business Process Manager server.

The generic and application-specific adapters are deployed on the MobileFirst server and provide a common way for applications that run on mobile devices to invoke REST APIs on IBM Business Process Manager servers. The mobile applications do not invoke the REST APIs directly. Instead, they invoke the procedures within the MobileFirst adapters. The adapter serves as a gateway that mediates the communication and access of the mobile applications to the IBM Business Process Manager backend server. It translates the procedure call from the mobile applications into the REST API invocation, receives the results from the IBM Business Process Manager server, and then passes the response back to the mobile applications.

The Sample Mobile Coaches Toolkit found on the IBM Business Process Manager wiki page, includes over 15 coach views for creating coaches that are optimized for devices.

The IBM Business Process Manager Mobile Application requires no additional software from the IBM Business Process Manager installation. Developers are able to use their existing BPM skill set

and use coaches to develop high-performing, stylish mobile applications for users to complete their tasks. IBM MobileFirst uses device services that are based on HTML, and is cross-environment, so developers build one page that is cross-compatible for all mobile devices.

For more information on IBM MobileFirst, consider taking the IBM Education course VW330G: Foundations of Mobile Computing and IBM MobileFirst.

2.5. Introduction to BPM on Cloud

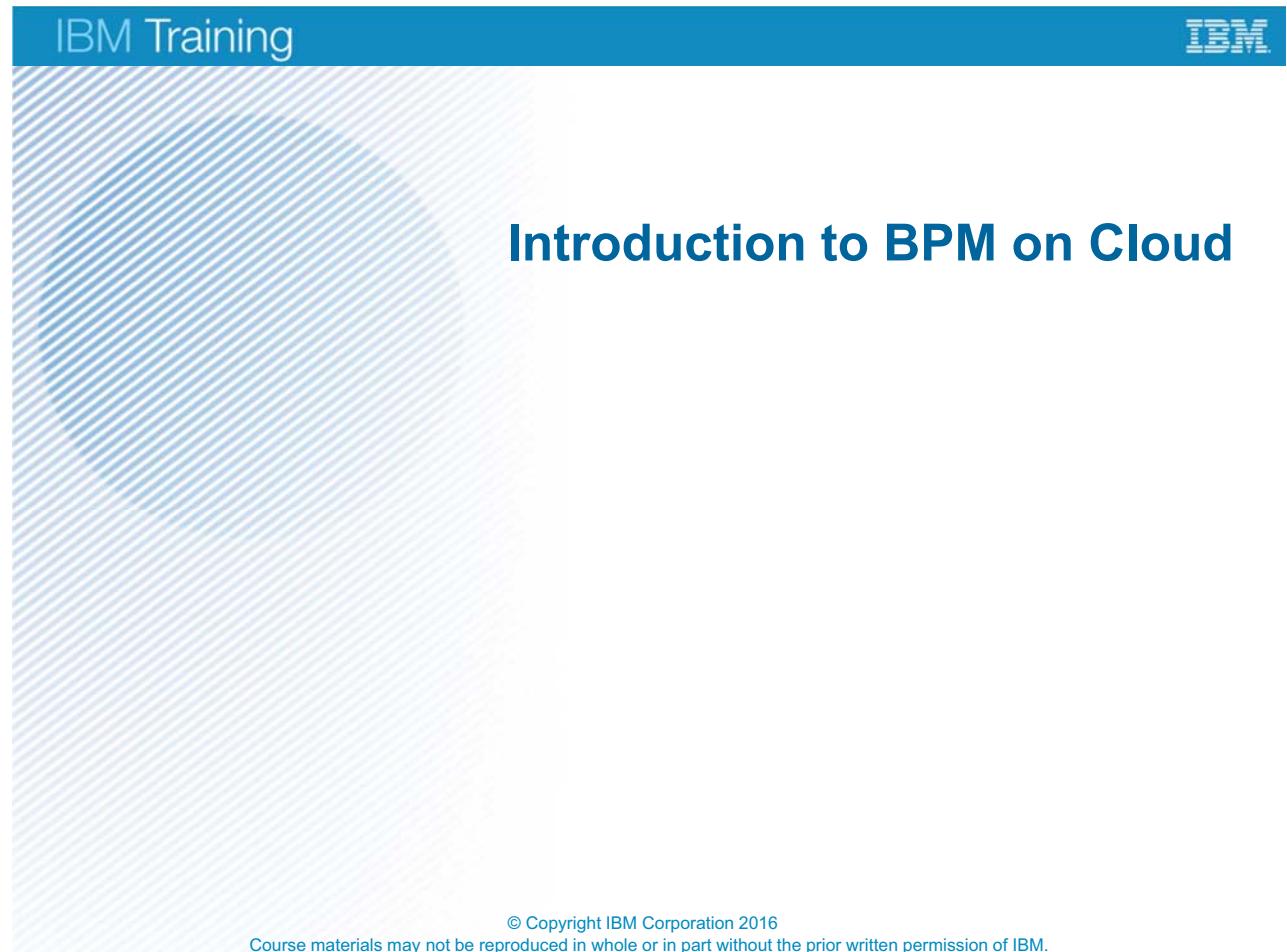


Figure 2-27. Introduction to BPM on Cloud

Introduction to IBM Business Process Manager on Cloud

- Enterprise-grade IBM Business Process Manager cloud service for development, testing, and production
- Cloud-based, collaborative, and role-based environment
 - Capture, automate, and manage frequently occurring, repeatable rules-based business decisions
- Ready-to-use development, test, and production environments are available
- Monthly subscription plans
- Available exclusively on IBM Cloud infrastructure
 - As of 2015, over 25 data centers are available worldwide
- Managed by IBM
- Artifacts that are created with IBM Business Process Manager on Cloud are compatible with IBM Business Process Manager on-premises product
- Free 30 day trial available (see Appendix A)

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Figure 2-28. Introduction to IBM Business Process Manager on Cloud

IBM Business Process Manager on Cloud is a subscription-based business process management (BPM) cloud service.

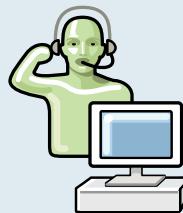
IBM Business Process Manager on Cloud provides a full lifecycle IBM Business Process Manager environment that includes development, test, and production – with tools and runtime for process design, execution, monitoring, and optimization. It is designed to enable business users to get started with process improvement quickly without the need to build and maintain an IT infrastructure.

For more information on IBM Business Process Manager on Cloud, see Appendix A

BPM on Cloud customer focus: Manage and automate decisions

IBM manages:

- Uptime
- Monitoring
- Backup
- High availability
- Disaster recovery
- Updates
- Maintenance



Customers manage:

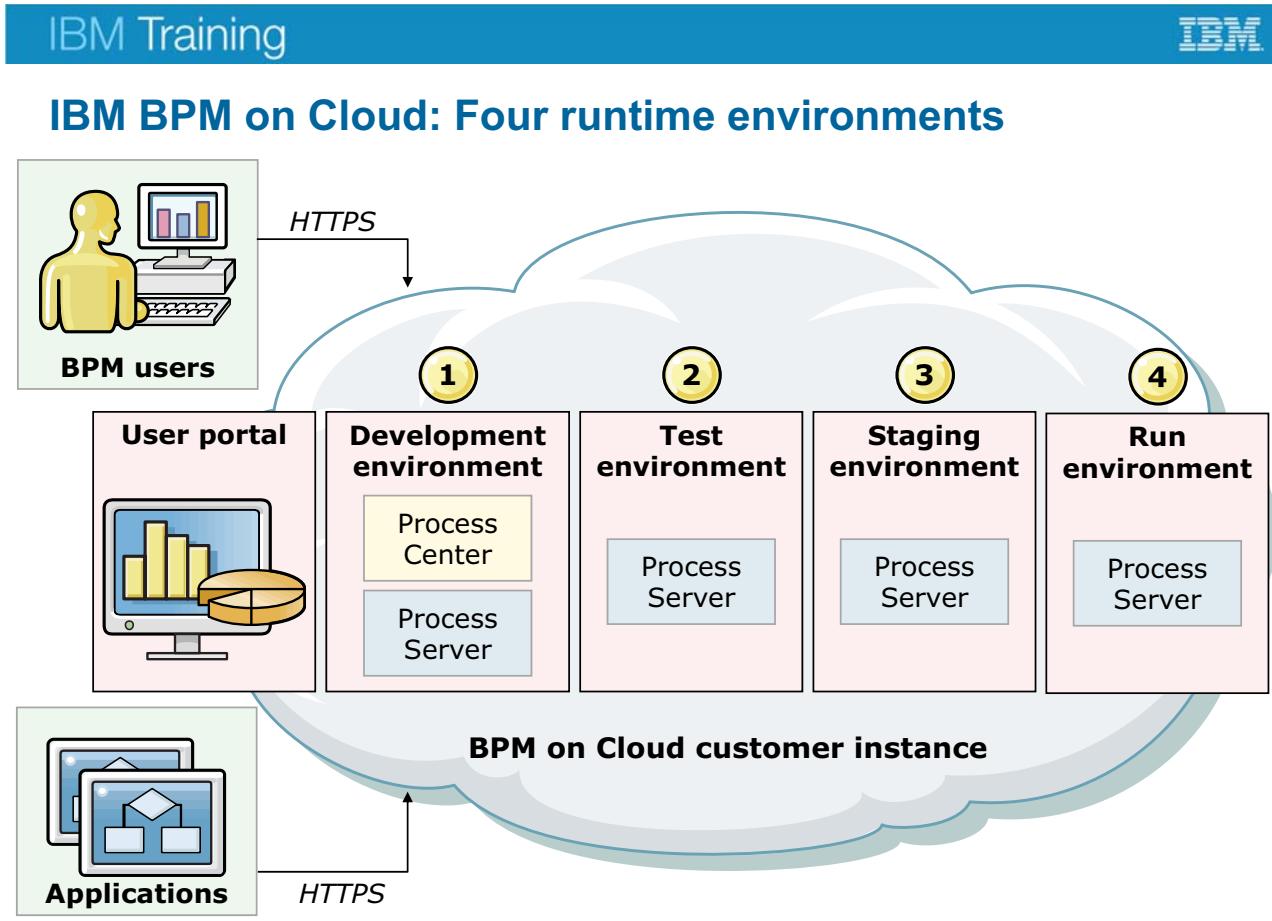
- Application development
- Application integration
- Application support



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Figure 2-29. BPM on Cloud customer focus



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Figure 2-30. IBM BPM on Cloud: Four runtime environments

IBM BPM on Cloud provides four runtime environments for process development:

1. Development
2. Test
3. Staging
4. Run

In this diagram:

- **BPM users** include developers, business analysts, business users, and rule authors who access the Process Designer, Rule Designer, and the other various user consoles.
- **Applications** are applications that call services.



IBM Business Process Manager on Cloud user portal

- Access from home page to an array of tools in the four environments

The screenshot shows the 'Development Environment' section of the user portal. It contains eight cards arranged in two rows of four:

- Process Center**: Manage process applications. Includes 'Launch' and 'More info' buttons, and a link to 'Available Downloads (2)'. Icons: gear and server.
- REST UI**: Prototype IBM BPM REST resources. Includes 'Launch' and 'More info' buttons. Icons: laptop and gear.
- Process Portal**: Collaborate on tasks and view performance. Includes 'Launch' and 'More info' buttons. Icons: gear and person.
- Process Admin Console**: Manage Process Center server and runtime environments. Includes 'Launch' and 'More info' buttons. Icons: gear and server.
- Tech Preview: Responsive Federated Portal**: Technical demonstrations of Responsive Federated Portal. Includes 'Launch' and 'More info' buttons. Icons: gear and server.
- Business Process Choreographer Explorer**: Monitor and manage BPEL processes. Includes 'Launch' and 'More info' buttons. Icons: magnifying glass and gear.
- Business Rules Manager**: Manage business rules. Includes 'Launch' and 'More info' buttons. Icons: gear and document.

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Figure 2-31. IBM Business Process Manager on Cloud user portal

Demonstration

This demonstration covers the following topics:

- Navigate the design and inspector of IBM Web Process Designer
- Explore the Process Portal

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Figure 2-32. Demonstration

This demonstration is stored as the `demo1.mp4` file that is in the `C:\labfiles\demo` folder.

Navigation and function of the Inspector perspective of IBM Process Designer:

1. Explain that one of the powerful aspects of IBM Web Process Designer is that all process diagrams can be run immediately after they are completed.
2. Show the two perspective tabs above the library on the upper left of the screen (Designer and Inspector tabs).
3. You are using the default Designer perspective, but now demonstrate the Inspector perspective. Click **Inspector** to select the Inspector perspective.
4. The process diagram moved to the lower-left window. Click the run process icon in this window.

Process Portal navigation:

1. Open the Process Portal from the windows menu or the desktop icon.
2. Log on to the portal with your IBM Process Designer credentials.
3. Explore parts of the designer interface and library menu.

Process Portal task completion:

1. Click a task to claim and run the task.

2. Click **Yes** to claim the task.
3. Complete the web form or coach to complete the task.

Unit summary

- Describe how to use IBM Business Process Manager to accomplish process modeling goals
- Explain how to create and modify process applications in the Process Center
- Explain how to create and modify process models with the Designer view of the web Process Designer
- Describe how to validate process models with the Inspector view of the web Process Designer
- Describe the purpose of the Process Portal
- Describe the purpose and function of Blueworks Live
- Describe integration with other tools and products

Review questions

1. True or False?

The Process Center provides a central development environment and repository for multiple process authors who are working in IBM Process Designer.

2. What are the three phases of process modeling?

- A. Descriptive modeling, analytical modeling, and executable modeling
- B. Data modeling, analytical modeling, and executable modeling
- C. Descriptive modeling, analytical modeling, and monitor modeling
- D. Descriptive modeling, functional modeling, and executable modeling

Figure 2-34. Review questions

Write your answers here:

1.

2.

Review answers

- 1. True.**
- 2. A:** Descriptive modeling, analytical modeling, and executable modeling.

Unit 3. Playback 0: Modeling the as-is business process

Estimated time

01:30

Overview

In this unit, you learn how to create a structured process application, which is part of the effort within Playback 0. A process application can contain ad hoc activities.

How you will check your progress

- Checkpoint questions and lab exercises

Unit objectives

- Create a process application
- Model a process
- Describe pools and lanes

Playback 0: Modeling the as-is business process

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Figure 3-1. Unit objectives

Topics

- Creating a process application
- Modeling a process
- Pool and lanes

Playback 0: Modeling the as-is business process

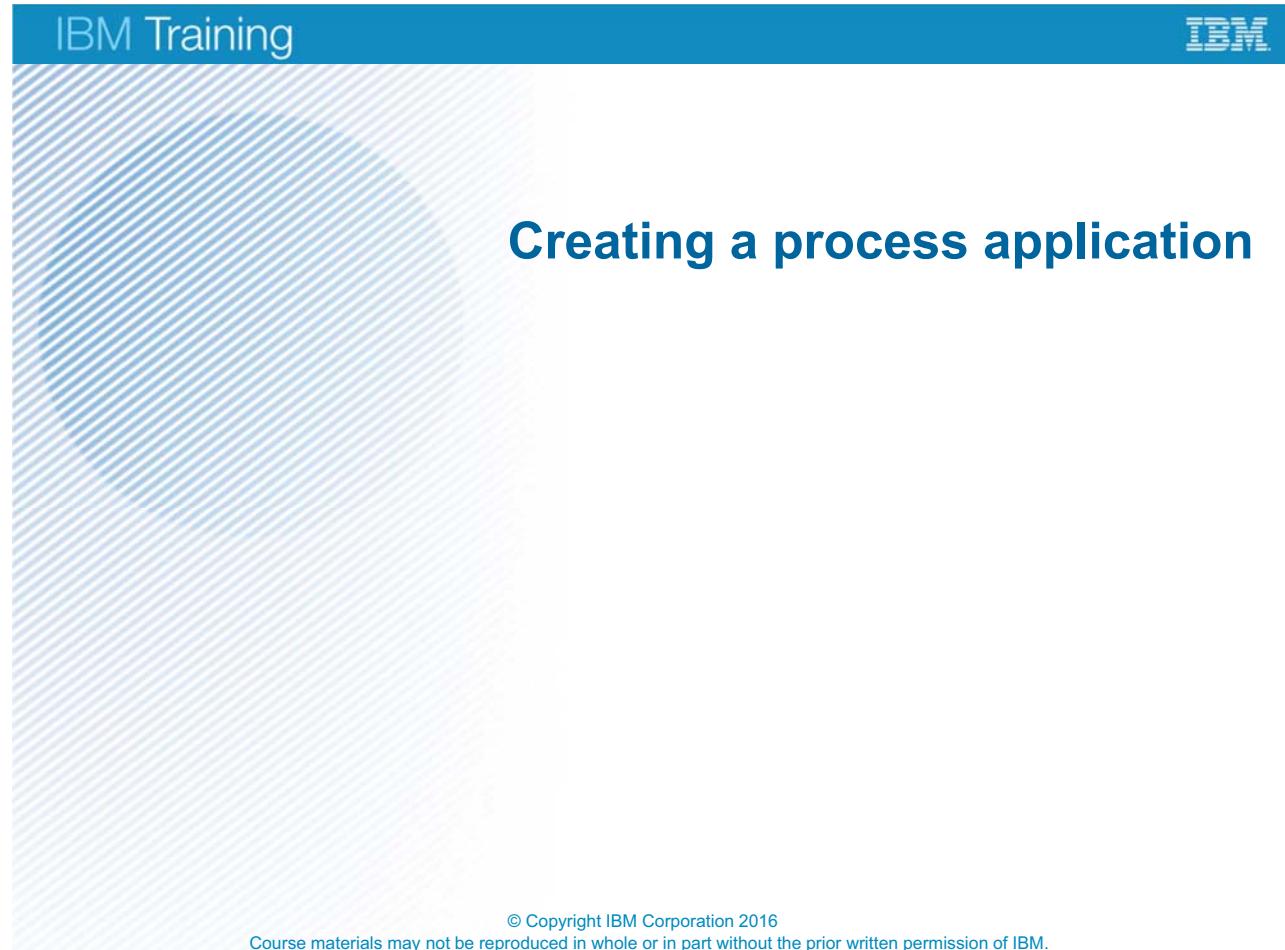
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Figure 3-2. Topics

Key concepts in this unit

- **Business process definition (BPD)**: A process diagram or model in IBM Process Designer
- **BPMN**: A notation standard (Business Process Model and Notation)
- **Pool**: A BPMN element that represents the entire business process
- **Lanes**: A team or a responsible role of the process task
- **Activity**: Represents a single task that a process participant accomplishes from start to end
- **Flow objects**: Represent either process task assignments or process controls
- **Nested process**: Series of processes that are connected at a high level to child definitions

3.1. Creating a process application



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Figure 3-4. Creating a process application

Creating the process model, in this case a process since you are using IBM Web Process Designer, is part of the effort within Playback 0. Naturally, modeling does not stop with creation of the process model, but continues on through iterations until the business process reflects the specified improvements and adjustments. For this reason, the shift from descriptive modeling to analytical modeling happens to produce the process model that is deemed worthy of implementation.

It begins with the creation of the process model.

The screenshot shows the IBM Process Center interface. At the top, there's a blue header bar with the 'IBM Training' logo on the left and the 'IBM' logo on the right. Below the header is a main content area with a dark blue header bar containing tabs for 'Process Apps', 'Toolkits', 'Servers', and 'Admin'. A search bar is located at the top right of this header. The main content area displays a list of process applications under the heading 'Sort By: Recently Updated'. The applications listed are:

- HR Recruitment Processes (HRR) (star icon)
- Procurement Sample (STPPS1) (star icon)
- Hiring Sample Advanced (HSAV1) (star icon)
- Hiring Sample (HSS) (star icon)
- Saved Search Admin (SSA) (star icon)

Below the application list, there's a note indicating they were last updated on 2/19/15 by 'we_author1'. To the right of the application list, a context menu is open with three numbered options:

- 1** (highlighted with a yellow circle): A general 'Process Apps' option.
- 2** (highlighted with a yellow circle): 'Create New Process App'.
- 3** (highlighted with a yellow circle): 'Import Process App'.

Further down the page, there are additional download links:

- Download Process Designer
- Download MobileFirst Adapter

At the bottom right of the main content area, it says 'IBM. | Process Center'. At the very bottom of the page, there's a footer bar with the text 'Playback 0: Modeling the as-is business process' on the left and '© Copyright IBM Corporation 2016' on the right.

Playback 0: Modeling the as-is business process

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Figure 3-5. Process application: The Process Center

Process Center is a central repository for all project assets that are created in Process Designer. When multiple Process Designer clients connect to Process Center, users can share items, such as processes and services. Users can also see changes that other users make as they happen.

- 1. Process Apps:** You can create, clone, and import process applications and do other maintenance tasks on the process applications.
- 2. Create New Process App:** Users can use this option to create a process application.
- 3. Import Process App:** Users can use this option to import a process application.

Creating a process application

- A process application is a container for process models and their supporting implementations, and it is stored in the repository
- Process applications contain some or all of the following artifacts:
 - One or more processes
 - References to toolkits
 - The services that are required to implement activities or integrate with other systems, including Advanced Integration services
 - One or more tracks
 - Service Component Architecture (SCA) modules and libraries (authored in IBM Integration Designer)
 - An IBM Business Monitor model for monitoring business performance
 - Any other items that are required to run the process

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Figure 3-6. Creating a process application

A process application is a container for process models and their supporting implementations; it is stored in the repository. After the artifacts are authored or otherwise created, they are assembled into a process application.

Process application tip, snapshots, and tracks

- Any changes to a process application are saved to the Process Center repository at the tip
- Tip is the current working version of the process application
- Use playback sessions on the tip to instantly test and manage the current working version of the process application
- Tip is a special snapshot
 - The only type of snapshot in which you can change contents
 - It runs only on the Process Center server
 - Cannot install a tip on a Process Server
- Each process application has a single track called Main
 - Allows parallel development on a process application
 - Create extra tracks to keep changes isolated

Figure 3-7. Process application tip, snapshots, and tracks

Any changes that you make to a process application are dynamically saved to the Process Center repository at the tip, which is the current working version of the process application. You can use playback sessions on the tip to instantly test and manage the current working version of the process application.

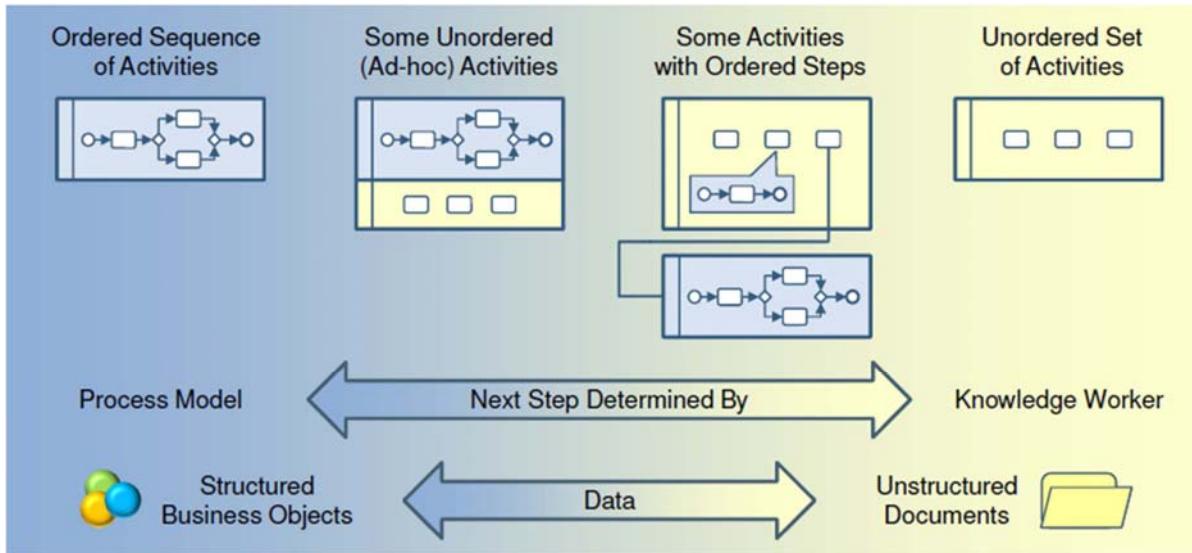
The process application remains at that tip level until you decide to create a snapshot, which records the state of library items within a process application or track at a specific point in time. Typically, you take a snapshot whenever you are ready to test the integration or want to install the process application on a Process Center server or a Process Server for development, test, staging, or production.

The tip is a special snapshot; it is the only type of snapshot in which you can change contents, but you can run it only on the Process Center server. You cannot install a tip on a Process Server.

By default, each process application has a single track, called Main. If you want to allow parallel development on a process application, you can create more tracks. These optional subdivisions in the process application keep changes isolated. For example, imagine that your company is in the process of rebranding; during this transition, the current process applications must be maintained while new versions are being developed based on the updated corporate identity. In this situation, one team might be making minor fixes on the current version of a process application (in the Main

track). At the same time, another team is building a new version of the process application in a separate track.

The process spectrum



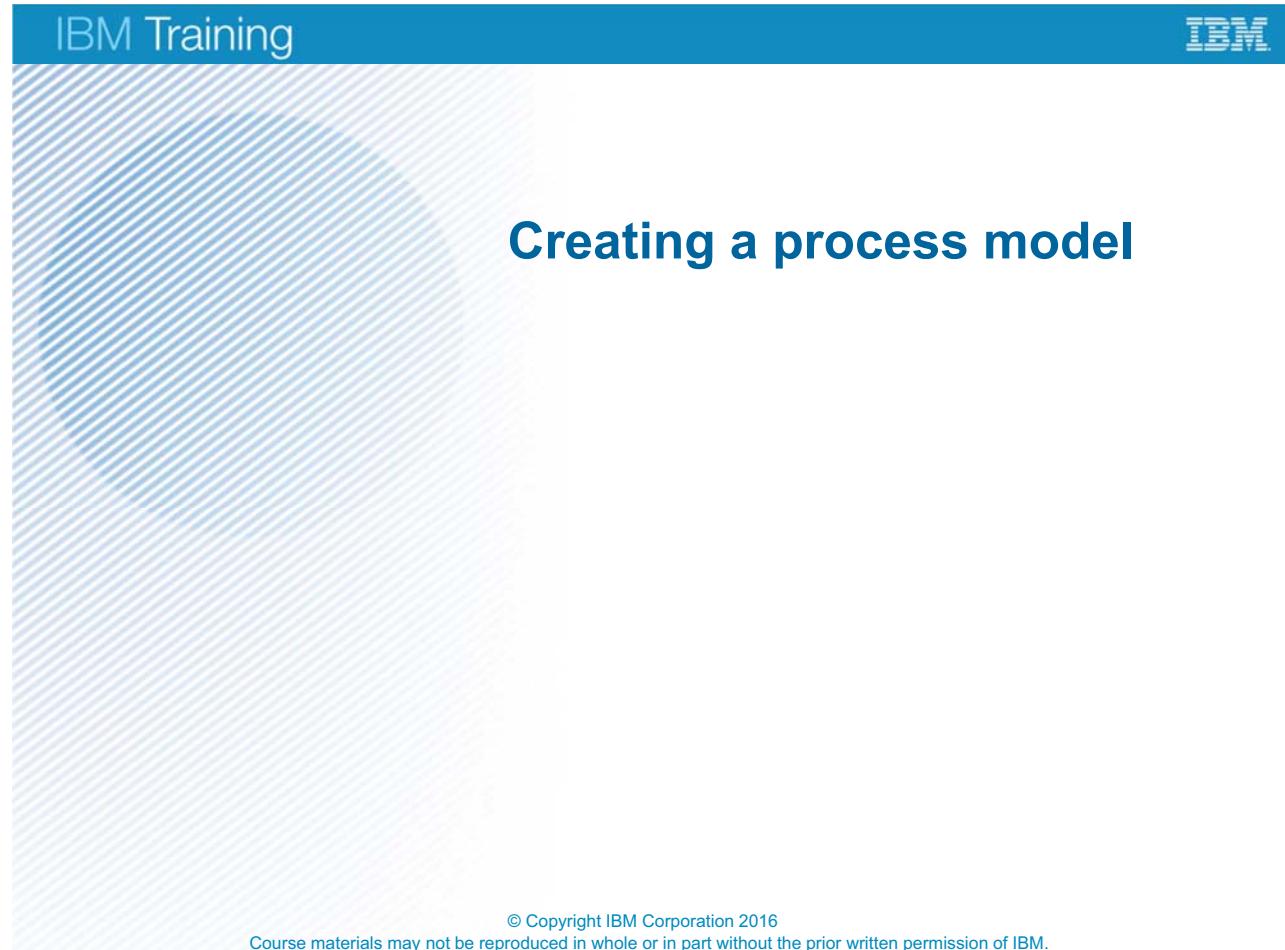
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Figure 3-8. The process spectrum

IBM BPM now supports a broader spectrum of process types. They include structured process, ad hoc, basic process with ordered steps, and basic process with unordered set of activities.

3.2. Creating a process model



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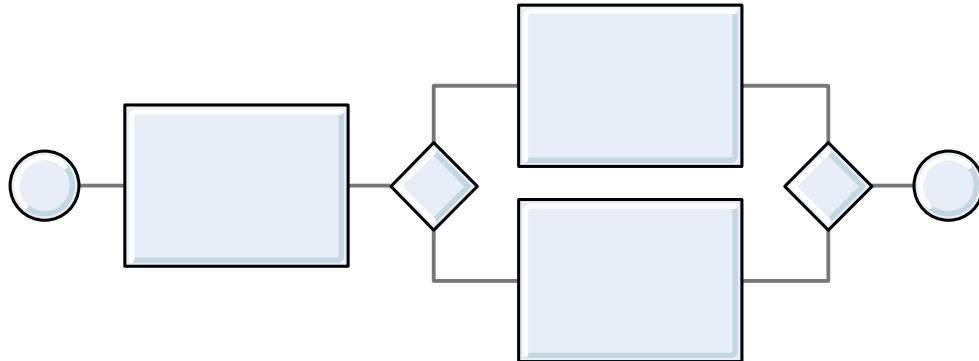
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Figure 3-9. Creating a process model

Creating the process is part of the effort within Playback 0 using the IBM Web Process Designer. Naturally, modeling does not stop with creation of the process model, but continues on through iterations until the business process reflects the specified improvements and adjustments. For this reason, the shift from descriptive modeling to analytical modeling happens to produce the process model that is deemed worthy of implementation.

It begins with the creation of the process model.

Creating the initial process model



- If creating a process model during discovery of the business process, the process model should reflect only the captured data
- The process model should ignore solutions for the process pain points (problems) until analytical modeling
- The process model is agile enough for continued adjustments, so the focus is to have the expected order of process tasks reflected in the model first

Figure 3-10. Creating the initial process model

To understand how to create a process model that is incrementally adjusted through the playback sessions of the business process, follow these guidelines:

- If creating a process model during discovery of the business process, a good practice is to have the process model reflect only the captured data.
- It is a good practice to delay solving process pain points until analytical modeling. During discovery, the focus is on capturing the process.
- The process model is agile enough for continued adjustments, so focus on the expected order of process tasks reflected in the model first.

Automation

- Not the first order of business in process modeling
- Should follow a natural development path from an analysis of the business process pain points
- Merely automating a business process provides the opportunity to make a bad business process more efficiently bad

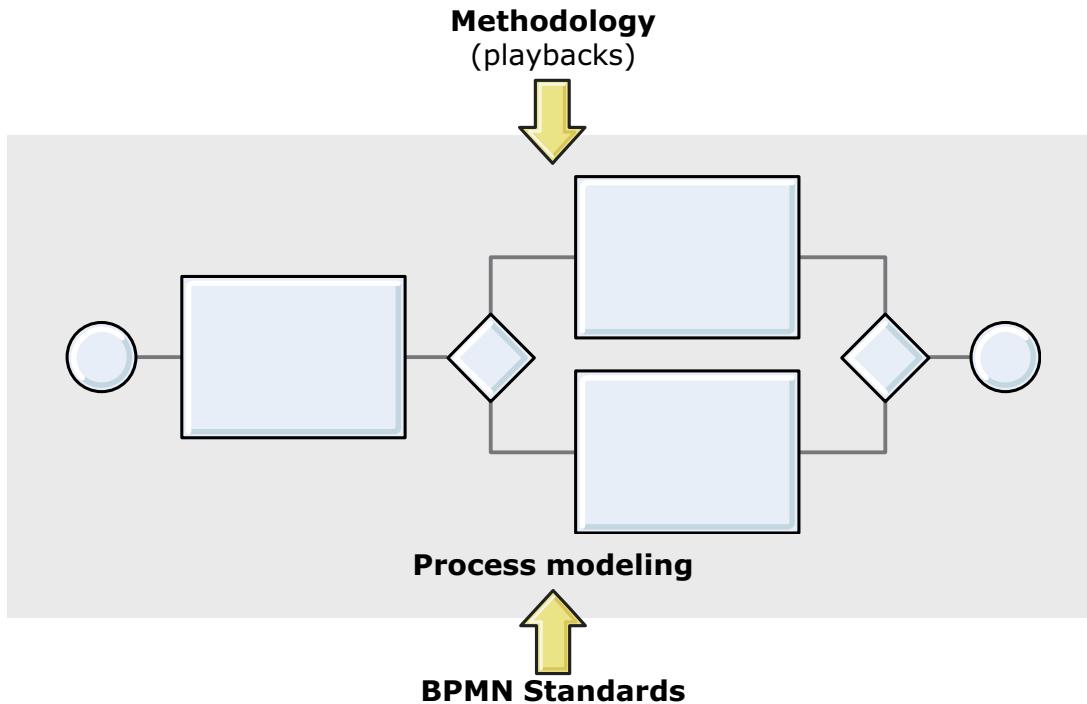
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Figure 3-11. Automation

Give careful attention to the focus of the initial process model. Many times, organizations erroneously believe that BPM is about adding technology solutions to process problems. Soon after the initial sessions to document the business process, the decision to automate process tasks is prematurely made. Automation certainly is a good thing in BPM; however, it is not the first order of business at this early stage. Allow the analytical modeling effort to designate opportunities to automate tasks. It happens naturally as the iterations on the process model provide opportunities to adjust and improve the business process.

Where to start



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Figure 3-12. Where to start

As described earlier, process modeling captures the ordered sequence of activities within a process along with supporting information from start to end. In modeling, the business process is framed with a workflow model to reflect component activities, the roles that are conducting those activities, conditional branching, and the sequencing of the flow of work between activities. In IBM Web Process Designer, this workflow model is called a process, but is also sometimes called a process diagram.

To translate process requirements that are documented in the discovery sessions into a process model, the BPM team must understand how to use the best methods and standards available. Not only is it necessary to translate requirements, they must be translated correctly so that everyone clearly understands the process model.

Where a BPM team starts is by adhering to the standards that are used in process modeling, Business Process Model and Notation (BPMN).

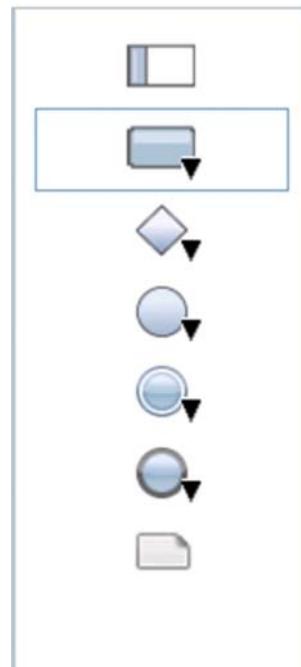
Concurrent to using BPMN to model the business process, a BPM team also uses a development method that works best to collaborate on modeling with business and IT. This development method is called playbacks. IBM Business Process Manager uses the playback to assist project development and BPMN V2.0 as the model standard.



About BPMN

- The standard flow chart-based notation for defining business processes
- Creates a standardized bridge for the gap between business process design and process implementation
- IBM Business Process Manager's Process Designer uses several core elements from BPMN
 - Pool
 - Lane
 - Event
 - Activity
 - Gateway

IBM Web Process Designer element palette



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Figure 3-13. About BPMN

To communicate this model clearly within your organization, apply a notation standard. This notation is known as Business Process Model and Notation or BPMN.

BPMN is used so that everyone involved can interpret and understand the model. Throughout development, many different parties are involved in modeling. Every stakeholder, from the least technical to the most technical, understands the model to provide valuable feedback and continuously improve the process.

BPMN also allows a way to compact your process definition. Many of the symbols represent ideas, so symbols allow for a more concise and smaller model than drawing a diagram without BPMN.

There are many benefits of BPMN, but most importantly, BPMN creates a standardized bridge for the gap between the business process design and process implementation. This single notation is agreed upon among multiple BPM vendors for the benefit of the user community.

IBM Process Designer uses several core BPMN elements:

- Pool
- Lane
- Event
- Activity

- Flow
- Gateway

IBM implements and interprets these elements to have specific meanings and terminology in the IBM Process Designer product. For definitions of the BPMN specification, see the BPMN Specification document version 2.0 from the Object Management Group.

The element palette of IBM Web Process Designer is shown in the slide image. These items correspond to BPMN elements and are used in modeling a process.

A BPMN standards group, which is called Object Management Group, is an international, open membership, not-for-profit technology standards consortium. For more information, visit the Object Management Group website at <http://www.omg.org>.

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Unstructured (ad hoc) activity



- An ad hoc activity has no input flows
- Starts as required by knowledge workers or according to predefined preconditions, rather than by a predefined process flow

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Figure 3-14. Unstructured (ad hoc) activity

An ad hoc activity has no input flows and is started as required by knowledge workers or according to predefined preconditions, rather than by a predefined process flow. Such activities can be required or optional, and they can be defined as repeatable or to run at most once.

Do not add any input or output flows to the ad hoc activity. If you add any flows to the activity, the activity is no longer unstructured. The Activity Behavior section is displayed only for unstructured activities that have User Task, Subprocess, or Linked Process implementations.

To run the instance of the process you need a path from the Start event to at least one activity and then to the End event. With this simple process you can have any number of ad hoc activities.

Properties Validation Errors

- ad hoc activity implementation
 - User/System/Decision Task
 - Subprocess
 - Script
 - Linked process
 - Event Subprocess

General

Implementation (selected)

Data Mapping

Preconditions

Assignments

Pre & Post

Tracking

Activity Type

Type: User Task

Implementation

Implementation: Default Responsive Human Service Responsive Coaches [Select...](#) [New...](#)

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Figure 3-15. Unstructured (ad hoc) activity: Implementation

A simple dialog box is used to specify the behavior of the activity, including preconditions for enabling the activity. ad hoc activity implementation can mainly be of following types:

- User Task
- Single user interaction (human service)
- Subprocess
- Embedded within the Process
- Linked Process
- Separately authored Process



Unstructured (ad hoc) activity: Behavior

Properties Validation Errors

General

Implementation

Data Mapping

Preconditions

Assignments

Pre & Post

Tracking

Common

Name: Unwired Activity

Color:

Documentation:

Behavior

The activity runs even though it does not have an inbound flow

How is the activity started?

Automatically by the system

Manually by the user

Does the activity have to be completed?

Yes. The activity is required

No. The activity is optional

Repeatable. The activity can be invoked multiple times i

Hidden. This is a background activity that users will not see

- ad hoc activity behavior
 - Automatic or manual
 - Required or optional
 - Repeatable
 - Hidden

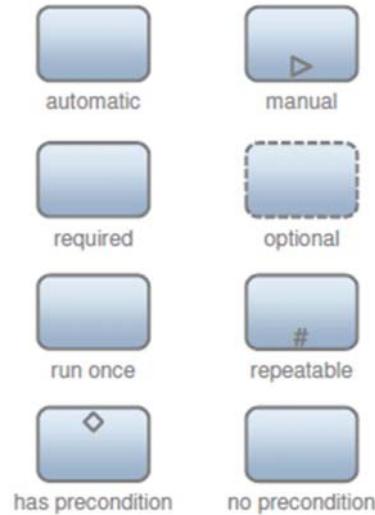
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Figure 3-16. Unstructured (ad hoc) activity: Behavior

Unstructured (ad hoc) activity: Behavior

- Activity start
 - Invoked automatically by the process
 - Invoked manually by the user
- Activity completion
 - Required (must be invoked at least once)
 - Optional
- Repeatable
 - Can only run once
 - Can be invoked multiple times
- Precondition
 - A document is filed in the process
 - A variable is changed
 - A precondition expression is met
 - No precondition event for this activity



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Figure 3-17. Unstructured (ad hoc) activity: Behavior

ad hoc activity: Precondition

- Document filed
 - Optionally combined with boolean expression
 - Evaluated each time a document is filed
- Variable changed
 - Specified list of variables that are monitored
 - Optionally combined with boolean expression
 - Evaluated each time a variable value changes
- Boolean expression only
 - Evaluated at case start and each time a variable value changes

3.3. Pool and lanes

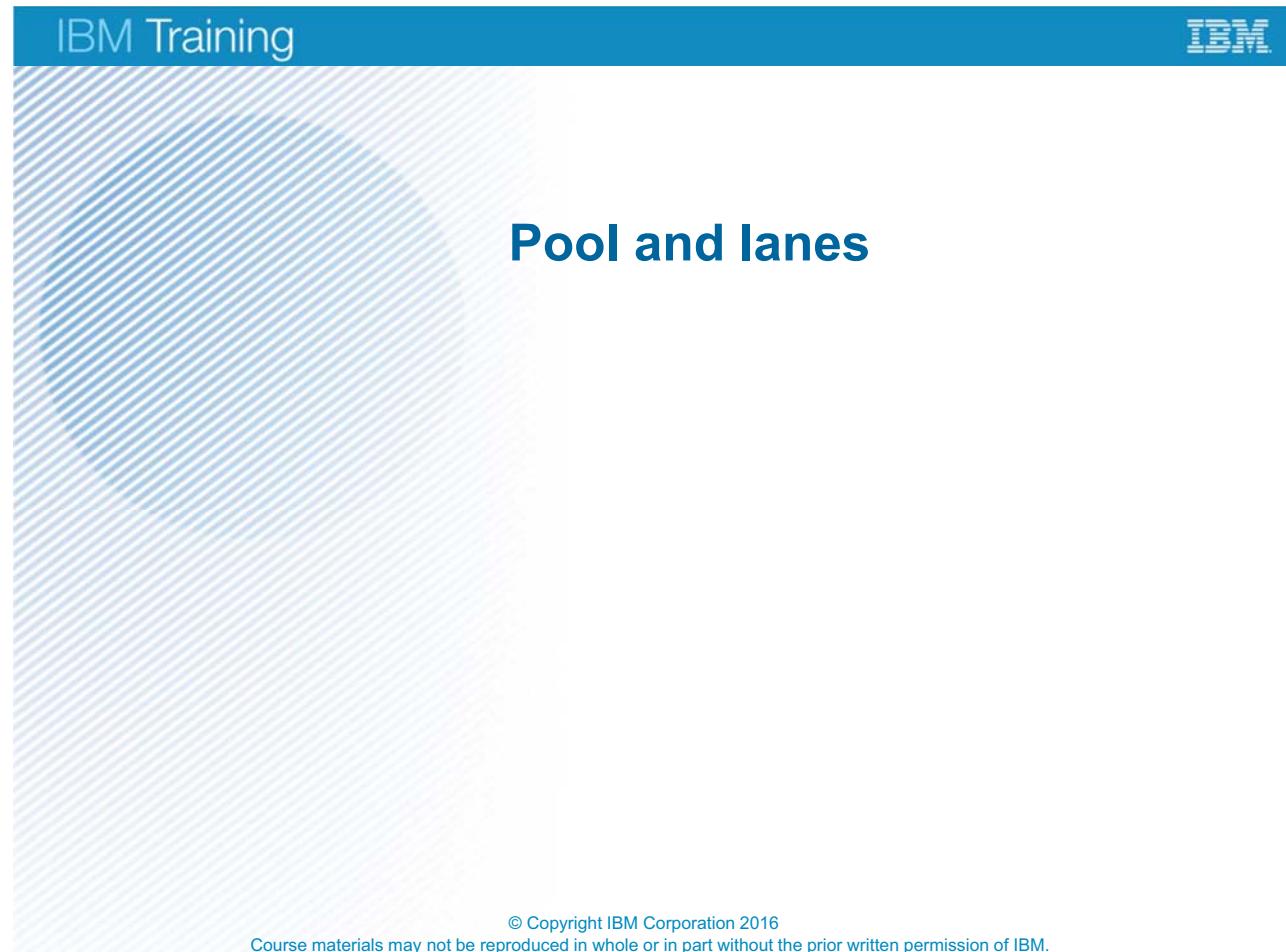


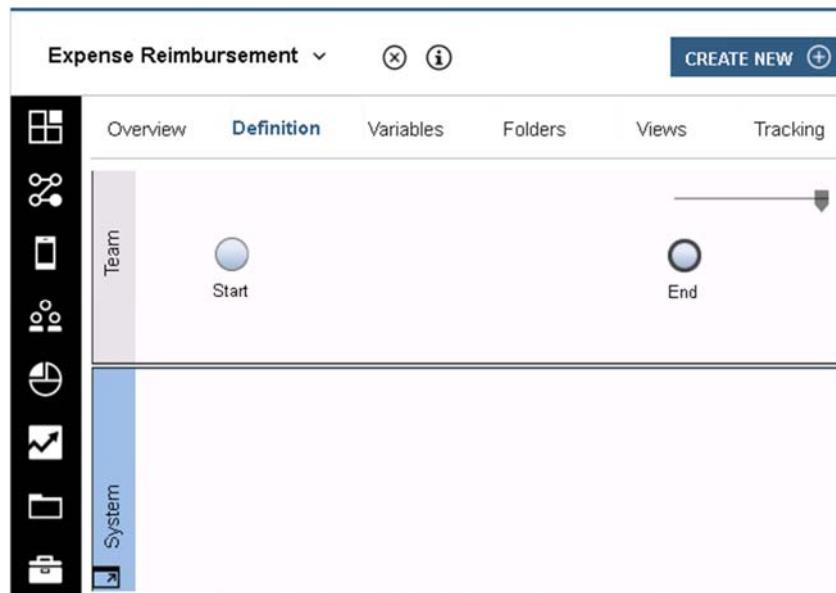
Figure 3-18. Pool and lanes

The discovery and analysis session provides details about the business process that can be converted into BPMN process model elements. These elements can be used in conjunction as a diagram that describes the business process and later runs the process application. This section deals with two specific elements: pools and lanes.

In IBM Web Process Designer, the default setup for newly created process, is one pool and two lanes. One lane represents a team and the other a system lane.

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Pool



- A graphical element that is called a pool contains each process
- The name of the pool is the same as the name of the process

Playback 0: Modeling the as-is business process

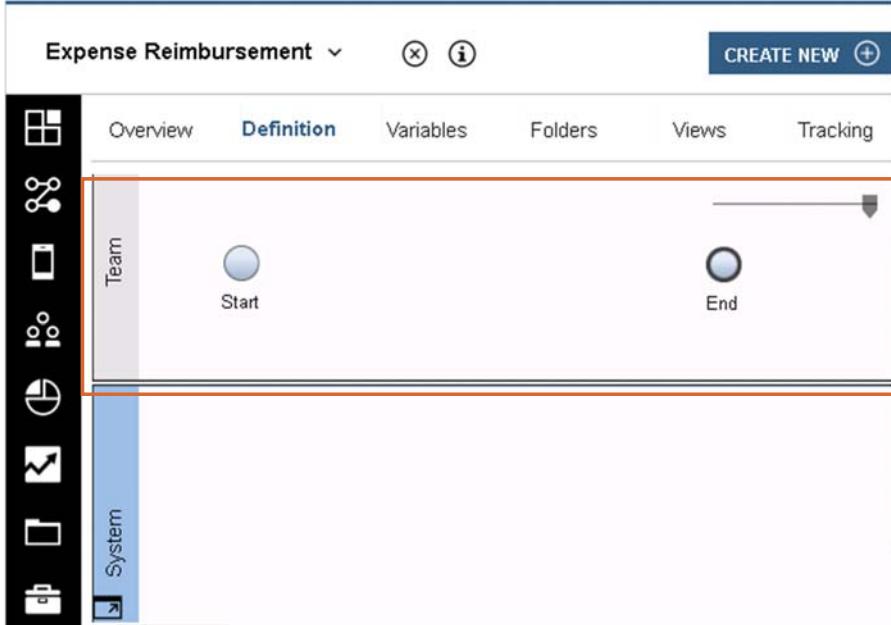
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Figure 3-19. Pool

A process that you model in IBM Web Process Designer includes the default IBM Web Process Designer pool, which consists of two default lanes. In essence, the pool is the BPMN element that represents the entire business process. The pool is the only element that is not found in the element palette and does not have properties, but it is the default setup for all models that are created in IBM Web Process Designer.

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Lanes



- Contained in each pool are lanes
- The top lane is a **Team** lane and bottom lane is **System** lane

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Figure 3-20. Lanes

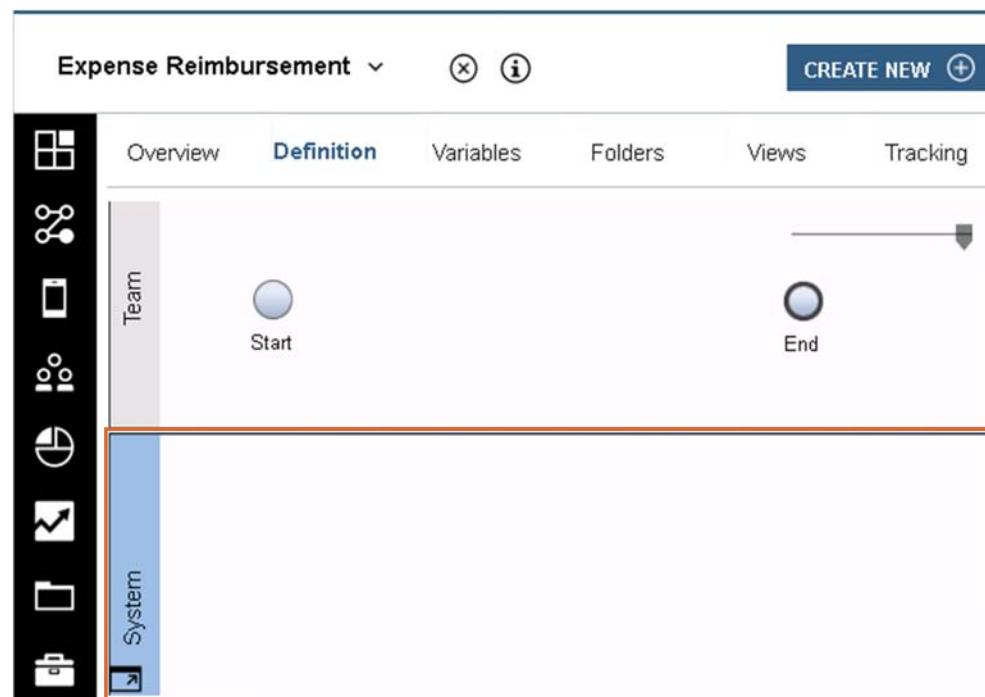
Each lane represents a team, and the process task responsible role is detailed in the discovery and analysis session. Lanes provide context for a process model as each lane contains a series of activities that are assigned to a specific team member or events that transpire in the process. Activities and events are covered in more detail in the other sections of this unit.

To obtain the details for the team during discovery and analysis, user stories help determine which teams are responsible to conduct specific process tasks. Each of these teams is assigned to a lane when you model the process. It is important to remember that a team is a role, and not a person, in a process model.

The analogy of a swimming pool is a perfect description, as the pool with the associated lanes visually represents swimlanes in a pool. Swimmers are thought of as the teams who are swimming the length of the pool, completing tasks in their lane.

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System lane



- Lanes can also be assigned to systems, and automated tasks are often in the designated system lane

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Figure 3-21. System lane

When the time comes to define process tasks that are automated, the process model needs a way to communicate with automated tasks. A process participant who is assigned to a lane is not always a responsible human role. Process participants who are assigned to lanes can also be systems.

For example, the discovery and analysis session might find that a system, rather than a human role, completes a certain set of process tasks such as conducting a background check on a loan. IBM Process Designer has a specific default lane to contain these sorts of automated tasks: the system lane. During the initial process model build, tasks that are automated are represented as part of the system lane.

Further automation of process tasks is designed when the process is improved and validated through the iterative playback project development. This iterative development can mean system lane movement and rearrangement to indicate where efficiency is found for the entire business process.

Unit summary

- Create a process application
- Model a process
- Describe pools and lanes

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Figure 3-22. Unit summary

Review questions

1. True or False?

Lanes can also be assigned to systems, and automated tasks are often in the designated system lane

2. _____ is a container for process models and their supporting implementations, and it is stored in the repository.

- A. Process application
- B. Pool
- C. Activity
- D. Team

Figure 3-23. Review questions

Write your answers here:

1.

2.

Review answers

- 1. True**
- 2. A: Process application**

Exercise: Playback 0: Creating a process with ad hoc activities

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Figure 3-25. Exercise: Playback 0: Creating a process with ad hoc activities

Exercise objectives

After completing this exercise, you should be able to:

- Start IBM Business Process Manager
- Create a process application by using the web Process Designer
- Create the foundation for a structured process by adding the appropriate lanes to the default pool
- Create a process
- Add ad hoc activities to the team lanes

Unit 4. Playback 0: Modeling the to-be business process

Estimated time

02:30

Overview

This unit provides an overview of BlueWorks Live, which is an IBM tool that is used primarily for modeling and analysis of processes. The unit also covers the core notation elements that are used in the web Process Designer. Naturally, modeling does not end with creation of the process model, but continues through iterations until the business process reflects the specified improvements and adjustments. For this reason, the shift from descriptive modeling to analytical modeling is necessary to produce the process model that is deemed worthy of implementation. This unit covers the categories of activities like processes and nested processes that contain process tasks.

How you will check your progress

- Checkpoint questions and lab exercises

Unit objectives

- Describe the purpose and function of BlueWorks Live
- List and describe the core notation elements that are used in the web Process Designer
- Examine a defined workflow from detailed process requirements and identify the interrelated process activities and the roles that are responsible for completing them
- Decompose activities into processes and nested processes that contain process tasks
- Create a process, nested process tasks, and responsible roles

Playback 0: Modeling the to-be business process

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Figure 4-1. Unit objectives

Topics

- About Blueworks Live
- Creating a process model
- Flow objects
- Nested process

Playback 0: Modeling the to-be business process

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Figure 4-2. Topics

4.1. About Bluemix Live

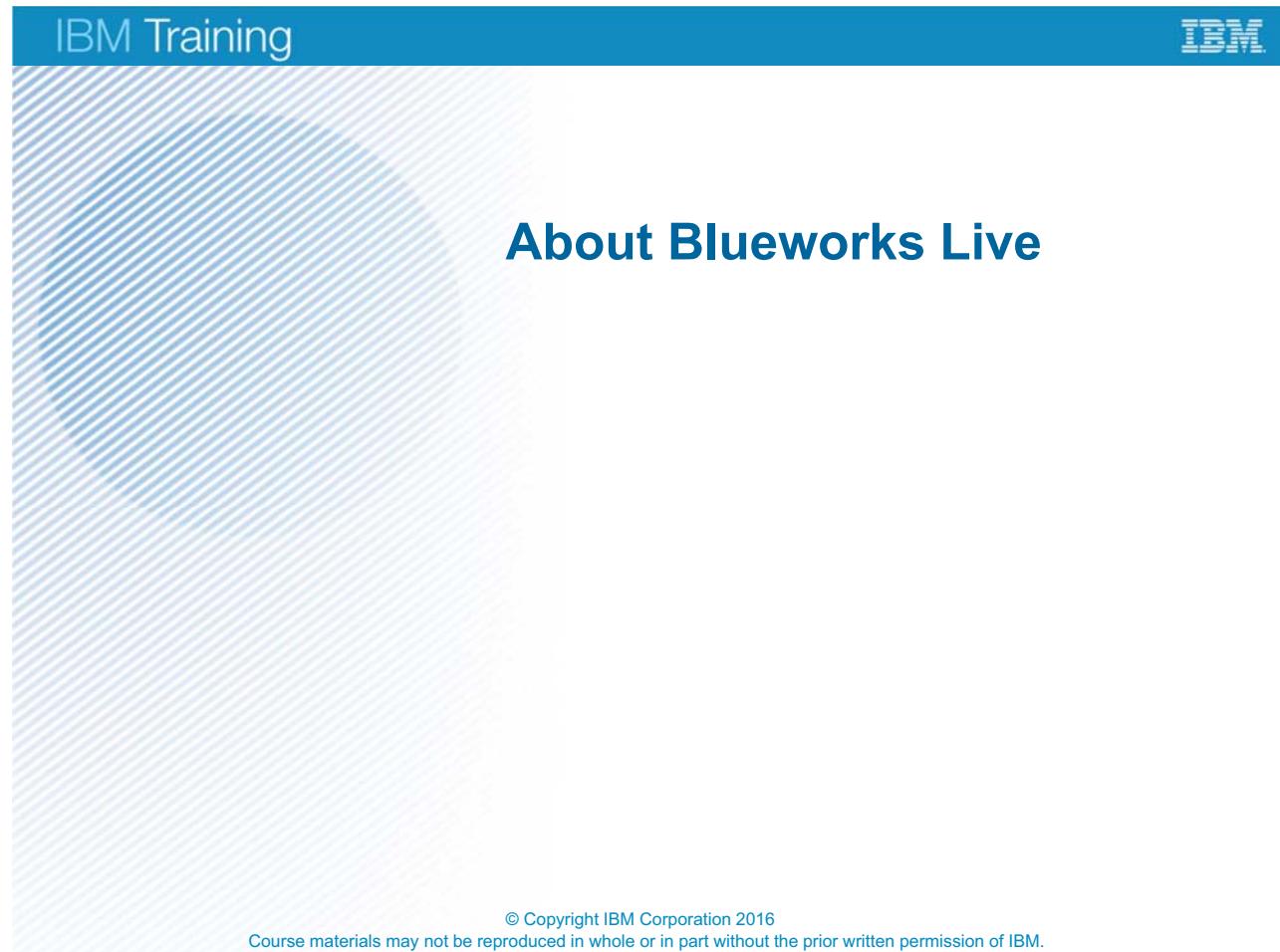


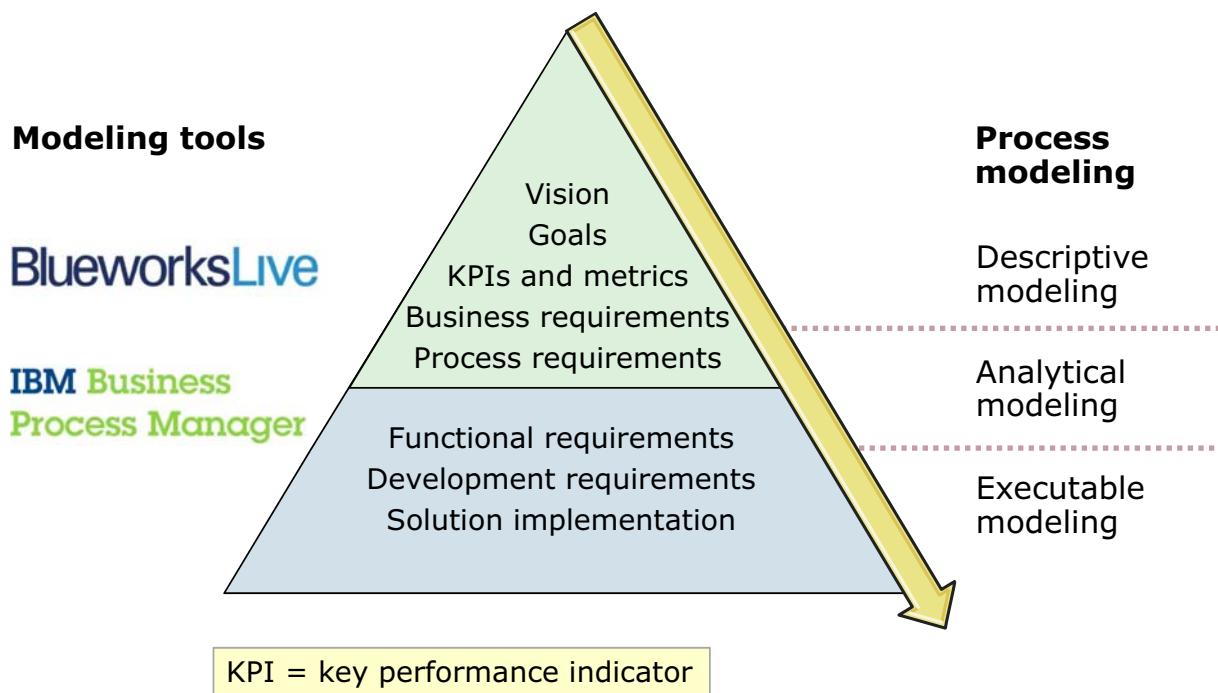
Figure 4-3. About Blueworks Live

Earlier in the unit, you initially learned about Blueworks Live as an IBM tool used primarily for modeling and analysis of processes. In this topic, the tool and a few of its capabilities are explored.

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How does Blaworks Live fit in process modeling?



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Figure 4-4. How does Blaworks Live fit in process modeling?

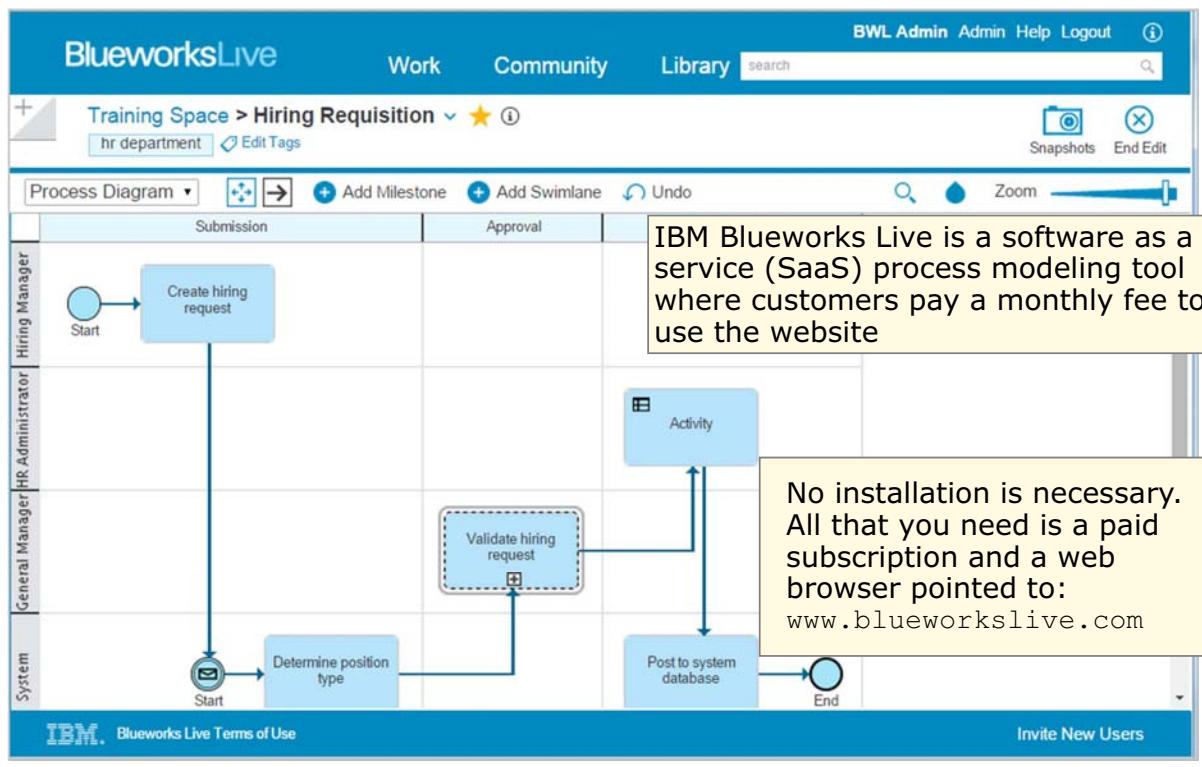
Blaworks Live is one of the best in market tools for discovery and initial definition of a process.

Often the pattern is that a company creates models and completes process analysis in Blaworks Live and then moves processes into IBM Business Process Manager for implementation and integration with different systems.

As mentioned before, it is important to note that both tools do not have a clear demarcation where one stops and the other begins in terms of process modeling. That varies from project to project; however, both work together to engage the business and IT sides of a business.

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Blueworks Live and SaaS



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Figure 4-5. Blueworks Live and SaaS

IBM Blueworks Live is a software as a service (SaaS) tool where customers pay a monthly fee to use the website. It is frequently updated and improved based on user comments and requests. No installation is necessary. All that is needed is a paid subscription and web browser pointed to: www.blueworkslive.com

Blueworks Live is different from many other IBM products because it is sold as software as a service, or SaaS. Customers pay a monthly fee to subscribe to the service.

Every 8 – 12 weeks, a new release of Blueworks Live is completed. Many times, the developers rely on suggestions from the customer community to create and add new features. When there is an update, you do nothing; your software is automatically updated.

Blueworks Live requires only an Internet connection and web browser to get started with modeling. There are no product installation or maintenance hassles. It is a quick way to start mapping your processes and can be used for running small, simple processes.

Although IBM Blueworks Live is used as an example in the unit slides for modeling and analyzing your processes, you can also use other third party modeling tools for process modeling.

Decision discovery with Blueworks Live

- Use Blueworks Live to discover and document the decisions within business processes
- Decisions can be modeled graphically, enabling users to compose, view, and collaborate on decision diagrams
- Key characteristics of decisions can be captured, and the decision logic that is documented by using decisions tables
- Changes to decisions can be tracked, and previous versions of decisions restored
- Decisions of interest can be easily located, along with the business processes that are using those decisions
- You can share decision documentation by printing decision diagrams, exporting decision information to MS Word and MS Excel, and sharing links to decisions

Playback 0: Modeling the to-be business process

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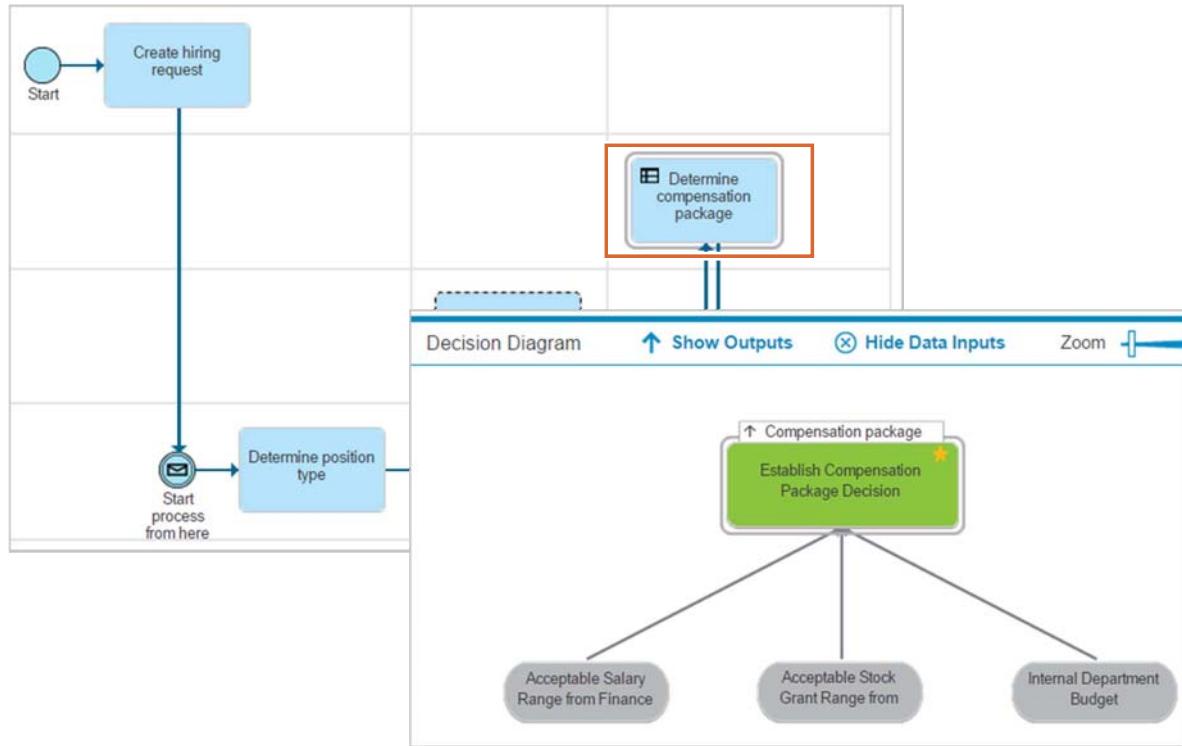
Figure 4-6. Decision discovery with Blueworks Live

In addition to the process discovery and design capabilities of Blueworks Live, it also features decision discovery and design capabilities. IBM Blueworks Live has many collaborative and social features for modeling and completing processes. The product has real-time editing, where you can view others' changes as they happen. There is also a version history available if you must revert to a past version or undo changes.

Many social features such as streams, commenting, messaging, and sharing, are available to connect people to get the best process model possible.



Decisions within business processes



Playback 0: Modeling the to-be business process

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Figure 4-7. Decisions within business processes

In Blaworks Live, a decision is associated with a *Decision Task* in the Process Diagram. A Decision Task is equivalent to a *Business Rule Task* in BPMN 2.0, and uses the same graphical notation and icon. You can also document many of the key decision characteristics explicitly in Blaworks Live.



Collaborative and social modeling

- Real-time editing: Collaborate with others on the same model and see their changes in real time
- Private and public IBM Business Process Manager streams to see what is happening around you
- See who is online to send messages and share processes
- Comment on another user's processes

The screenshot shows the BlueworksLive application interface. At the top, there is a navigation bar with tabs: 'Work' (which is selected), 'Community', and 'Library'. Below the navigation bar, there is a section titled 'PRIVATE ACTIVITY STREAM'. On the left side of this section, there is a sidebar with the following items:

- All Activity** (selected)
- Followed Items** (with a star icon)
- Posts**
- QUICK LINKS**
- Processes**
- Decisions**

On the right side of the 'PRIVATE ACTIVITY STREAM' section, there are several buttons: 'Date', 'User', 'Process', 'Space', 'Expand All', 'Collapse All', and a 'New Post' button. Below these buttons, there is a descriptive text: 'The private activity stream will automatically update with a list of recent activities that occur within your account.' At the bottom of the screenshot, there is a footer with the text 'Playback 0: Modeling the to-be business process' on the left and '© Copyright IBM Corporation 2016' on the right.

Figure 4-8. Collaborative and social modeling

IBM Blueworks Live: Trial and education offerings

- Try the full version of IBM Blueworks Live for 30 days without charge
 - Sign up at <https://www.blueworkslive.com>



- IBM Blueworks Live self-paced virtual classes:
 - ZB031 Process Discovery and Modeling in IBM Blueworks Live
 - ZB030 IBM Blueworks Live Account Administration
- IBM Blueworks Live distinguishes between four types of licenses: Editors, Contributors, Viewers, and Community, that needs to be licensed separately and does not come as part of the IBM Business Process Manager product license

Playback 0: Modeling the to-be business process

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Figure 4-9. IBM Blueworks Live: Trial and education offerings

Blueworks Live distinguishes between four types of licenses: Editors, Contributors, Viewers, and Community with the following capabilities:

Editors are able to:

- Create and modify processes & decisions
- Publish processes & decisions
- Automate processes
- Manage spaces
- Utilize the Analyze and Playback features

Contributors are able to:

- Add Comments to processes & decisions
- Participate in process automation

Viewers are able to:

- View published processes and decisions
- Viewers can follow the link to open published process in Blueworks Live.

- Viewers can review process & decision details: Discovery map, Process diagram & Process documentation

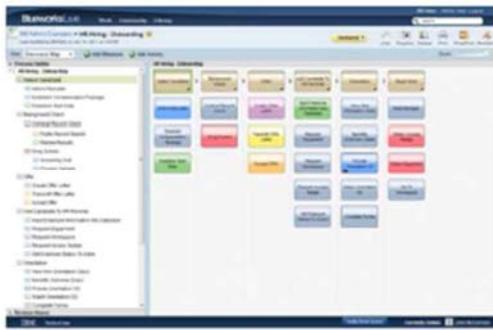
Community users can:

- View the Community tab
- Perform the role of account Admin



Leveraging IBM Blueworks Live and IBM BPM (1 of 3)

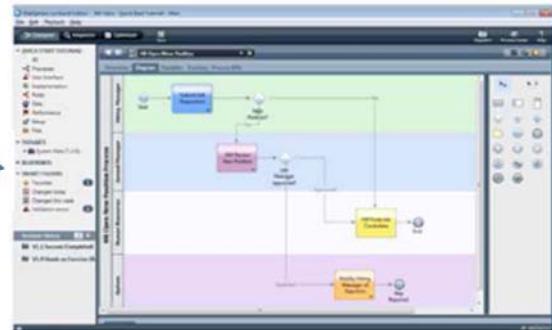
BlueworksLive



The Simplest way to get started with IBM BPM

Process Discovery
“Modeling for Documentation”

**IBM
Business
Process
Manager**



The quickest way to deliver robust process applications

Process Implementation
“Modeling for Execution”

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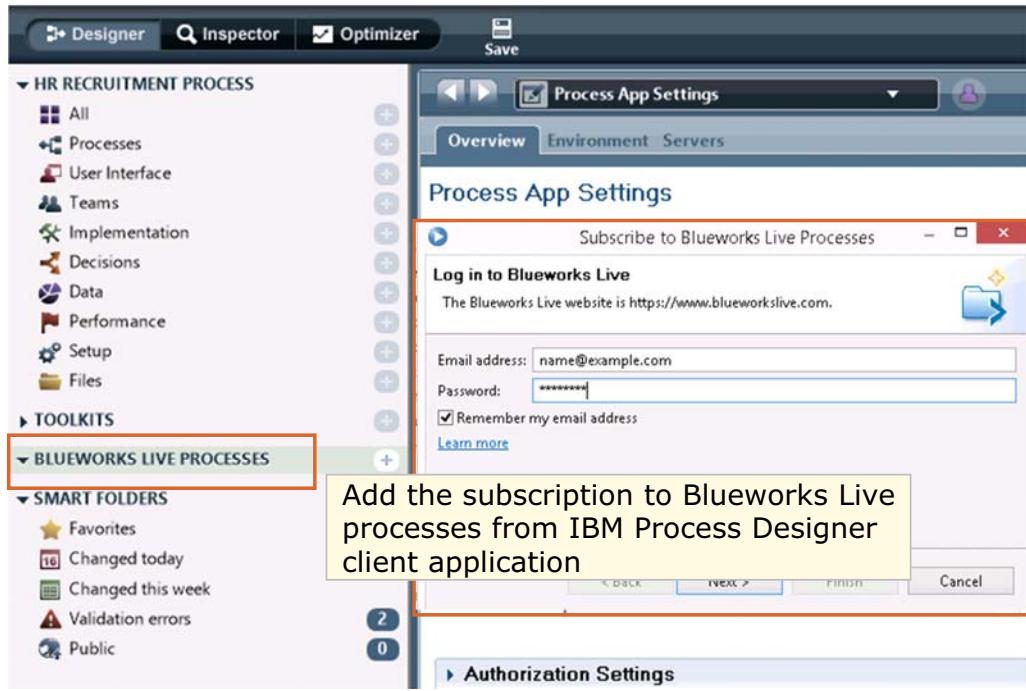
Figure 4-10. Leveraging IBM Blueworks Live and IBM BPM (1 of 3)

A business programmer, can use the integration between IBM Blueworks Live and IBM BPM to implement the models defined by business analysts. A business programmer already knows that the models accurately reflect the business needs of the end user, because business analysts established that when they used IBM Blueworks Live for process discovery. So now the business programmer can focus on quickly implementing those models in Process Center and Process Designer, by subscribing to the processes discovered in IBM Blueworks Live.



Leveraging IBM Blaworks Live and IBM BPM (2 of 3)

- IBM BPM provides features to integrate process *implementation* in IBM BPM with process *discovery* in IBM Blaworks Live.



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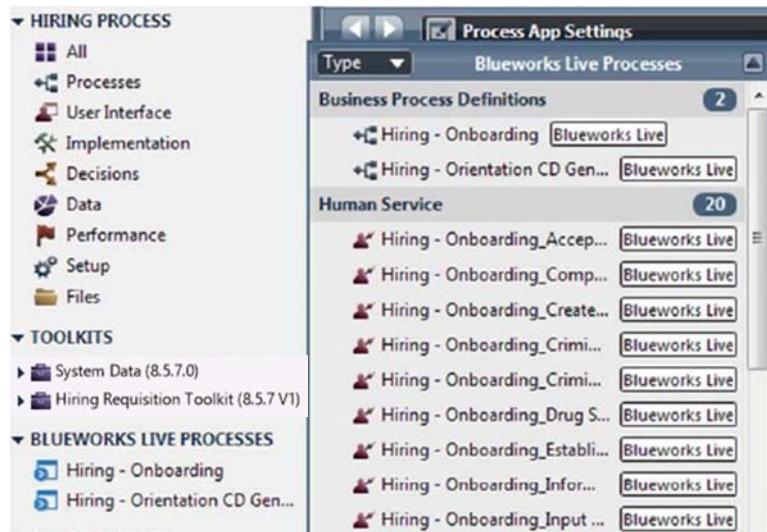
Figure 4-11. Leveraging IBM Blaworks Live and IBM BPM (2 of 3)

You can add a subscription to the IBM Blaworks Live processes by clicking the (+) plus sign next to the IBM Blaworks Live Processes section in IBM Process Designer client application.



Leveraging IBM Blueworks Live and IBM BPM (3 of 3)

- After subscribing, you can locate your subscriptions in the library items in IBM Process Designer application
- After a process has been imported, you still need to implement it



Note:-

- In this course you are not using Blueworks Live
- You model your processes using Web Process Designer in this course

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Figure 4-12. Leveraging IBM Blueworks Live and IBM BPM (3 of 3)

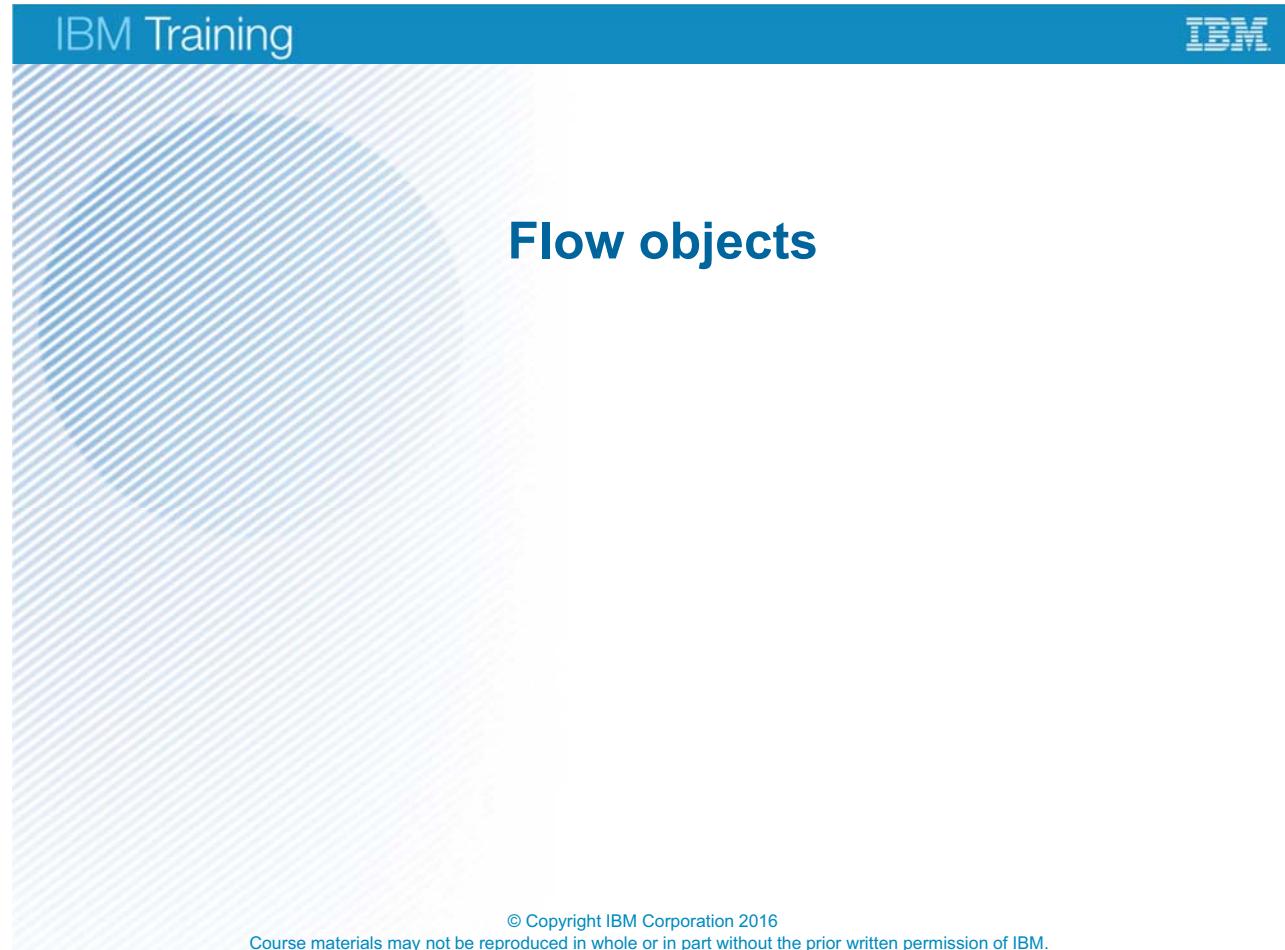
IBM Business Process Manager provides features to integrate process *implementation* in IBM BPM with process *discovery* in IBM Blueworks Live. Once a business analyst has completed the process discovery phase, the process requirements are quickly delivered to IBM Business Process Manager. They can be implemented as a process by a business programmer using IBM Web Process Designer.

In this course you are not using Blueworks Live. You model your processes using IBM Web Process Designer.

To learn Blueworks live, you can enroll to IBM Blueworks Live self-paced virtual classes: ZB031: Process Discovery and Modeling in IBM Blueworks Live and ZB030: IBM Blueworks Live Account Administration.

Try the full version of IBM Blueworks Live for 30 days without charge. Sign up at <https://www.blueworkslive.com>

4.2. Flow objects

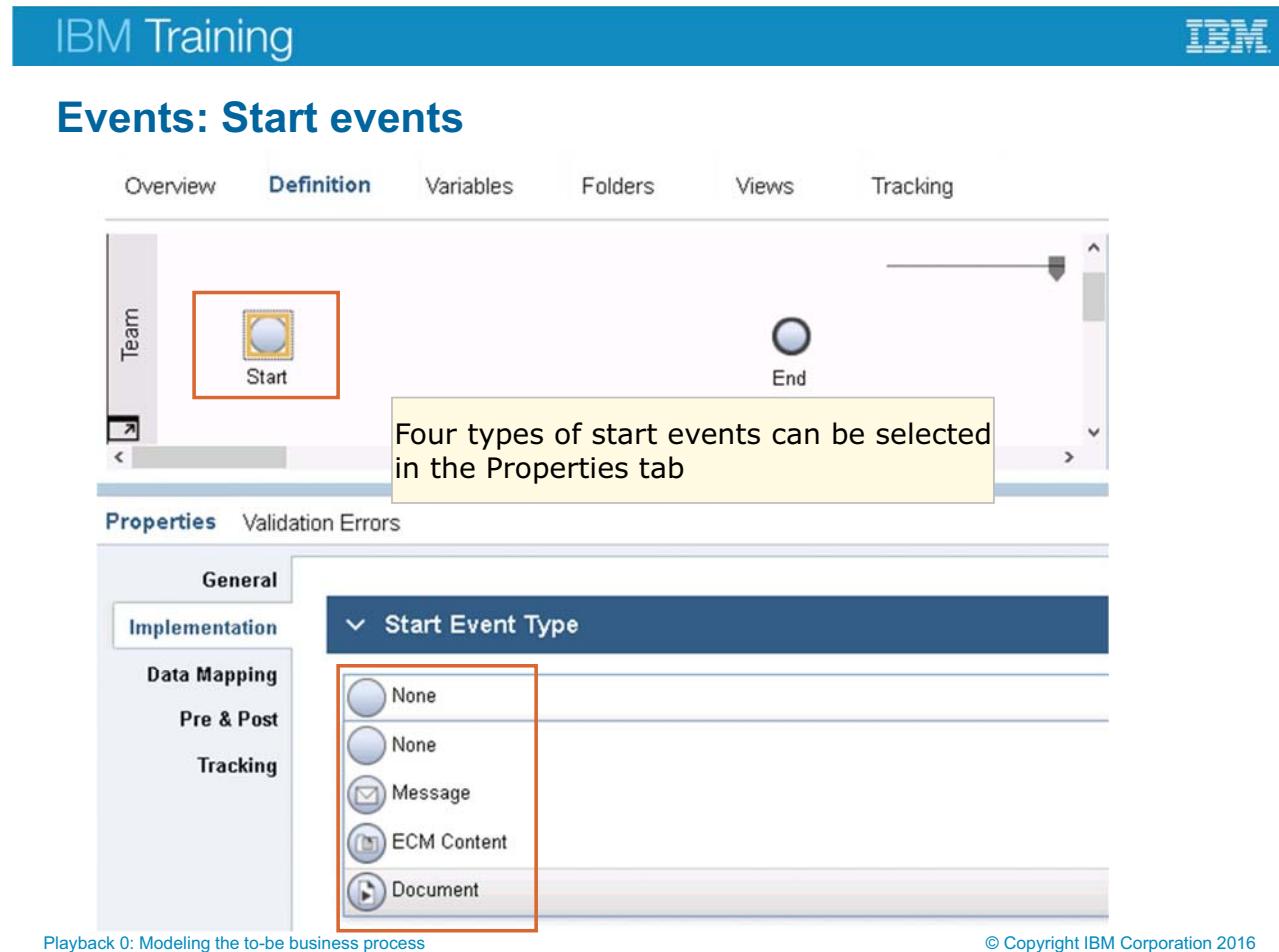


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Figure 4-13. Flow objects

At this stage of diagramming a business process, an author considers flow objects for the model. Flow objects in a process model are in the lane for teams because they represent either process task assignments or process controls. In this course, you are not examining every type of event, activity, or gateway available in IBM Web Process Designer. Instead, you learn the most commonly used types of flow objects and your specific needs for modeling your first process. The remainder of this unit and the upcoming units cover the different types of flow objects as modeled using the IBM Business Process Manager Web Process Designer.



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Figure 4-14. Events: Start events

Events

Events are control flow objects for a process model. Just like the definition of an event in everyday life, an event is something that occurs during a process. There are three categories of events: start events, intermediate events, and end events. In the initial process model, it is important to have a start event and an end event. You focus on start and end events in this unit and revisit intermediate events in a later unit.

Start events

A circle encompassed by a single line represents a start event. Start events trigger the initiation of the process through a manual or automatic input. Authors describe the input in the properties tab documentation box that is provided for the element.

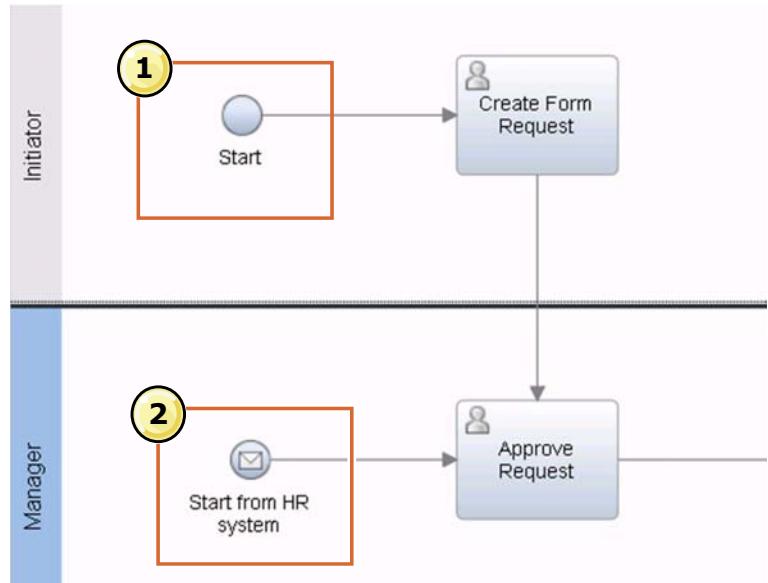
There are four types of start events in IBM Web Process Designer: none, message, content, and document. This course focuses only on the first two, none and message. The content and document event types are covered in the next course, WB824: Process Implementing with IBM Business Process Manager V8.5.7 – II.

- **None:** Use the none implementation option if you want to enable process participants to start a process manually from the IBM Process Portal. Or, use this implementation option when you intend to use a process as a linked process from another higher-level process.

- **Message:** Use the message implementation option if you want an incoming message to start a process or an event subprocess.

Events: Multiple start events

- 1** There can be only one “none” start event per process



- 2** To add a second start event to a process, you must use a message or content start event
— This example shows a message start event

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Figure 4-15. Events: Multiple start events

The two types of start events that are used most often are **none** and **message**.

1. **None:** The **None** event can be called a standard start event and is represented as a circle that does not have an internal marker. In a process, you can have only a single standard start event. If you try to model more than one standard start event, the process does not run and alerts you to the error. Creation of a process gives you one standard start event by default. When any user that "Launches" or creates an instance of this process from the Process Portal, the process starts from the None event type. Other start event types create instances of the process through other methods (messages, events, document and content uploads).
2. **Message:** Another type of start event is **message**. This start event is represented as a start event with an internal marker of an envelope. Message start events start a process when an external signal is received.

For example, suppose that your company wants its employee onboarding process to start when a new employee record is created in the HR system. When a new record is created, the HR system sends an event to IBM Business Process Manager. IBM captures that event and starts the follow-on events for the process. You can have more than one message start event for a business process definition.

The screenshot shows the IBM BPM Studio interface. At the top, there's a blue header bar with the text "IBM Training" on the left and the "IBM" logo on the right. Below the header is a navigation bar with tabs: Overview, Definition (which is currently selected), Variables, Folders, Views, and Tracking. The main workspace shows a process diagram with a "Start" event (a blue circle) and an "End" event (a circle with a thick black border). A vertical toolbar on the left is labeled "Team". In the bottom-left corner of the workspace, there's a small "Team" icon. The bottom of the screen has a toolbar with icons for Save, Undo, Redo, and Print.

Properties Validation Errors

- General
- Implementation
- Data Mapping
- Pre & Post
- Tracking

End Event Type

- None
- None
- Message
- Error
- Terminate

Four types of end events can be selected in the Properties tab

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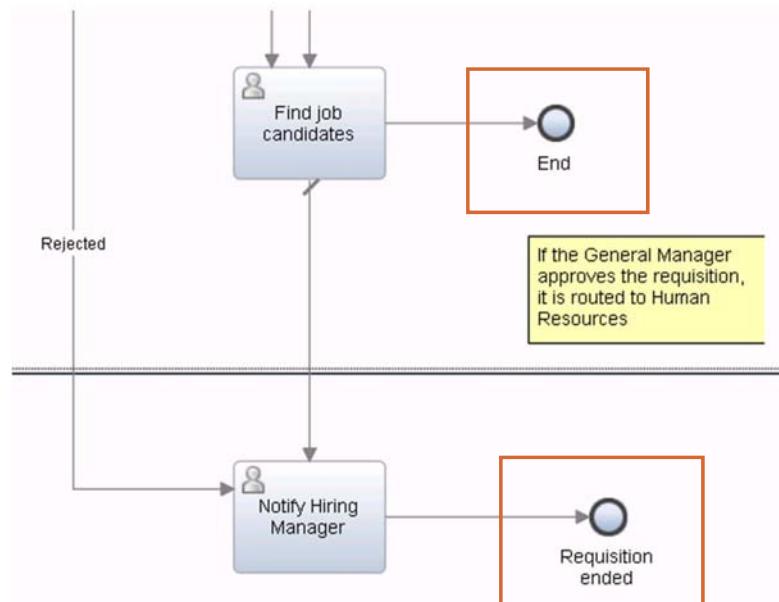
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Figure 4-16. Events: End events

An end event is represented as a circle encompassed by a dark thick single line. End events are reached in a process when a final decision from all activities or a partial set of activities is reached.

There are four types of end events: none, message, error, and terminate.

Events: Multiple end events



- This process has two none end events: **End** and **Requisition ended**
- When you have more than one none end event, each should have a unique name

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Figure 4-17. Events: Multiple end events

The type of end event that is used most often is the **none** end event.

This type of end event can also be called a standard end event, and is represented as a dark circle that does not have an internal image. Unlike standard start events, you can have multiple standard end events. So any process can have a single standard start event, and one or multiple standard end events. Creation of a process gives you one standard end event.

Multiple end events can improve understanding of the business process flow. An end event can signify the end of a process instance, or if it is a process that is linked by another process, the end event signifies the end of the subprocess, and the flow continues from the end event. In this regard, you can connect process flow coming from multiple end events to a parent process that contains this process as a linked process.

The screenshot shows the IBM BPM Studio interface. At the top, there's a blue header bar with the text "IBM Training" and the IBM logo. Below the header, the main interface has a toolbar with tabs: Overview, Definition (which is selected), Variables, Folders, Views, and Tracking. The main workspace displays a process flow diagram with a central activity labeled "File Expense Report". This activity is highlighted with a red box. To the left of the workspace is a vertical sidebar with sections: Team, Start, End, Properties, Validation Errors, General, Implementation (which is selected), Data Mapping, Preconditions, Assignments, Pre & Post, and Tracking. Under the Implementation tab, there's a section titled "Activity Type" with a dropdown menu. This menu is also highlighted with a red box and lists several activity types: User Task, System Task, Decision Task, Script, Subprocess, Linked Process, and Event Subprocess. The "User Task" option is the first item in the list.

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Figure 4-18. Activity: Task types (1 of 2)

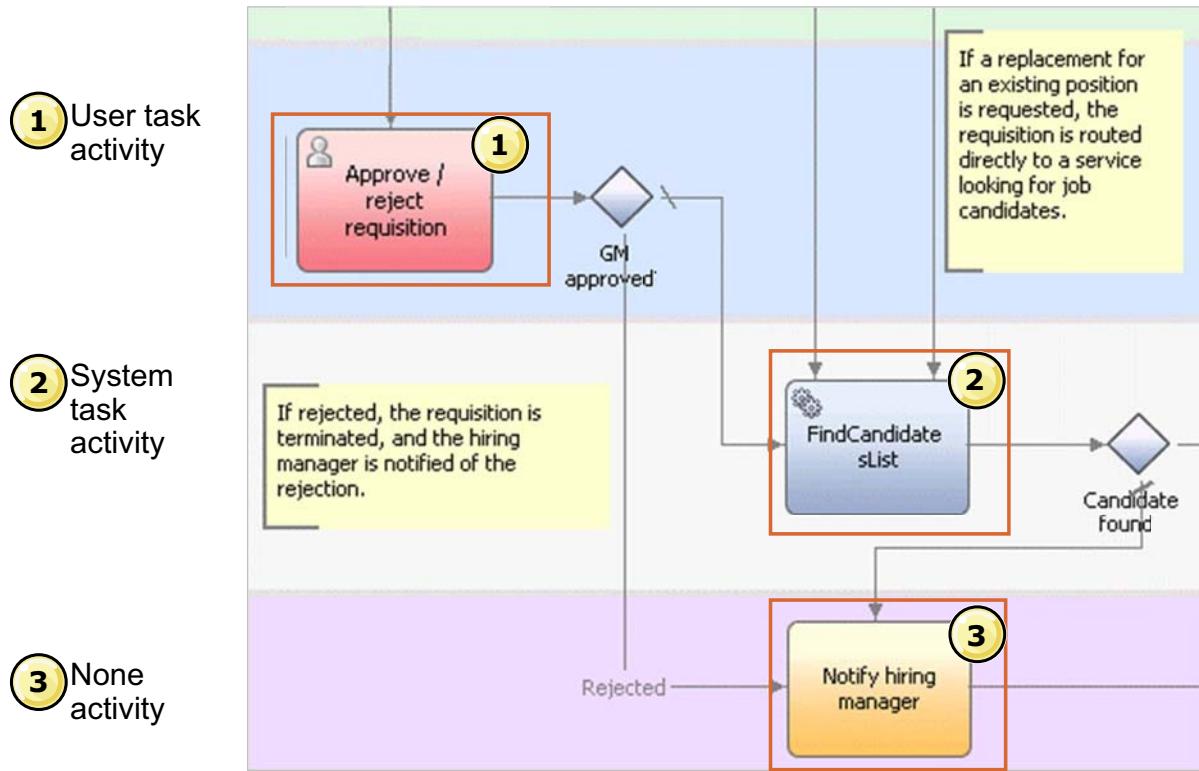
In a process, you can change the activity type by selecting the activity, clicking the Properties > Implementation > Activity Type section, and choosing the type of activity from the menu.

The activity that is highlighted in the process is a task that is assigned to a team. The icons that are used for none and the other task-type activities are highlighted in the Properties tab.

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Activity: Task types (2 of 2)



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Figure 4-19. Activity: Task types (2 of 2)

There are several task types, as follows:

- **None:** An activity of type **none** has no implementation, and is represented as a rounded corner rectangle with no icons or symbols.

This activity can be useful when initially modeling if you are unsure of the implementation of an activity or its type because of vague requirements or because you are currently analyzing the model. As the model evolves, the activity type can be changed to something more specific. This type is not displayed by default, so you select it in the implementation section if it is something that you would like to use.

The stage of modeling in the example process lends itself more towards defining types as you already have specific requirements.

- **Task activities:** All task activities have an icon in the upper left corner of the activity to indicate their type.

The four types of task activities are user task, system task, decision task, and script (task).

User and system tasks are the more common types of task activities that are used for modeling. A decision task is used in another course unit during implementation of the process. Scripts are also used during implementation of the process model.

- **User tasks:** A user task is represented as an activity with a human or person icon in the upper-left corner.

User tasks are selected if a user or human starts or completes an activity. One example of a user task is that an employee fills out an expense report and submits it for compensation. If you drag an activity from the palette to a non-system team lane, you automatically get a user task activity in your process.

- **System tasks:** A system is represented as an activity with two gears in the upper-left corner.

System tasks are selected if an automated system or service completes an activity. One example is a payment of an expense. When the expense is approved, you might want a system to go through steps to process and automatically pay the employee. If you drag an activity from the palette to the system lane, you automatically get a system task activity.

Process modeling guidelines in IBM Web Process Designer

- A process diagram or model is called a process in IBM Web Process Designer
- In general, a process should be as simple an abstraction as you can make it
 - A highly conceptual process is resilient to change
- Make sure that you use the Documentation area in the Properties tab for each element in IBM Web Process Designer to include important requirement notes

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Figure 4-20. Process modeling guidelines in IBM Web Process Designer

When modeling in IBM Web Process Designer, remember the guidelines that are shown in the slide.

The next sections describe some of the core elements and explain how IBM Web Process Designer uses them to create the initial process model.



Example process: Expense reimbursement

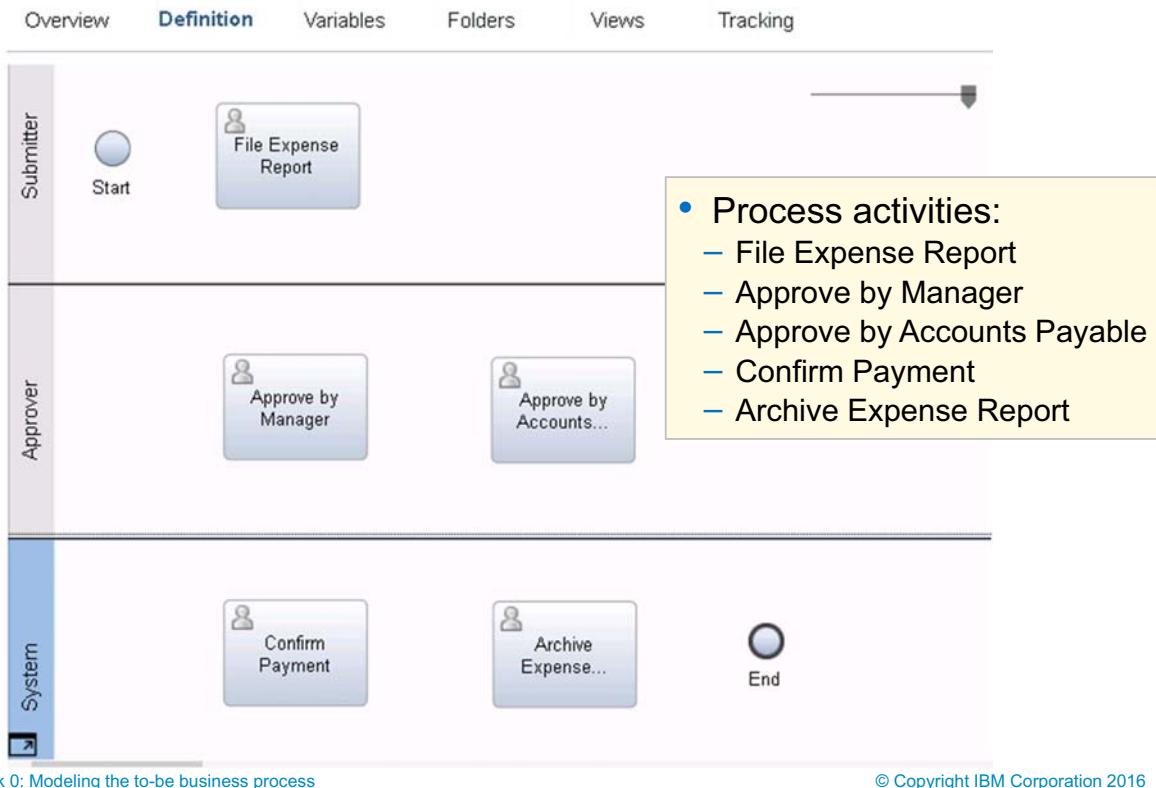


Figure 4-21. Example process: Expense reimbursement

Modeling task activities

Process documentation provides details on the teams in a business process and also the work they do. It is important to note that the information is primarily captured and in some instances, analyzed for value. However, more change can happen after it is represented in a process model. The information is also work-related and not necessarily conducive to process model needs until translated. It requires more comprehensive work from the process author to model process activities for teams correctly and to create a process model that is not too complicated to communicate the business process effectively.

An important guideline is that in general, it is a good practice to create a process that is as simple an abstraction as can be modeled. A highly conceptual process is resilient to change.

To create the simple abstraction process model, authors go through a series of changes to the activities. When the initial process model with these refined activities and process flow is in place, BPM analysts continue to analyze the process with the process owner for process improvements and appropriate automation opportunities. Finally, a stable process model can be implemented.

What is important to remember is that a good process model typically has an activity that represents a single task, which a single process team accomplishes. The next section covers a nested process and how an activity can also represent multiple activities or tasks effectively in a process model.

Translating business process work steps into activities

Example business process work steps:

- **Expense reimbursement**
 1. Enter expenses
 2. Scan receipts and attach
 3. Submit for review and approval
 4. Manager approval
 5. Resubmit if rejected
 6. Accounts payable approval
 7. Resubmit if rejected
 8. Submit for payment
 9. Confirm receipt of payment
 10. Transfer records to archive

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Figure 4-22. Translating business process work steps into activities

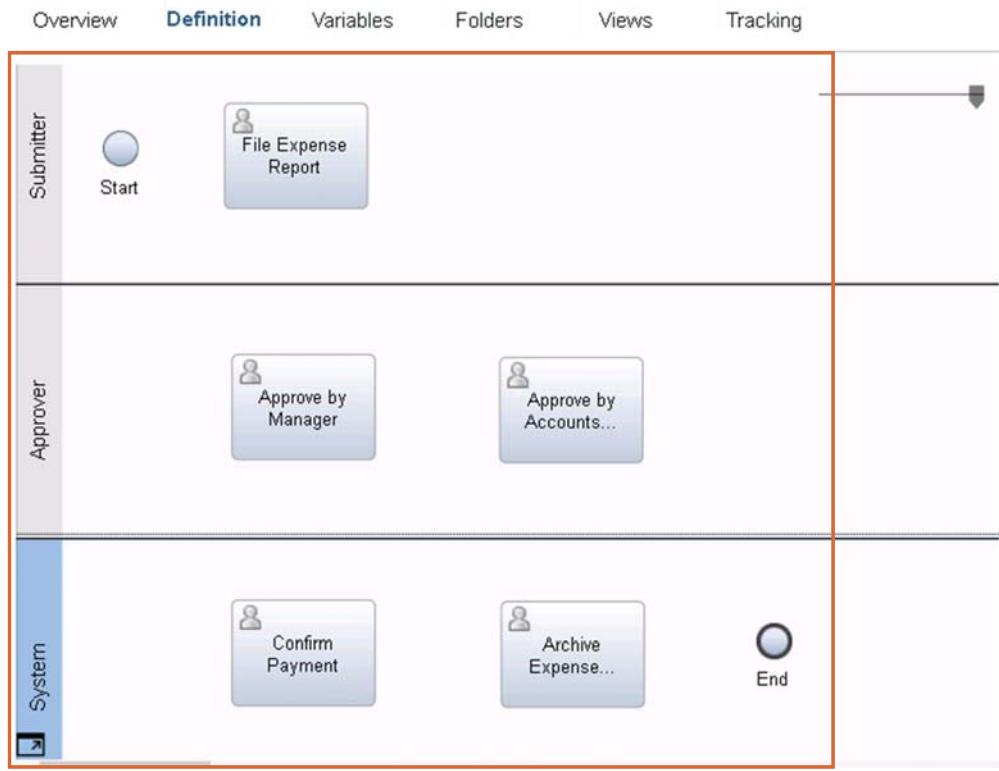
Capturing the process information does not necessarily mean that the work steps captured are filtered into logical units of work. That depends on the depth of work that captures and documents the data. The better the process discovery, the more easily the work steps get translated into the process model activities. Some of the steps must be conducted together to enable the complete unit of work to be completed.

This slide shows an example of work steps that are captured for the expense reimbursement process.



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How was this translation accomplished?



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Figure 4-23. How was this translation accomplished?

Revisit the initial process model with the activities from the work steps. Can you tell how the translation was done?

Remember, the process has the activities File Expense Report, Approve by Manager, Approve by Accounts Payable, Confirm Payment, and Archive Expense Report.

Translation of business process work steps into activities

	Expense Reimbursement (example business process)	Activity
1.	Enter expenses	File expense report (participant: Submitter)
2.	Scan receipts and attach	
3.	Submit for review and approval	
4.	Manager approval	Approve by manager (participant: Approver)
5.	Resubmit if rejected	
6.	Accounts payable approval	Approve by accounts payable (participant: Approver)
7.	Resubmit if rejected	
8.	Submit for payment	Confirm payment (participant: System)
9.	Confirm receipt of payment	
10.	Transfer records to archive	Archive expense report (participant: System)

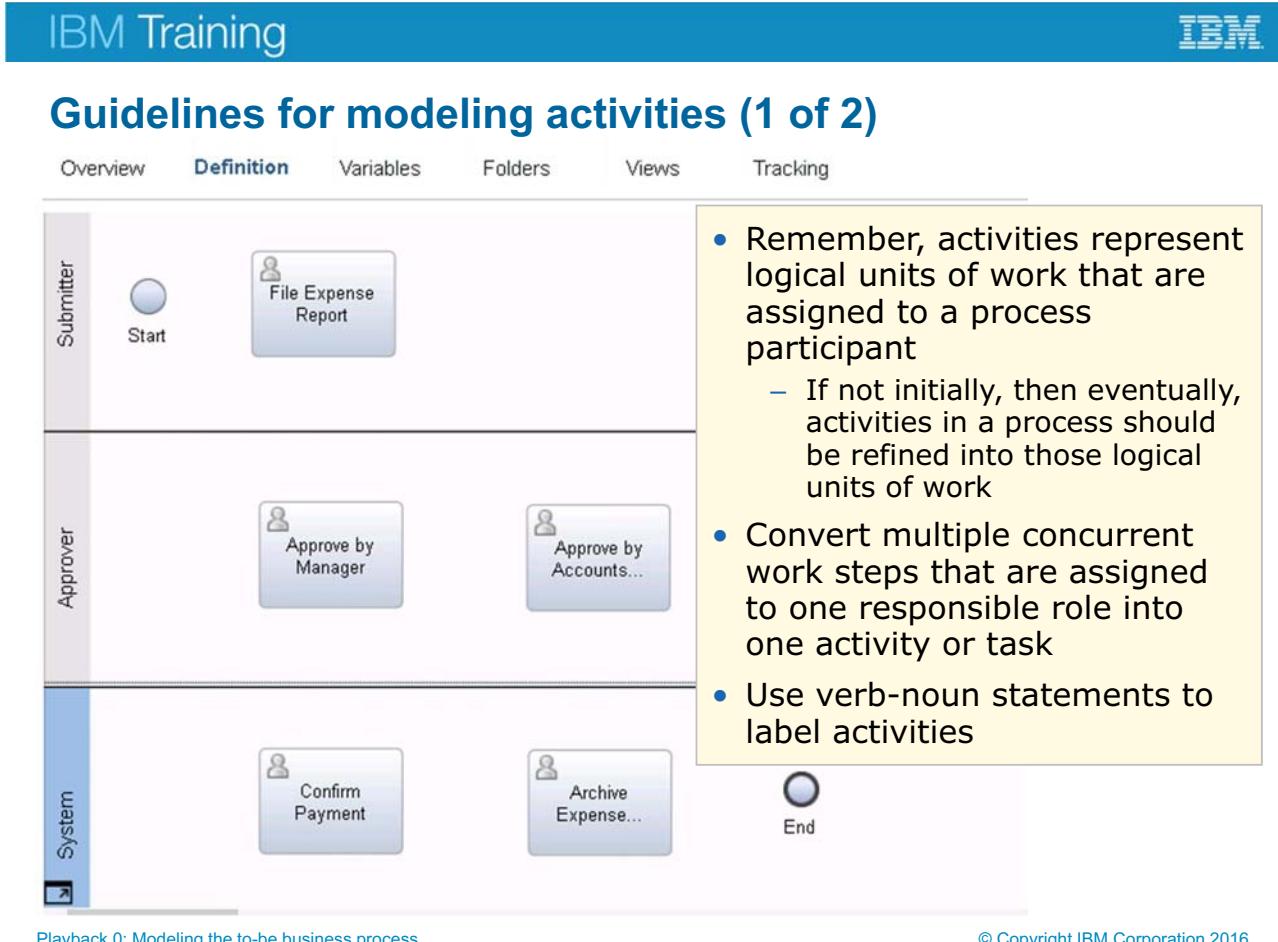
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Figure 4-24. Translation of business process work steps into activities

The expense reimbursement process shows how different tasks are changed into work units and modeled as activities. Each activity represents a single task that a process participant accomplishes from start to end. The identification of the activity involves the identification of the individual units of work that are being conducted.

Some of the steps must be conducted together to enable the complete unit of work to be completed. For example, the submitter completes all the steps, such as Enter Expenses, Scan Receipts and attach, and Submit for review and approval, to file an expense report.



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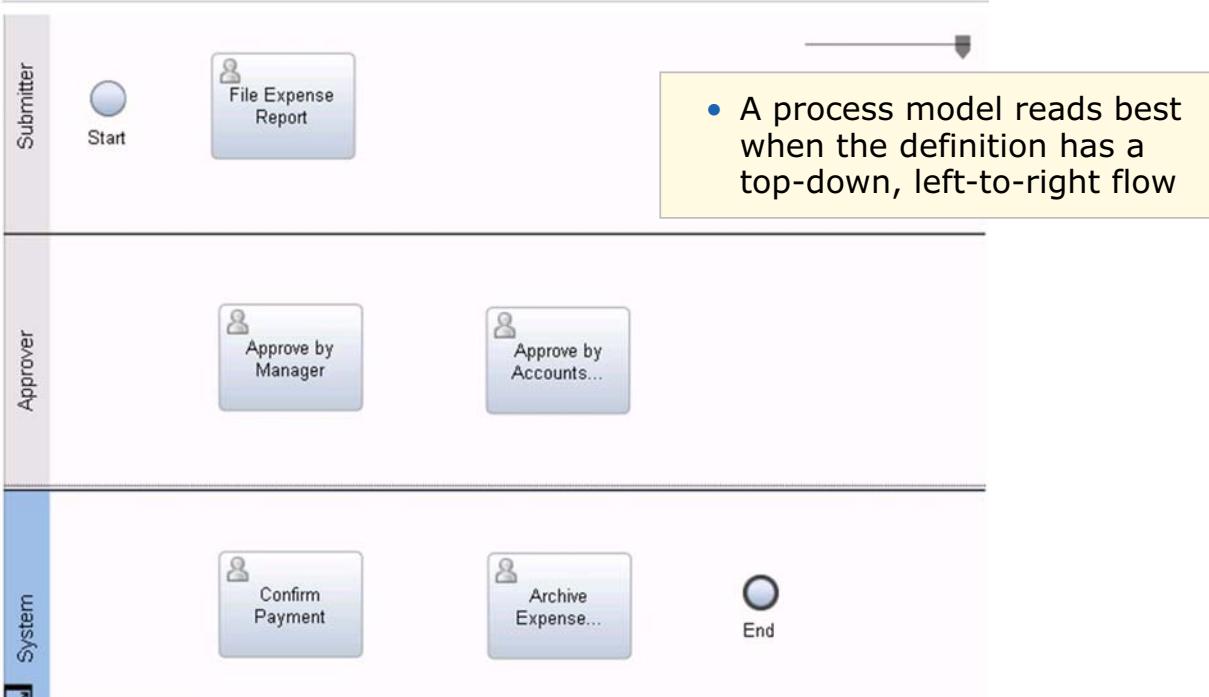
Figure 4-25. Guidelines for modeling activities (1 of 2)

When modeling activities in IBM Web Process Designer, follow these guidelines that are shown on the slide.

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Guidelines for modeling activities (2 of 2)

Overview **Definition** Variables Folders Views Tracking



- A process model reads best when the definition has a top-down, left-to-right flow

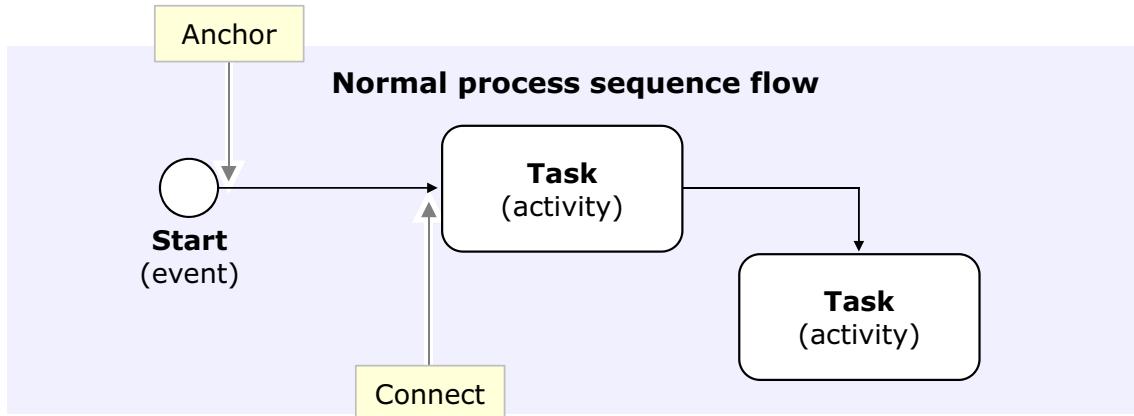
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Figure 4-26. Guidelines for modeling activities (2 of 2)

When modeling activities in IBM Web Process Designer, follow these guidelines that are shown on the slide.

Connecting flow objects



- Hover over the flow object to see a flow that emerges out from the control point on the edge of the flow object
- Then, drag the sequence flow to the next flow object and release on the target anchor point
- Using the rule of thumb of top-down, left-to-right flow, connect flow objects from left to right or bottom to top on the flow objects
- This action helps keep the process model simple and the flow lines from crossing

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Figure 4-27. Connecting flow objects

Now that the flow objects are added to the process model, it is necessary to provide the basic control and flow for these activities. The connection between flow objects represents the control or flow in all of the team and system lanes.

This type of diagramming provides communication of how the process flows from one activity to another and who does those activities. The method to accomplish this step in IBM Web Process Designer is as follows:

- Hover over the flow object to see a flow that emerges out from the control point on the edge of the flow object
- Then, drag the flow to the next flow object and release on the target anchor point.
- Using the rule of thumb of top-down, left-to-right flow, connect flow objects from left to right or from top to bottom on the objects. This rule helps with the simplicity of the process model and helps keep flow lines from crossing.

Because it is the early stage of process model, it is necessary to communicate only the expected flow of the process from the start event to one activity, to another, and to the end event. As the process model is analyzed and adjusted, the process flow is modified to express the nuances of alternative flow.

In the next unit, you learn the alternative process flow more comprehensively.

4.3. Nested process

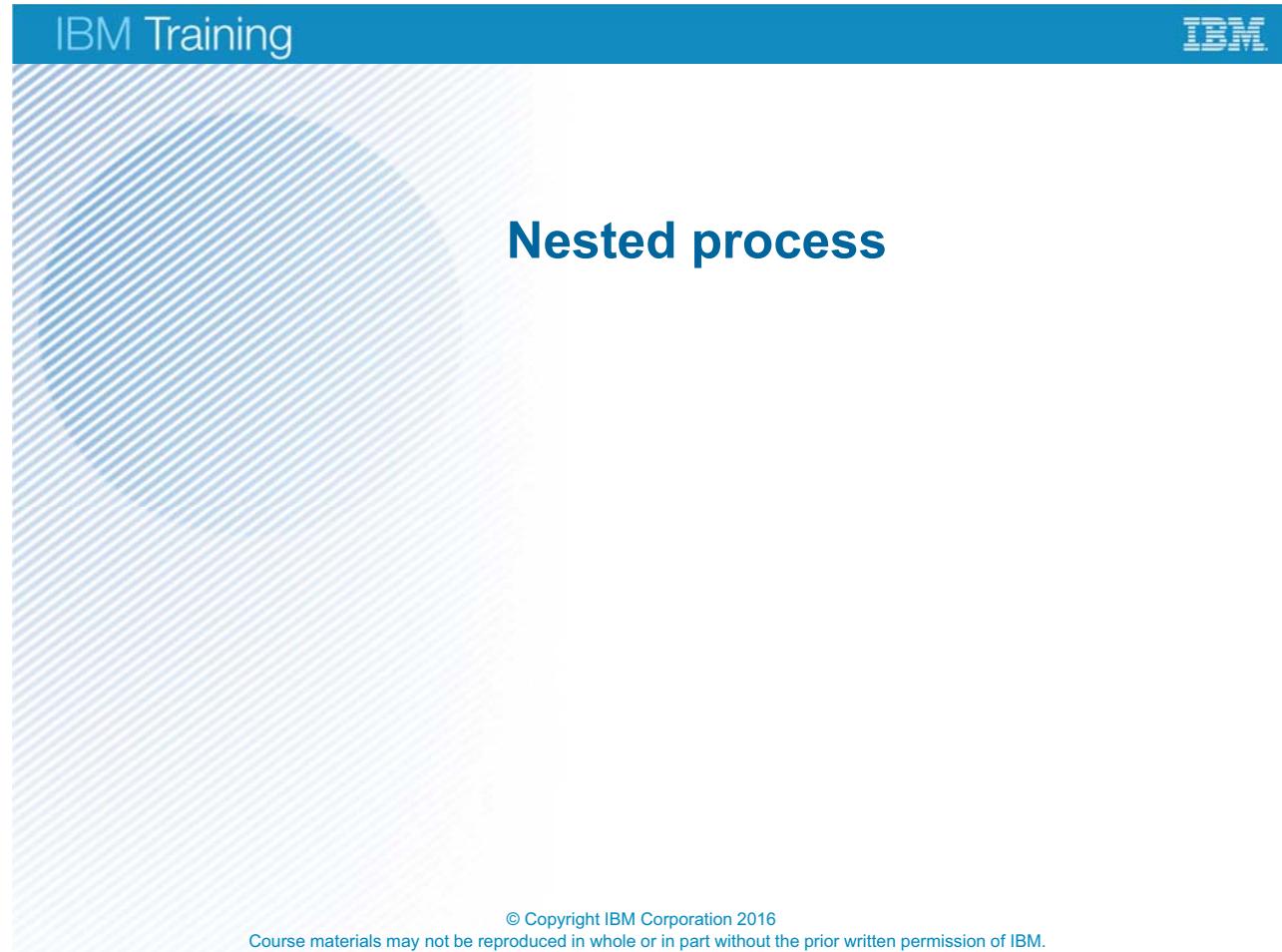


Figure 4-28. Nested process

The last category of activities that is used in IBM Web Process Designer is the nested process category.

Activities that are gleaned from process documentation are not always going to be tasks that effectively communicate the business process in a simple manner. To judge communication simplicity and effectiveness of the process model, many users use the following guideline:

Clearly and easily communicate processes in 5 minutes or less at any level of granularity.

Activity: Nested process



The BPMN element representation of an activity that is a nested process is a rectangle with rounded corners and a (+) plus sign in a square at the center

- Decomposition helps provide details for a business process with a series of processes that are connected at a high level to child definitions (nested processes)
- Activities are decomposed into nested processes until single tasks are represented

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Figure 4-29. Activity: Nested process

Decomposition

To achieve a level of effective communication of the process model, authors use decomposition to judge whether they are at simple abstractions of the model with single logical units of work for activities. Decomposition is basically showing details for a business process with a series of process model definitions that are connected at high level to child definitions.

In essence, a flow object activity is also used as a container of a child definition, which in turn can have activities that also contain child definitions. When the activities within the child definition represent logical units for work or tasks for each activity, decomposition is no longer necessary.

Child definitions in process models are called nested processes.

Is decomposition always necessary for process modeling?

Decomposition is necessary only if the process model is too complex to communicate the details of the business process, and the activities do not necessarily equal logical units of work. It would not be necessary to decompose if the process documentation produced the information that led to a simplified process..

The screenshot shows the IBM BPM Studio interface. At the top, there's a navigation bar with tabs: Overview, Definition, Variables, Folders, Views, and Tracking. Below the navigation bar is a toolbar with a 'Manager' icon. The main workspace contains a yellow rounded rectangle activity labeled 'Approve ...'. To the left of the workspace is a vertical sidebar with sections: General, Implementation, Preconditions, Pre & Post, and Tracking. The 'General' tab is selected. In the 'Properties' tab, under the 'Activity Type' section, there's a dropdown menu labeled 'Type:' with options: Subprocess, User Task, System Task, Decision Task, Script, Subprocess, Linked Process, and Event Subprocess. The 'Subprocess' option is highlighted with a red box. A callout box on the right side of the interface contains the following bullet point:

- Three types of nested processes can be selected in the properties tab

At the bottom left of the interface, it says 'Playback 0: Modeling the to-be business process'. At the bottom right, it says '© Copyright IBM Corporation 2016'.

Figure 4-30. Activity: Nested process types (1 of 2)

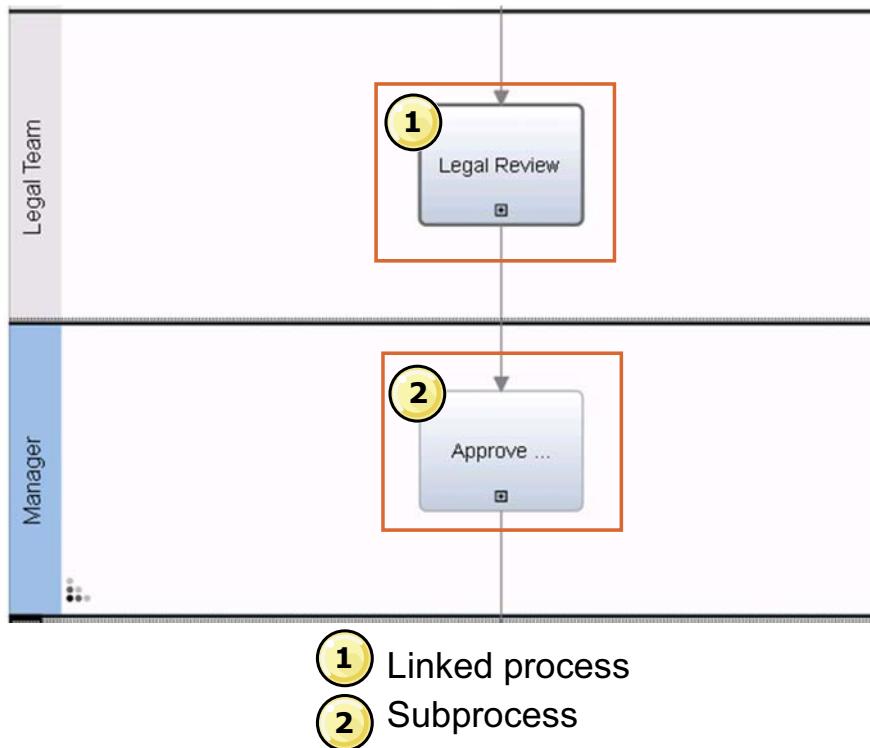
All nested process activities indicate their type in two different ways. They have a plus sign with a square symbol in the center to indicate that they are a nested process and not a task-type activity. Also, each type of nested process activity has a distinct activity outline to further designate its type.

The three types of nested process activities are subprocess, linked process, and event subprocess.

The first two, Subprocess and Linked process, are more common than the Event Subprocess, which is a specific case. You focus on the first two in this course.



Activity: Nested process types (2 of 2)



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Figure 4-31. Activity: Nested process types (2 of 2)

1. Linked process:

A linked process is an activity with a plus sign and square in the center, and a dark bold line encompasses the activity.

This type of process might be thought of more as separate from the original process than as a subprocess. Think of two processes that are linked when using this type of nested process. You can reuse this type of process in many different parent processes. An example might be a legal review that can be used in several different insurance claims processes. If your legal review is the same in an auto insurance claim and in a property insurance claim, you would want to choose a linked process for the legal review.

2. Subprocess:

A subprocess is an activity with a (+) plus sign and square in the center, and a normal single line encompasses the activity.

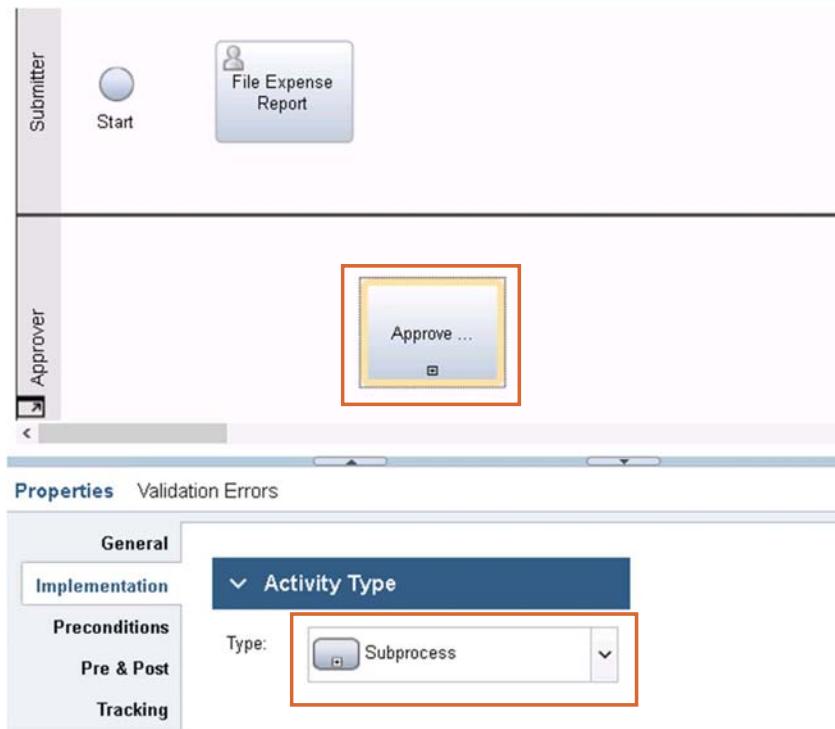
This type of nested process can be thought of as a subset of the original process. Sometimes, you might hear it called an embedded process. You cannot reuse this type of nested process, so think of reuse when choosing this type of nested process. If at any time the nested process might be reused in another process, then choose a linked process instead.

You can think of a subprocess as hiding several activities from view so you can achieve your goal of communicating your process in 5 minutes or less. Subprocesses also work well with the parent data model to pass along data values. Data and data models are explained in more detail in a later unit in this course that deals with implementation of the process model.



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Subprocess example (1 of 2)



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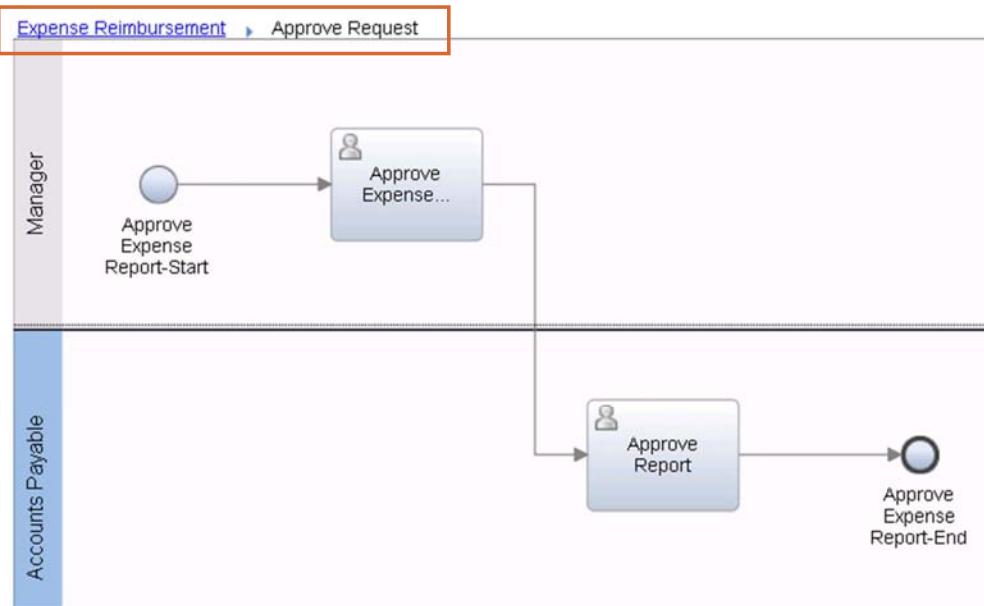
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Figure 4-32. Subprocess example (1 of 2)

Notice that instead of two approval tasks, there is now one nested process activity to represent the logical unit of work: Approve Expense Report.

After consulting with the business, it is determined that this process is unique and it is not reused. For this reason, it is a subprocess type of activity. After renaming the activity, select the activity and choose Subprocess from the Properties > Implementation > Activity Type section.

Subprocess example (2 of 2)



- A subprocess has breadcrumb navigation back to its parent process
- The start, end, and activities in a subprocess must have unique names

Figure 4-33. Subprocess example (2 of 2)

When you double-click the activity, the subprocess shows. Then, create the model for the subprocess, copying the former activities. Notice there is a breadcrumb trail at the top so you can go back to the top-level process.

In the second process, the teams are narrowed down to two. Notice that the system lane does not exist in the nested process.

Demonstration

This demonstration covers the following topics:

- Creating a process
- Modeling teams
- Model task-type activities and events
- Nested processes and decomposition

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Figure 4-34. Demonstration

This demonstration is stored as the `demo2.mp4` file that is in the `C:\labfiles\demo` folder.

Create a process:

1. Open the appropriate process application in IBM Web Process Designer.
2. Hover over the **Processes** library heading and click **+**.
3. Select **Process** from the option.
4. Type the name and click **Finish**.

Modeling lanes:

1. Drag the lane icon from the element palette to add the necessary participant lanes to the two default lanes (participant and system) provided.
2. Click the lane and change the lane name on the properties tab to appropriately model the teams.

Model task-type activities and events:

1. Drag activities and place them in the participant lanes in the correct flow of the process.
2. Name the activities appropriately with a verb-noun naming convention.

3. Change the type of activity in the implementation section, if necessary.
4. Add any events to the participant lanes.
5. Connect the flow objects (events and activities) from top to bottom and from left to right.

Model and decompose a nested process:

1. Combine any initial workflow steps into process model tasks when necessary.
2. Decide whether you need a subprocess or a linked process.
3. Nest any business process definitions as needed.

Unit summary

- Describe the purpose and function of BlueWorks Live
- List and describe the core notation elements that are used in the web Process Designer
- Examine a defined workflow from detailed process requirements and identify the interrelated process activities and the roles that are responsible for completing them
- Decompose activities into processes and nested processes that contain process tasks
- Create a process, nested process tasks, and responsible roles

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Figure 4-35. Unit summary

Review questions

1. True or False?

Automation is the first order of business in process modeling.

2. True or False?

BPMN is a standard flow chart-based notation for defining business processes.

3. _____ represents a single task that a process participant accomplishes from start to end.

- A. Process
- B. Pool
- C. Activity
- D. Lane

4. _____ are control flow objects for a process model.

- A. Pools
- B. Lanes
- C. Events
- D. Task

Figure 4-36. Review questions

Write your answers here:

1.

2.

3.

Review answers

1. **False.** Merely automating a business process provides the opportunity to make a bad business process more efficiently bad.
2. **True.**
3. **C:** Activity
4. **C:** Events

The slide features a blue header bar with the text "IBM Training" on the left and the IBM logo on the right. The main content area has a light blue diagonal striped background. The title "Exercise: Playback 0: Creating a structured process" is centered in large, bold, dark blue font. At the bottom center, there is a small copyright notice: "© Copyright IBM Corporation 2016" followed by "Course materials may not be reproduced in whole or in part without the prior written permission of IBM."

Figure 4-38. *Exercise: Playback 0: Creating a structured process*

To accomplish the task of creating a process in IBM Web Process Designer, there must be a process application to contain the process. Using the Process Center, an author first creates a process application with all the appropriate information to enable creation of a process.

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 and the process for improvement. 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 complete it with a pool, lanes and flow objects such as activities, events, and nested processes. Take the information that is provided in Unit 1 on the outcome of the process discovery and initial analysis, and translate that into a process. Your first task is to create a business process definition and name it appropriately.

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 and the process for improvement. 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 complete process model, take the information that is provided in the exercise scenario and translate that into a process. In this activity, your task is to model and name the teams.

In this exercise, 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 learn about gateways and alternative flow in the next unit.

Complete decomposition on your process and create subprocesses or linked processes where you see opportunities for them.

Exercise objectives

After completing this exercise, you should be able to:

- Create a nested process
- Create the foundation for a process by adding the appropriate lanes to the default pool
- Translate business process workflow steps that are documented in the process discovery and analysis into process model tasks
- 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 subprocess or a linked process

Unit 5. Playback 0: Controlling process flow

Estimated time

01:30

Overview

This unit covers the modeling of process flow, sequence flow, tokens, gateways, and intermediate events.

How you will check your progress

- Checkpoint questions and lab exercises

References

Unit objectives

- Describe process sequence flow and the runtime use of process tokens
- List and describe gateways as they are used in the web 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 the web Process Designer
- Model a business process escalation path with an attached timer intermediate event

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Figure 5-1. Unit objectives

Topics

- About process flow
- About tokens
- About gateways
- Intermediate events

Playback 0: Controlling process flow

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Figure 5-2. Topics

Key concepts in this unit

- **Process flow:** Encompasses both the normal, expected process path to completion, and alternative process paths that might occur with different process conditions or business rules
- **Tokens:** Describe how the process flows when the process is run
- **Gateways:** Used to control the flow of a process
 - Split, join, exclusive, inclusive, and parallel
- **Intermediate events:** An event that takes place between a start and an end event in the process
 - Sequence flow intermediate events: Message, content, timer, and tracking
 - Boundary (attached) intermediate events: Error, message, content, and timer

5.1. About process flow

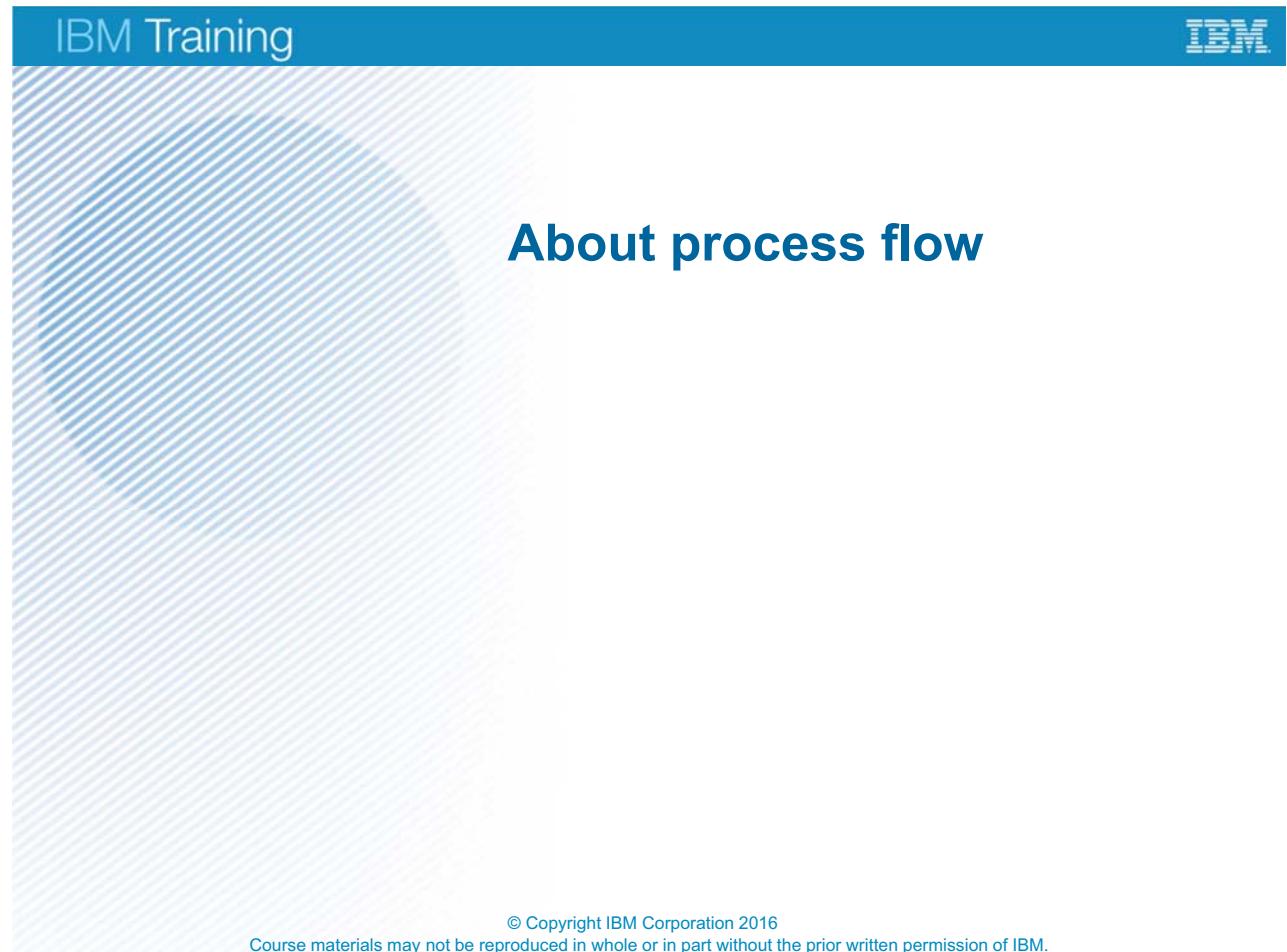


Figure 5-4. About process flow

Comprehensive process models have one thing in common: they communicate process flow well. Process flow encompasses both the normal, expected process path to completion, and alternative process paths that might occur with different process conditions or business rules. To understand how to communicate both kinds of process flows in the process model, it is important to understand what types of sequence flow exist in process modeling and how to implement gateways.

Normal sequence flow



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Figure 5-5. Normal sequence flow

What is sequence flow?

Sequence flow is considered to be part of a category of connecting objects. These objects connect each element on the diagram to indicate the order in which elements are conducted.

Normal sequence flow:

The simplest example of sequence flow is the connection of two flow objects. A plain arrow represents a normal sequence flow. It is the type of flow that was used when you connected elements in the last unit.

With normal sequence flow, the business process progresses to the next step in the process as soon as the first step is completed.

Conditional sequence flow



- BPMN standards use a small diamond with an arrow to represent the conditional sequence flow
- IBM Process Designer does **not** show a small diamond with an arrow for the conditional sequence flow
 - It looks the same as a normal sequence flow in the process

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Figure 5-6. Conditional sequence flow

Conditional sequence flow is associated with gateways. Conditional expressions are evaluated to determine which path the flow is going to take. The difference between normal and conditional sequence flows is that conditional flows are not automatically followed; the condition must be met first.

The number of conditional flows that are followed is determined according to the type of element that is used and the requirements of the instance that is being processed.

An arrow with a diamond at the start of the arrow represents a conditional sequence flow.

Default sequence flow



- A plain arrow with a backslash at the beginning of the flow line
- A default sequence flow is required and is automatically created when there is a conditional sequence flow
- The default sequence flow indicates a processing path to follow when none of the conditions on the conditional sequence flows are true
- The default sequence flow ensures that there is at least one processing path (the default path) for the business process to follow

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Figure 5-7. Default sequence flow

When using conditional sequence flow in IBM Process Designer, a default flow is required. The default flow indicates a processing path to follow when none of the conditions on the conditional flows are true. It allows at least one path of processing (the default path) for the business process to follow.

This type of sequence flow has a slash added to the beginning of the flow line. You notice when you draw sequence flows to and from certain elements that the slash immediately shows.

5.2. About tokens

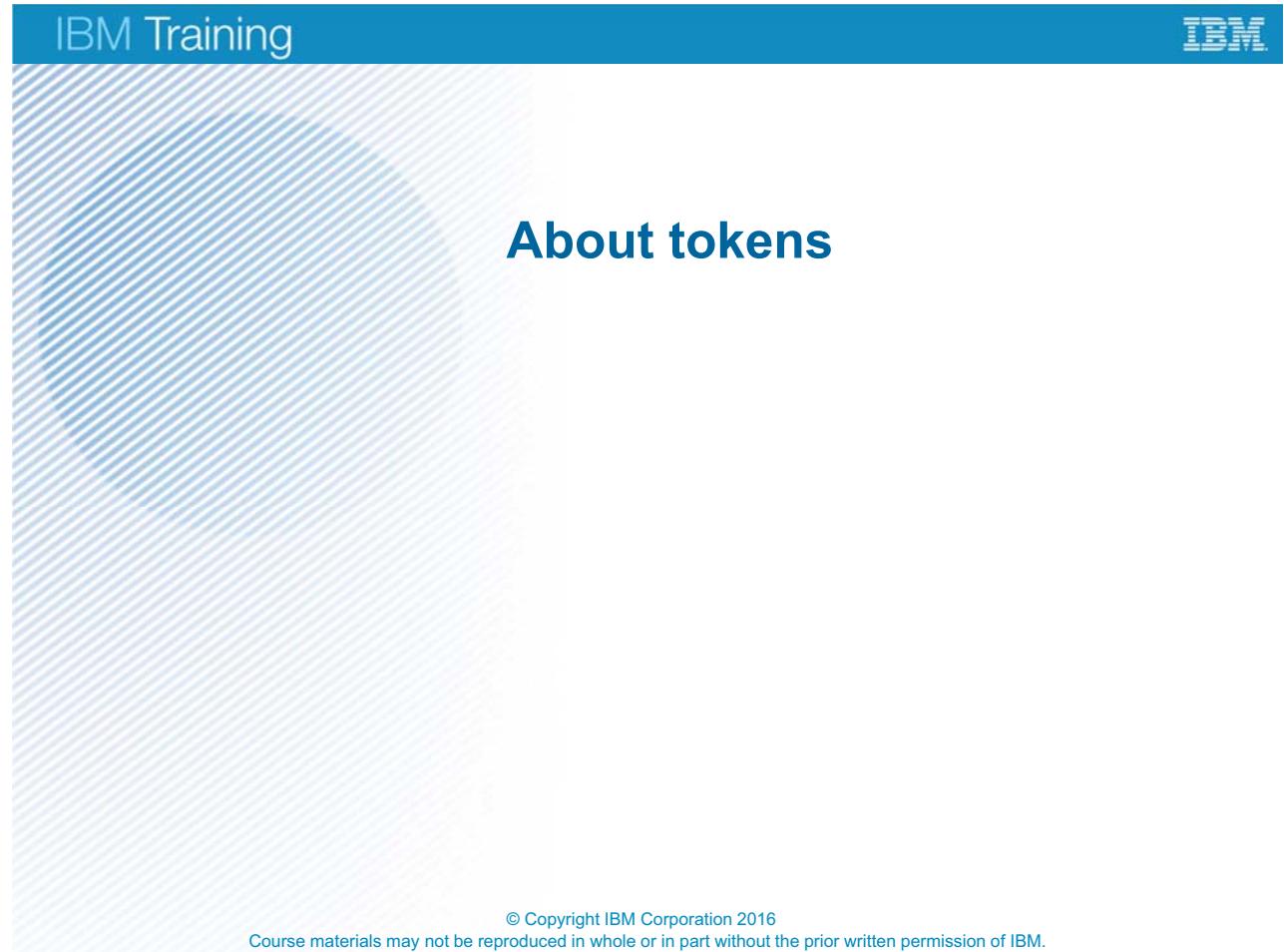
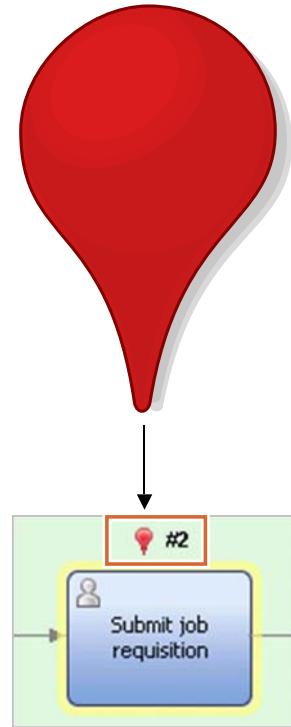


Figure 5-8. About tokens

Tokens are used to describe how the process flows when the process is run.

The indication of a token on a step identifies the location of active processing steps of that business process.

What is a token?



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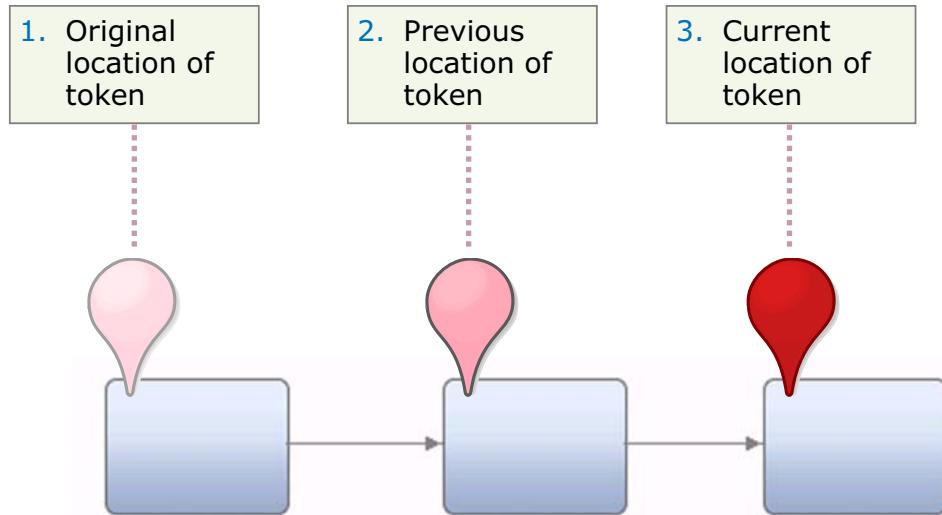
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Figure 5-9. What is a token?

A token is used in two ways:

- To display to developers, designers, and business the task it is completing.
- To help in understanding the flow through a business process, which is based on the type of gateway that is chosen at the design stage, and different use case scenarios. Tokens can help to determine whether the correct gateway is selected based on the business requirements.

Traverses the flow objects

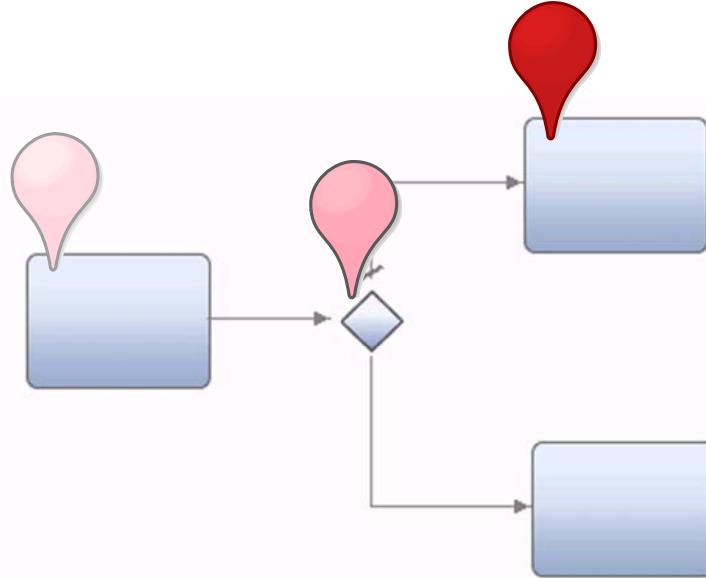


Note: The different shades of the token that you see in this course are for class illustration purpose, and only the current location of the token displays in the process in the tool

Figure 5-10. Traverses the flow objects

Here is an example of serial processing along with the explanation for the placement of the token. As each step is completed, a token identifies the next step that is required until the path of processing reaches an end event. In this case, the third step is active, which shows the red token on that step. The two previous steps are completed in order, and the lighter colored tokens are emphasizing that fact.

Diverted through alternative paths



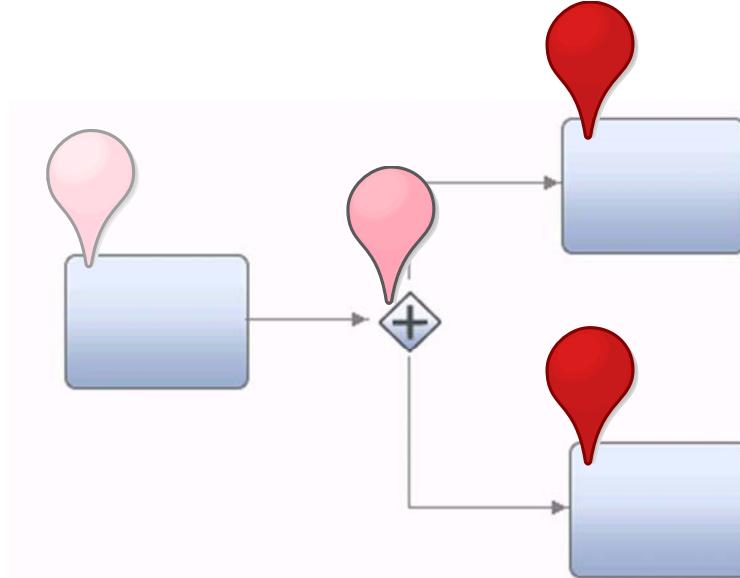
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Figure 5-11. Diverted through alternative paths

Tokens can help in the understanding and identification of a particular path of processing that an instance takes. In this slide, you see that by tracking how the token gets diverted through alternative paths, the sequence flow that the use case requires is definable.

Split into parallel paths



- A parallel gateway is used here, and is covered later in this unit

Figure 5-12. Split into parallel paths

In many situations, more than one step within a business process can be active. The token allows the identification of all active steps of a business process. Each active step within the business process is highlighted or shown with a token. Here you can see that after the token passed through the gateway, the business conditions required that two steps of the business process must be run concurrently.

5.3. About gateways

About gateways

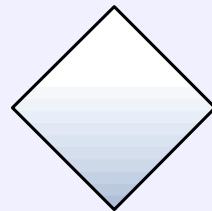
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Figure 5-13. About gateways

Often, a gateway is used to control the flow of a process.

Represented as a diamond



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Figure 5-14. Represented as a diamond

A gateway is represented as a diamond.

Can be thought of as a question

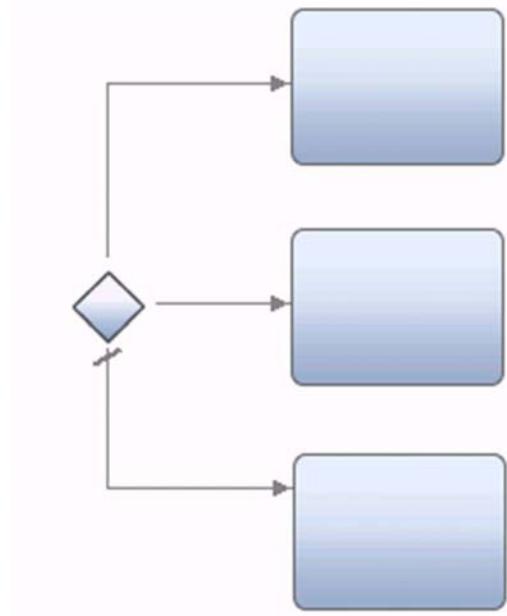


Is loan approved

Figure 5-15. Can be thought of as a question

Often, a gateway is representative of a question that is asked at a particular point in a process. When we label the gateway, we automatically assume that the label is a question, so the question mark at the end of the question is implied.

Has a defined set of alternative answers



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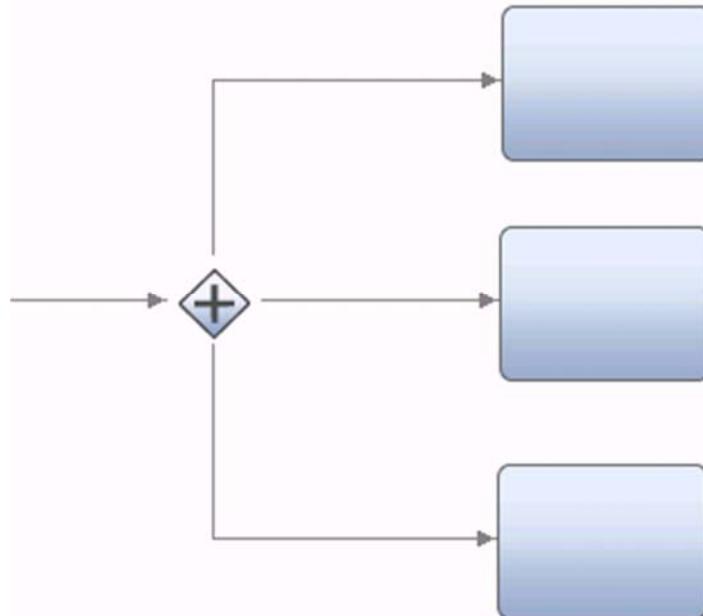
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Figure 5-16. Has a defined set of alternative answers

The question has a defined set of alternative answers. All of the answers can be thought of as gates that are keeping the process from continuing until a valid answer is provided for the question.

Gateways control the divergence and convergence of sequence lines, determining branching and merging of the paths that a process can take.

Two distinct modes: Split



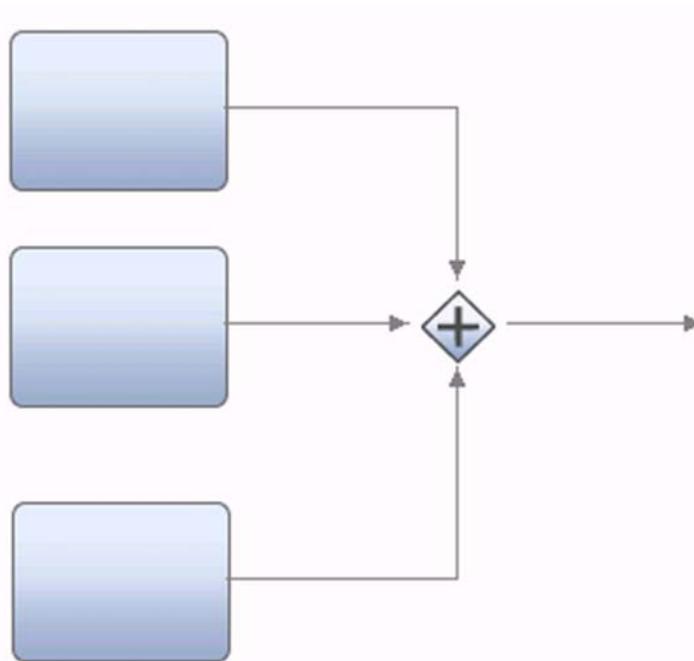
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Figure 5-17. Two distinct modes: Split

Typically, gateways have two distinct modes. One mode is that a gateway can split an incoming path into multiple outgoing paths. It is known as a split.

Two distinct modes: Join



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Figure 5-18. Two distinct modes: Join

The second mode for a gateway is that it can merge multiple incoming paths into one outgoing path. It is known as a join.

In IBM Process Designer, an exclusive gateway is not used to join multiple tokens. Inclusive and parallel gateways allow for joins to be used.

Using gateway splits and joins:

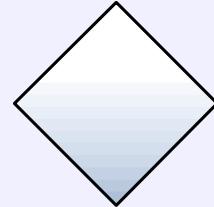
Gateway splits allow for activities to occur at the same time.

In some situations, there are times when some actions must not proceed until a set of previous activities are completed. An example of this gateway is a summary task of the results of previous actions.

When this example happens, you need an accompanying join to make the process work in a simple, sensible manner. It also makes the process diagram easy to understand by various audiences.

A good rule to remember is that when modeling splits and joins, there is one token into the process and one token out of the process.

Exclusive: Diamond shape with no internal marker

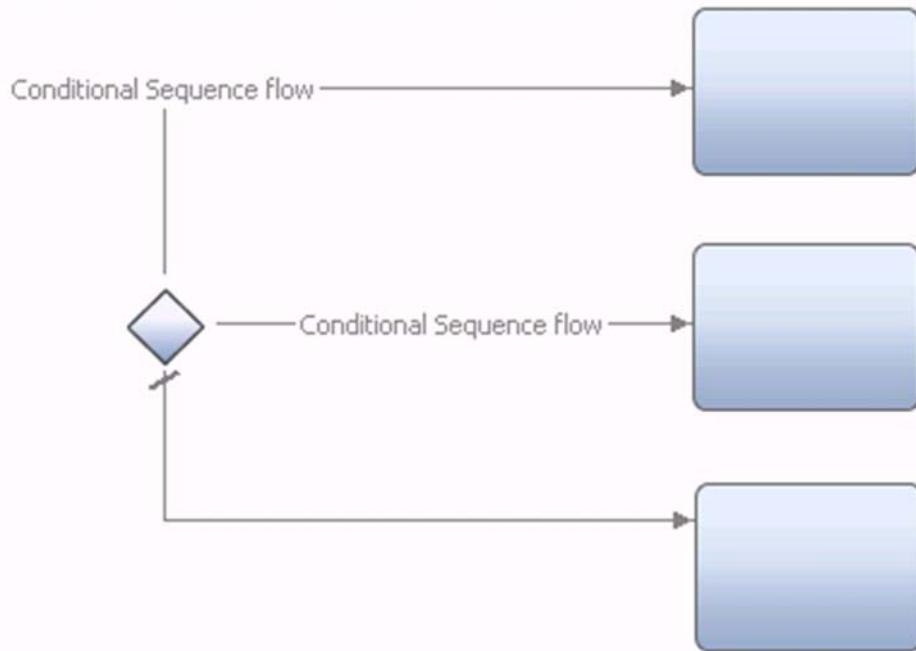


Exclusive gateway

Figure 5-19. Exclusive: Diamond shape with no internal marker

The first type of gateway you examine is the exclusive gateway. This gateway is sometimes called a XOR gateway. If you want to send the process flow along only one of the available sequence flows, use an exclusive gateway.

Exclusive: One or more outgoing conditional sequence flows



Playback 0: Controlling process flow

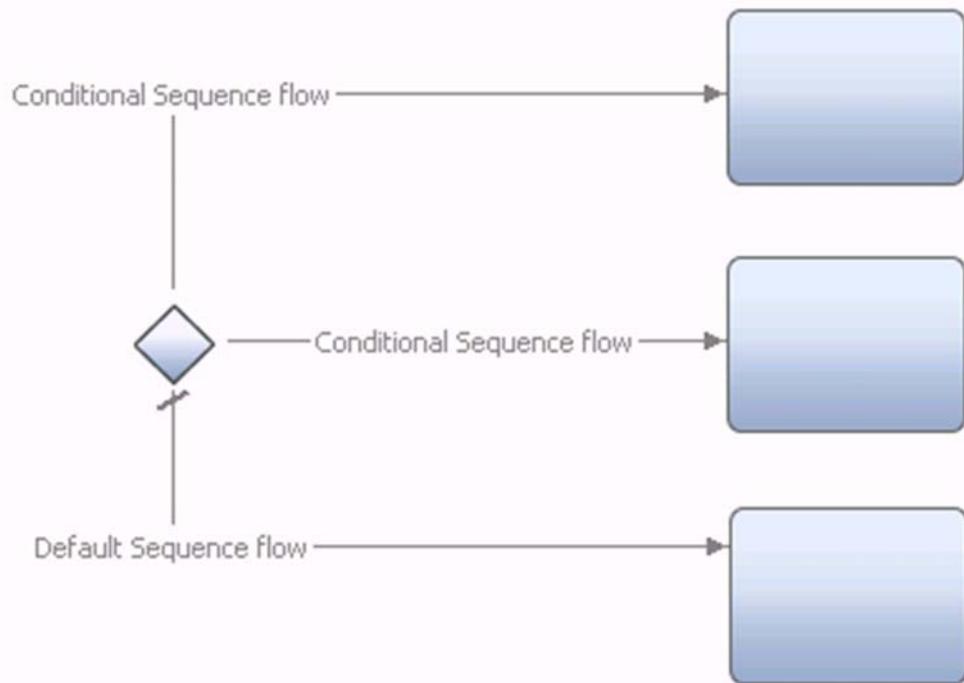
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Figure 5-20. Exclusive: One or more outgoing conditional sequence flows

Outgoing sequence flow conditions are evaluated from top to bottom as defined in the properties tab of the gateway.

- It is a good practice to model exclusive gateways so that only one outgoing sequence flow condition can be true.
- After a business process condition is met, that conditional sequence path is followed, and evaluation of subsequent outgoing sequence flow conditions stops.
- If no conditions are met, the default processing path is followed.

Exclusive: Default sequence flow



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Figure 5-21. Exclusive: Default sequence flow

Because this gateway uses conditional sequence flow, an outgoing default sequence flow (a line with no condition) must be modeled with exclusive gateways. It allows the process to proceed even if none of the conditions on the conditional processing paths evaluate to true.

Process narrative

Submit auto damage claim:

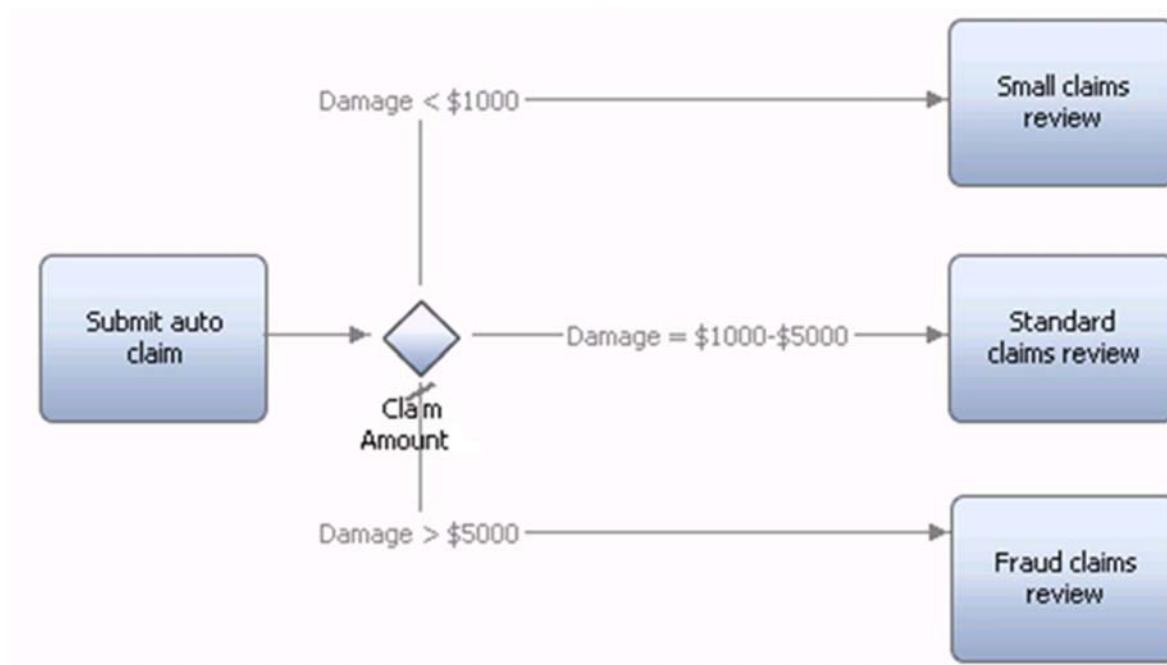
- If claim amount is less than \$1000, conduct a small claims review
- If claim amount is \$1000 to \$5000, conduct a standard claims review
- If claim amount is greater than \$5000, conduct a fraud claims review

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Figure 5-22. Process narrative

Submit auto claim example (1 of 6)



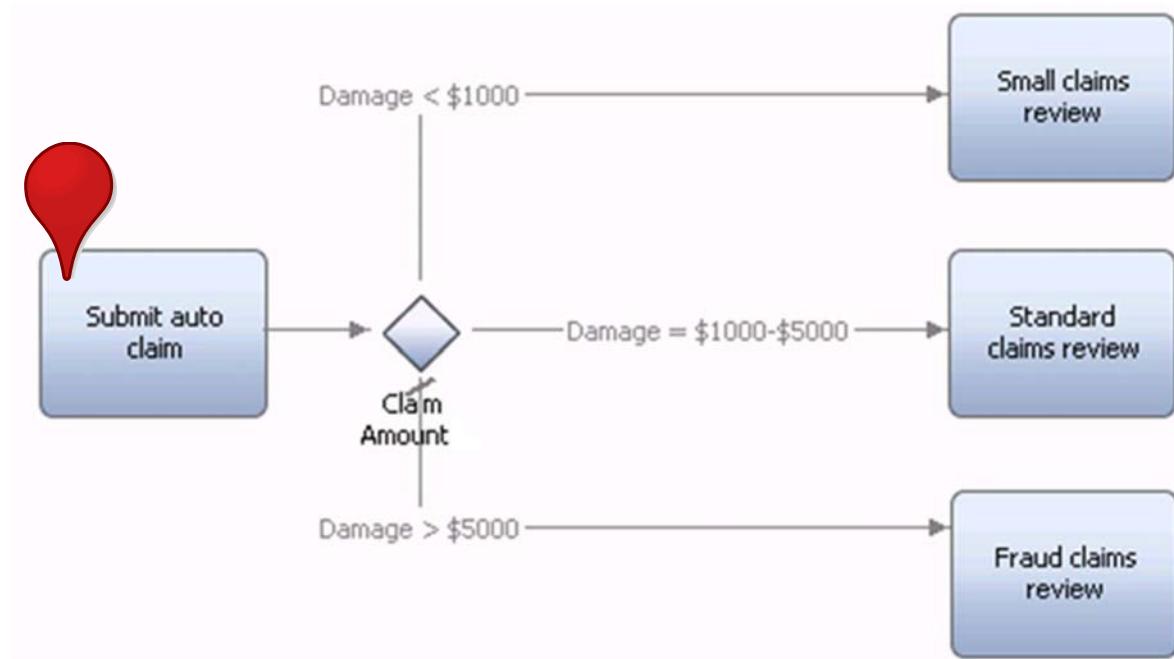
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Figure 5-23. Submit auto claim example (1 of 6)

This example has an exclusive gateway. The activity labels are not all verb-noun pairings. Sometimes there is not enough space for a full name. If it happens this way during your modeling, the key is to make sure that your labels communicate the process clearly.

Submit auto claim example (2 of 6)



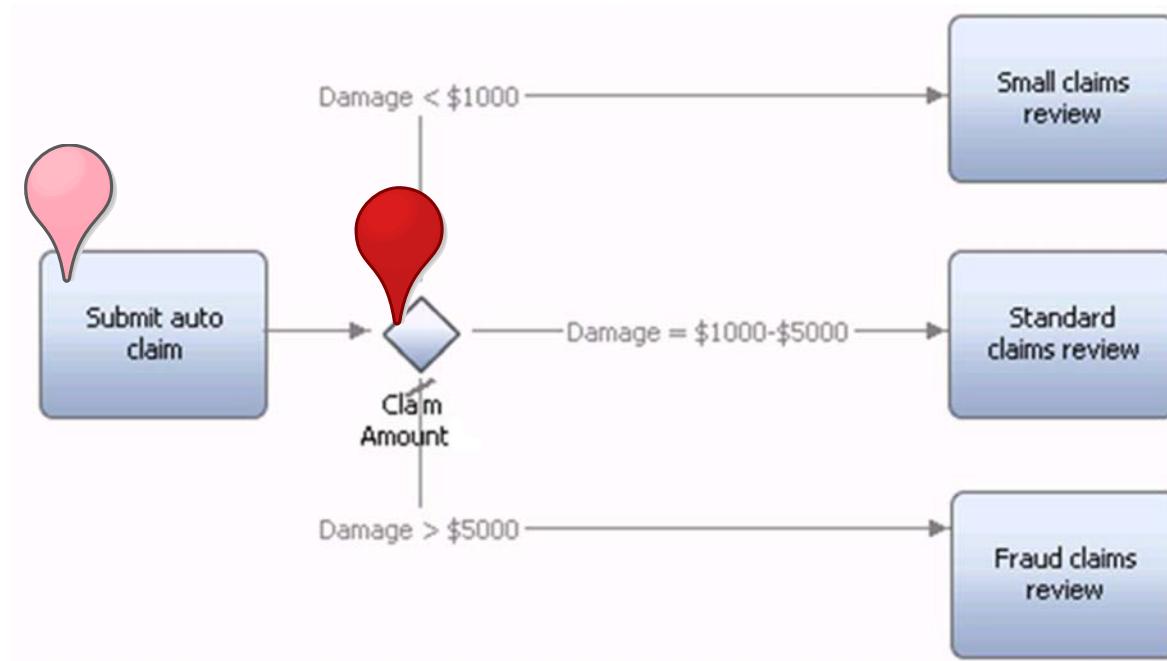
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Figure 5-24. Submit auto claim example (2 of 6)

Here is an example with tokens.

Submit auto claim example (3 of 6)



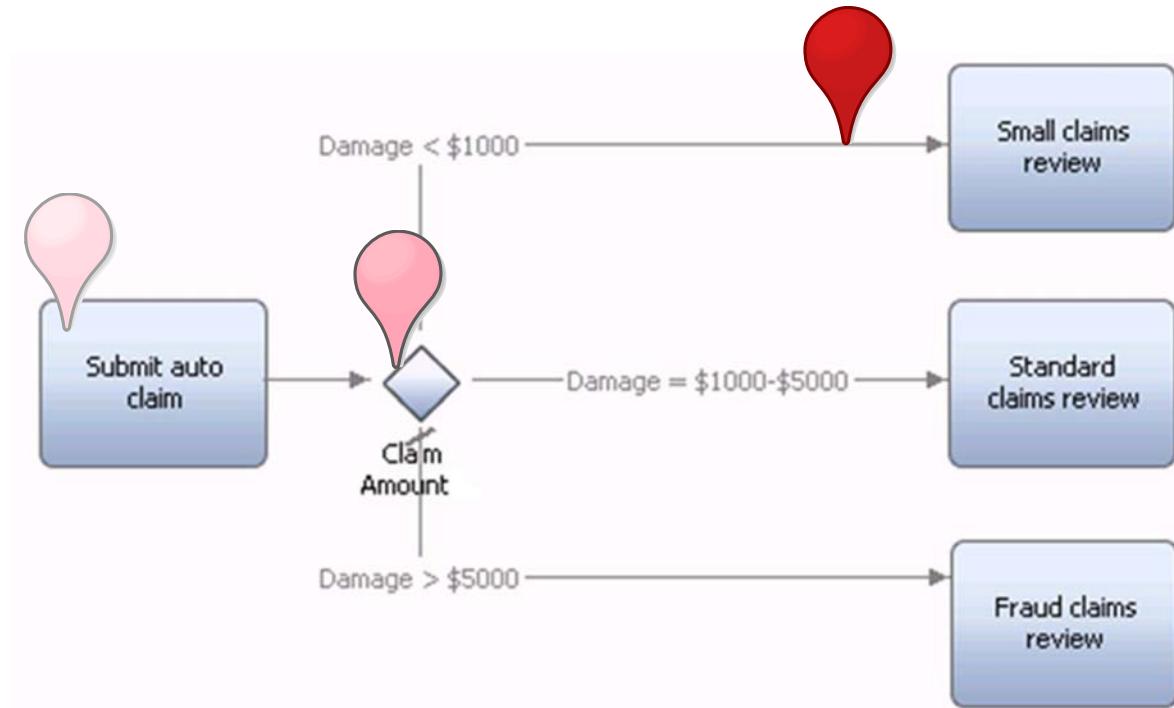
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Figure 5-25. Submit auto claim example (3 of 6)

The lighter tokens show where the token was. These lighter tokens are shown to further understanding and are not part of the software. The red token indicates where the token is. When the user submits the auto claim, the token flows to the decision gateway. The logic in the decision gateway examines the claim amount, and the token moves to the appropriate flow depending on the rules embedded in the gateway.

Submit auto claim example (4 of 6)



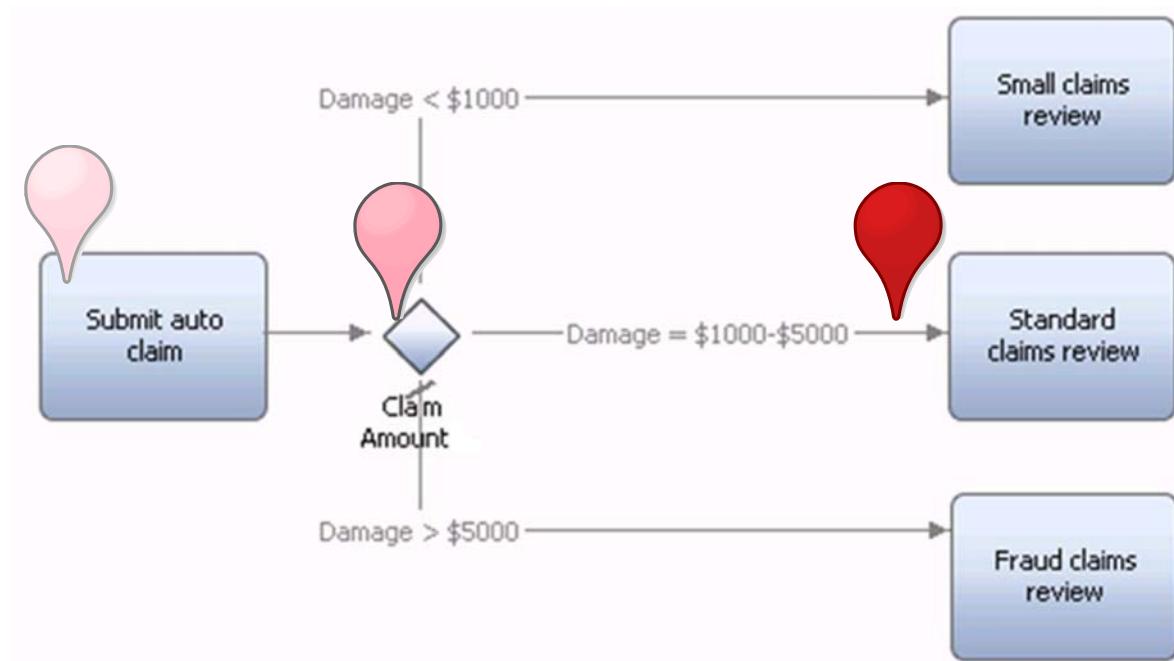
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Figure 5-26. Submit auto claim example (4 of 6)

This path is taken if the claim is under \$1000.

Submit auto claim example (5 of 6)



Playback 0: Controlling process flow

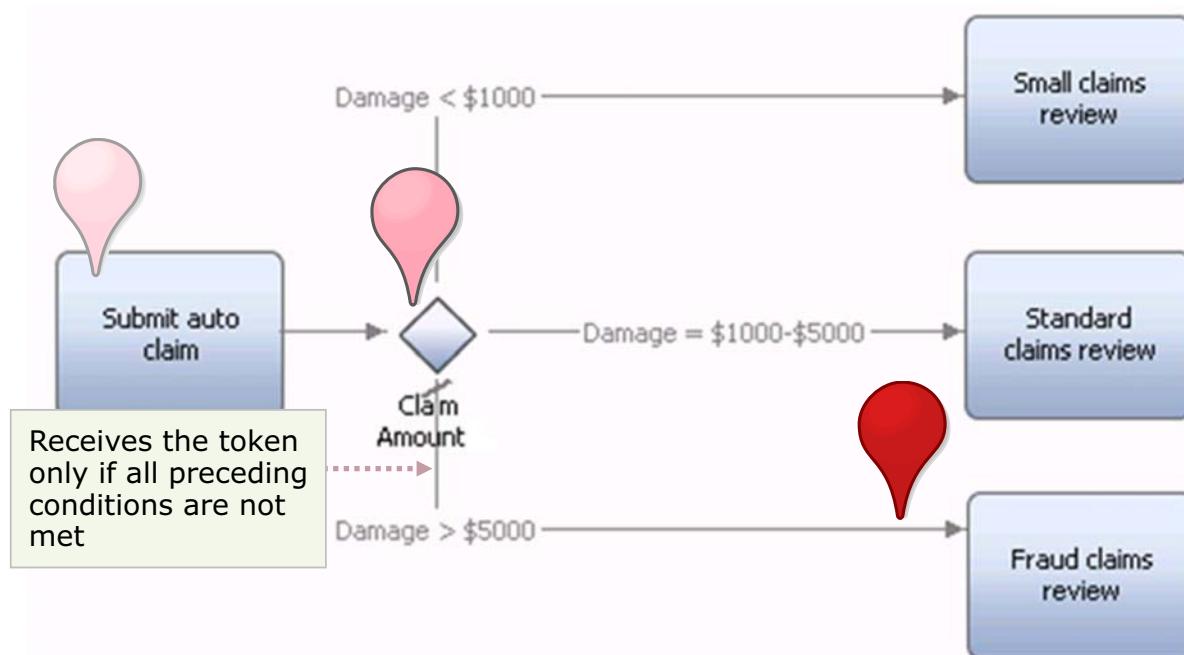
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Figure 5-27. Submit auto claim example (5 of 6)

This path is taken if the claim is between \$1000 and \$5000.



Submit auto claim example (6 of 6)



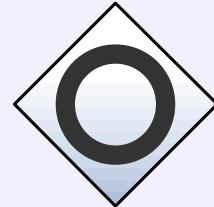
Playback 0: Controlling process flow

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Figure 5-28. Submit auto claim example (6 of 6)

The default sequence flow is taken if the rest of the conditions are not met. Even though the flow is labeled as Damage > \$5000, the gateway only evaluates the top two conditions. When none of the conditions evaluate to true, the default sequence flow is followed.

Inclusive: Diamond shape with an internal circle

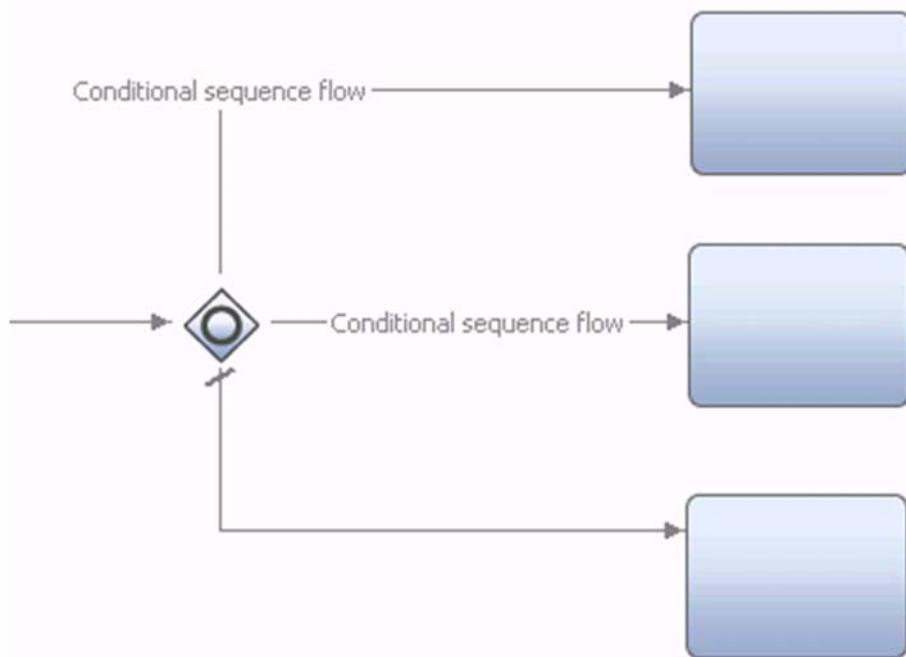


Inclusive
gateway

Figure 5-29. Inclusive: Diamond shape with an internal circle

The next type of gateway is the inclusive gateway. This gateway can be used as either a split or a join. To distinguish the usage, it is called the inclusive split gateway or inclusive join gateway.

Inclusive split: One or more outgoing conditional sequence flows



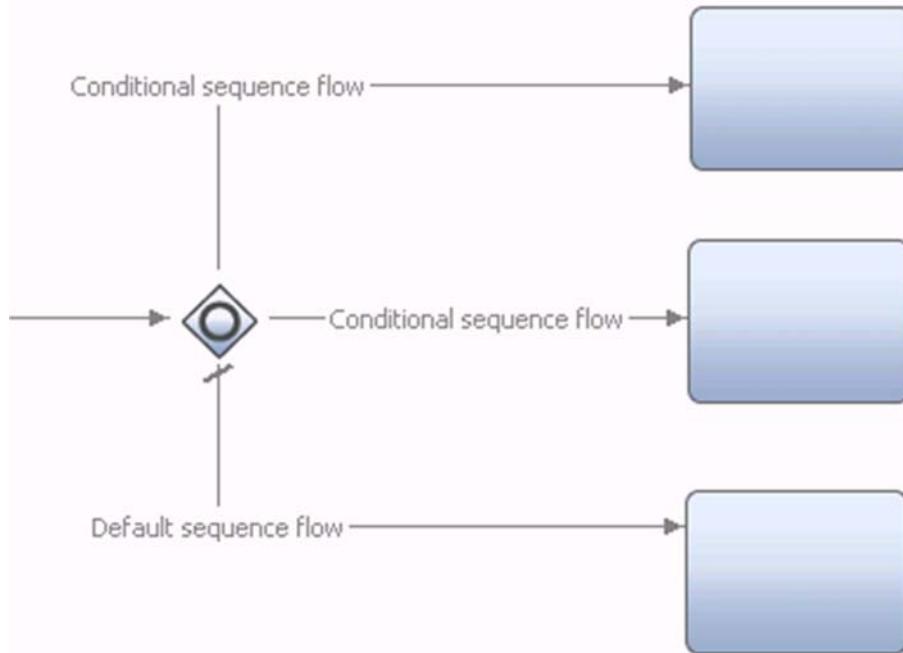
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Figure 5-30. Inclusive split: One or more outgoing conditional sequence flows

A gateway that is used to move process flow along one or more conditional sequence flows is called an inclusive split gateway. Each conditional sequence flow is evaluated in turn, and each one that evaluates to true is followed. This type of evaluation means that the inclusive split can cause parallel processing to occur within a business process.

Inclusive split: Default sequence flow



Playback 0: Controlling process flow

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Figure 5-31. Inclusive split: Default sequence flow

This type of gateway also uses conditional sequence flow so an outgoing default sequence flow (a line with no condition) must be modeled with conditional gateways. The default sequence flow is followed only if none of the preceding conditions are true.

While both exclusive gateways and inclusive splits evaluate conditions, they behave differently. The exclusive gateway allows a process to take only one of the available paths, while an inclusive split can allow it to take one or more conditional paths. The default sequence flow works the same in both gateways; the default sequence flow is followed only if **all** of the conditional sequence flows evaluate to false.

Inclusive join gateways:

The same inclusive gateway also has a join function. It can be used to bring together multiple processing paths and “join them together.” This gateway is useful when a previous gateway caused parallel processing paths to occur in the business process, and they are now required to be joined to be able to complete a common business activity.

The inclusive join has the following capabilities:

- Any number of incoming sequence flows can be modeled.
- The inclusive join is able to determine which of these sequence flows are live.

- After all live incoming sequence flows reach the inclusive join, the outgoing sequence flow is followed.
- The inclusive join is able to determine whether an incoming sequence flow is no longer live and no longer waits for it.

Process narrative

Building damage report process:

- When damage occurs to the building, the facilities manager must submit a damage report
- If fire damages the building, the fire department must be notified
- If the amount of damage is greater than \$5000, the insurance agent must be notified
- The building manager must always be notified

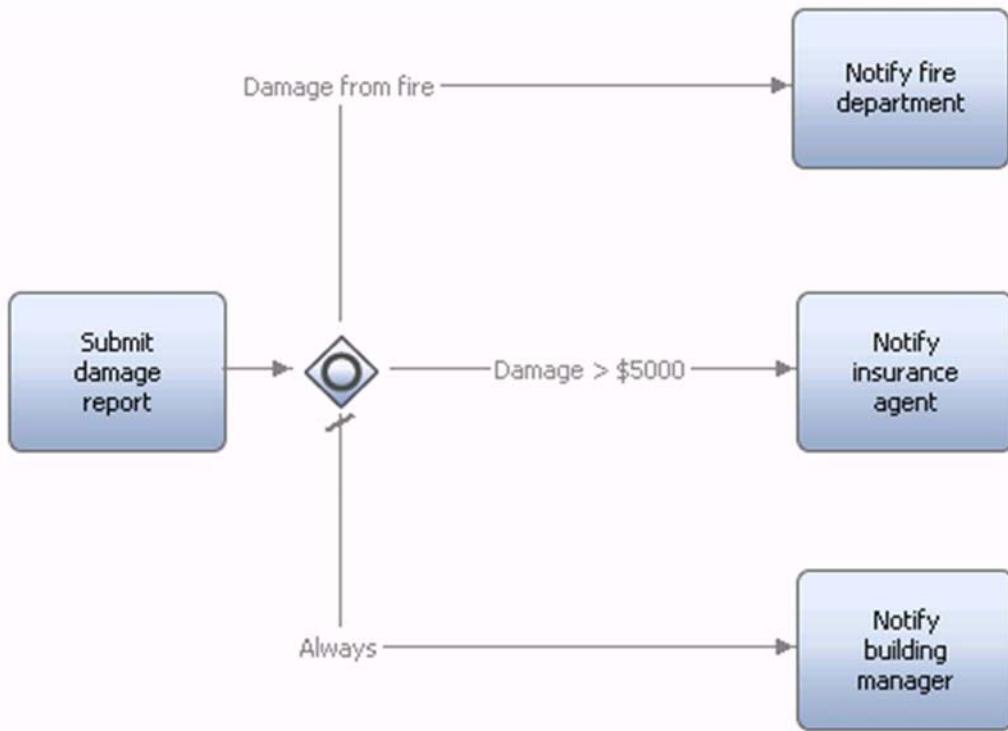
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Figure 5-32. Process narrative

You can try and model the narrative using BPMN.

Damage report example (1 of 8)



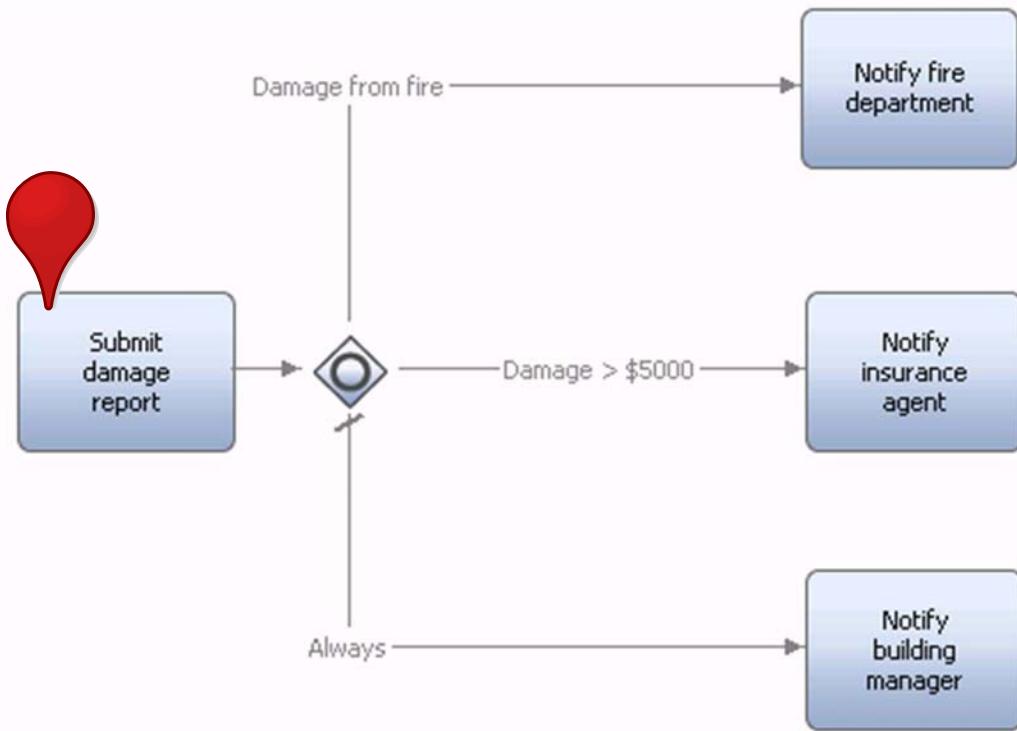
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Figure 5-33. Damage report example (1 of 8)

Consider this example of the model with the inclusive gateway.

Damage report example (2 of 8)



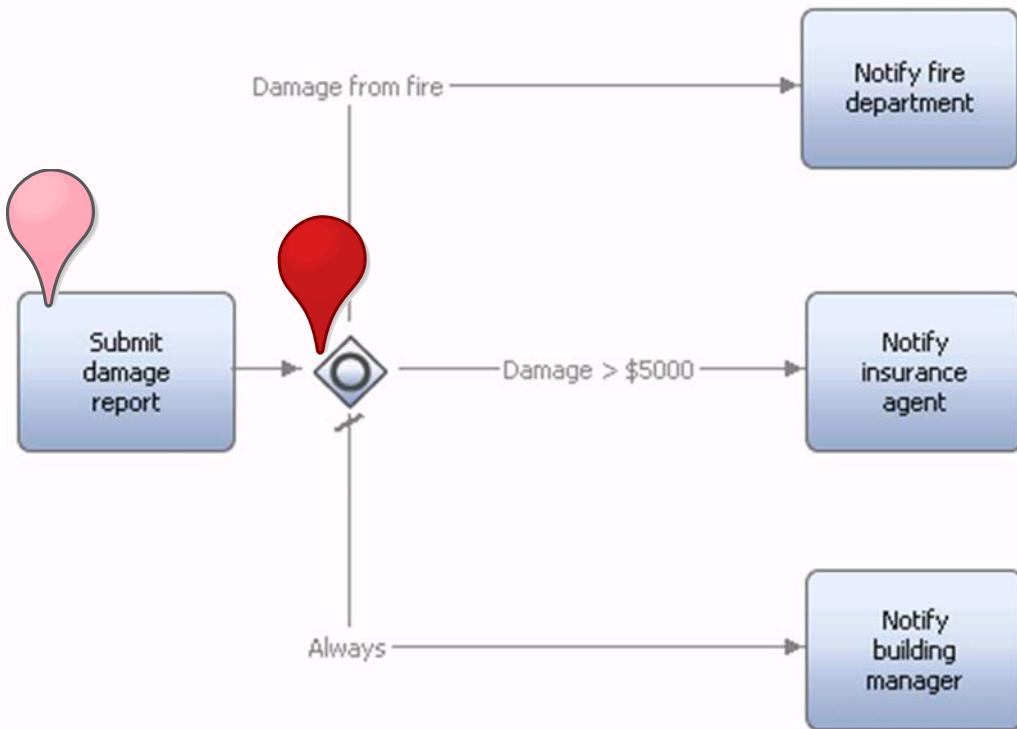
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Figure 5-34. Damage report example (2 of 8)

Follow the tokens.

Damage report example (3 of 8)



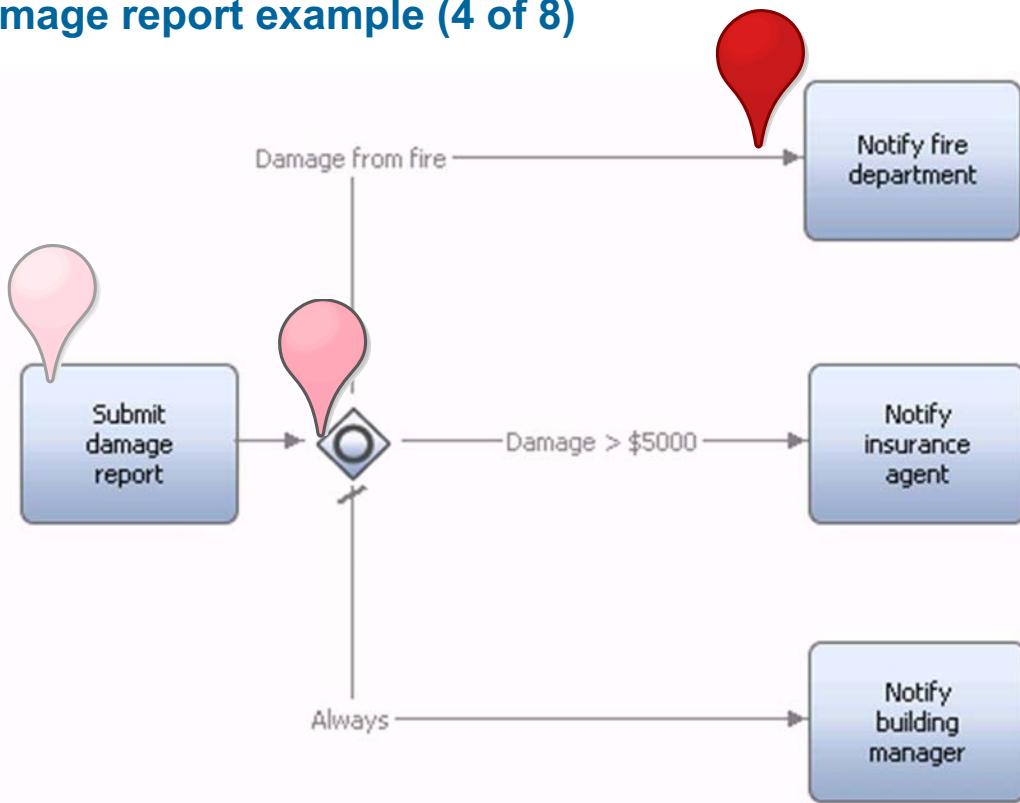
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Figure 5-35. Damage report example (3 of 8)

Now the token is at the gateway.

Damage report example (4 of 8)



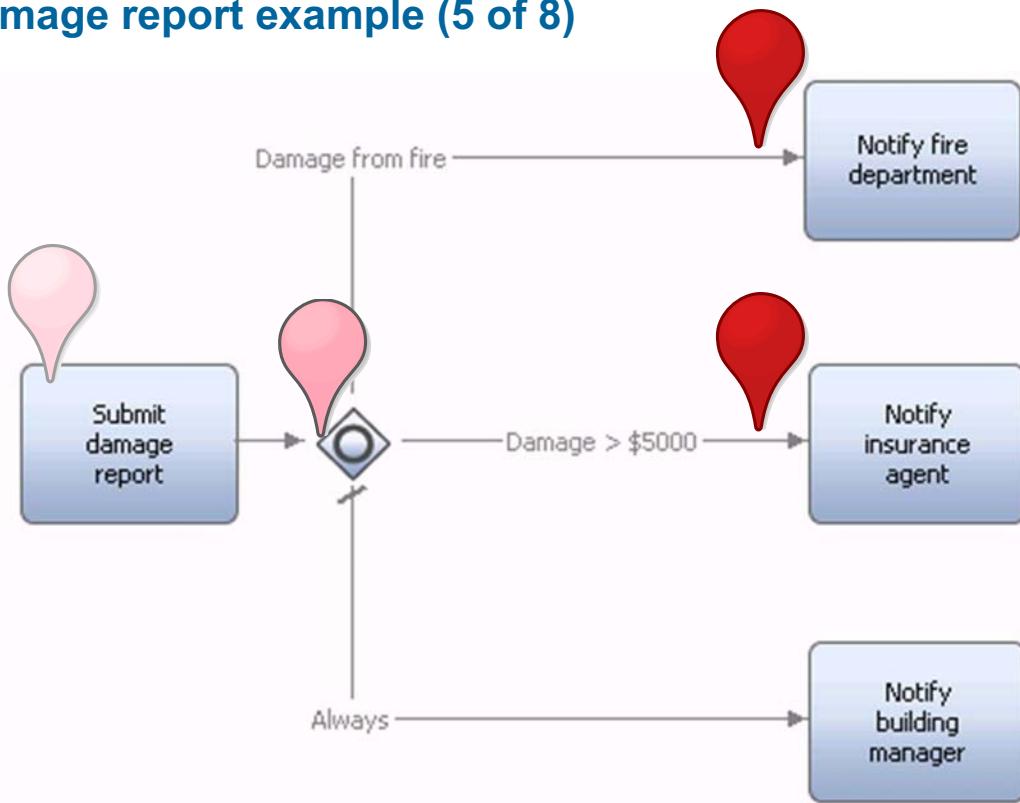
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Figure 5-36. Damage report example (4 of 8)

The token takes the path if the damage is from the fire only. In this case, the second condition is not met because the damage is under \$5000.

Damage report example (5 of 8)



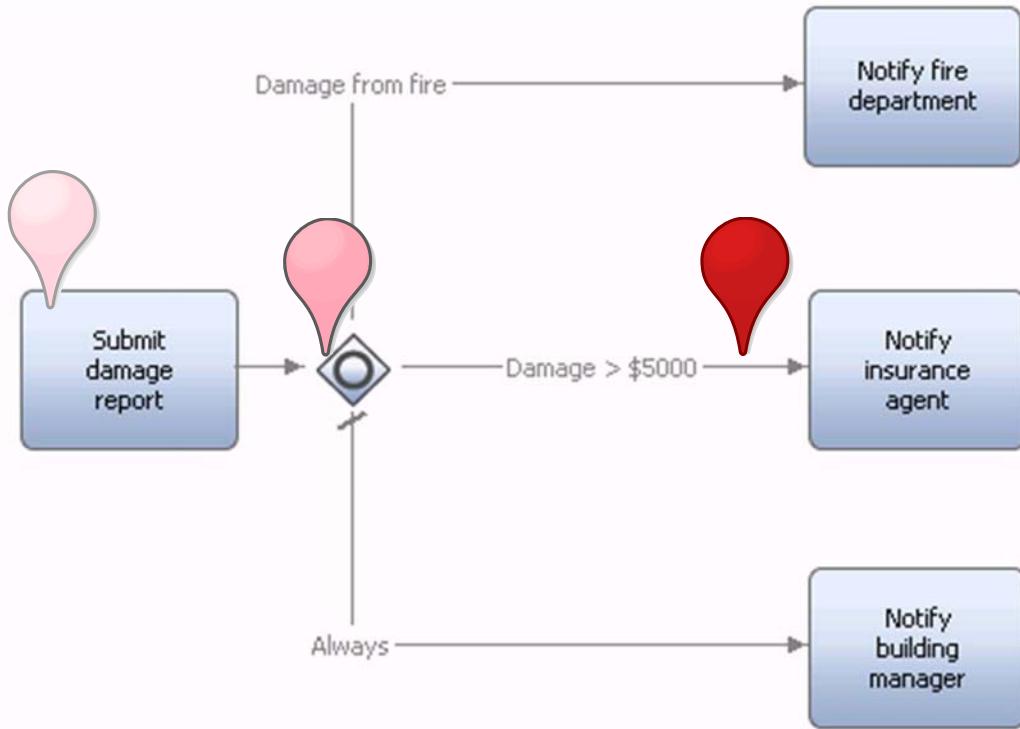
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Figure 5-37. Damage report example (5 of 8)

The token meets both conditions if the damage is from fire and the damage is over \$5000. In this case, the fire department and insurance agent are notified.

Damage report example (6 of 8)



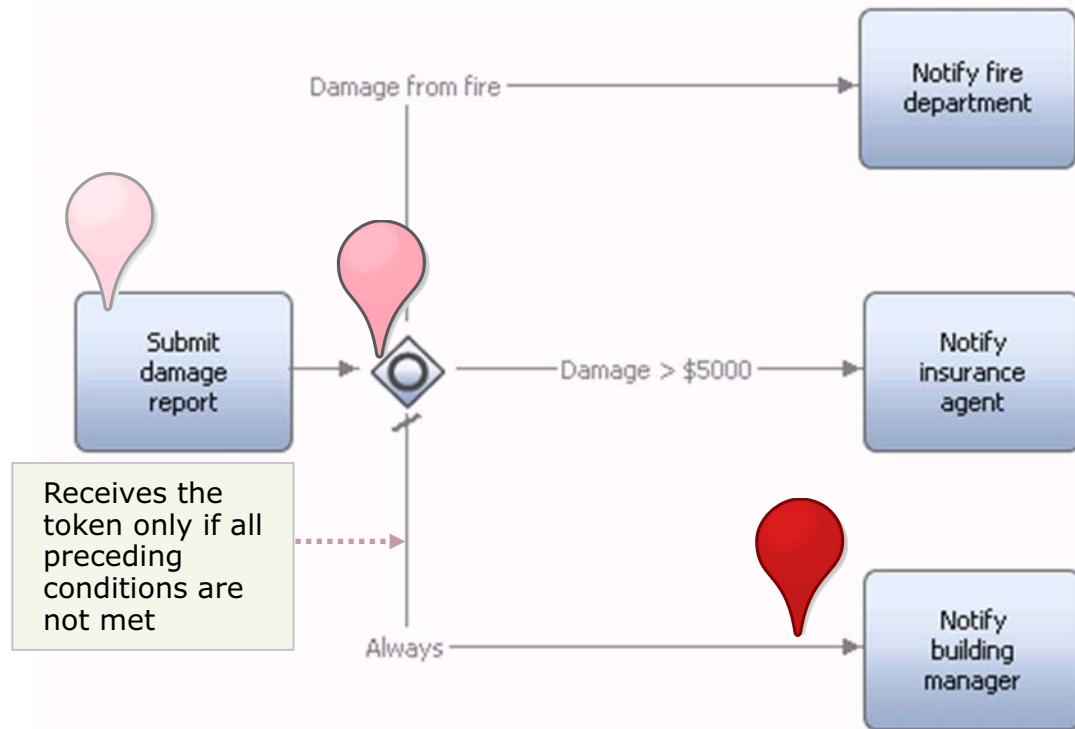
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Figure 5-38. Damage report example (6 of 8)

The token can also meet the condition of damage over \$5000 and be non-fire damage.

Damage report example (7 of 8)



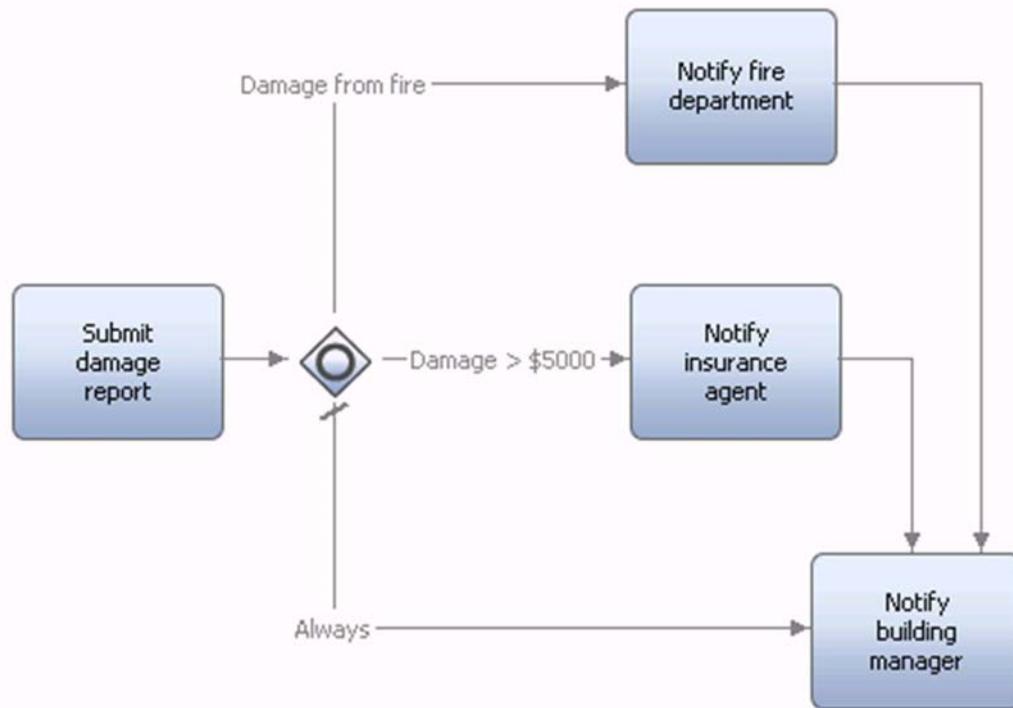
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Figure 5-39. Damage report example (7 of 8)

The token can also go through the default path as none of the other conditions are met.

Damage report example (8 of 8)



Playback 0: Controlling process flow

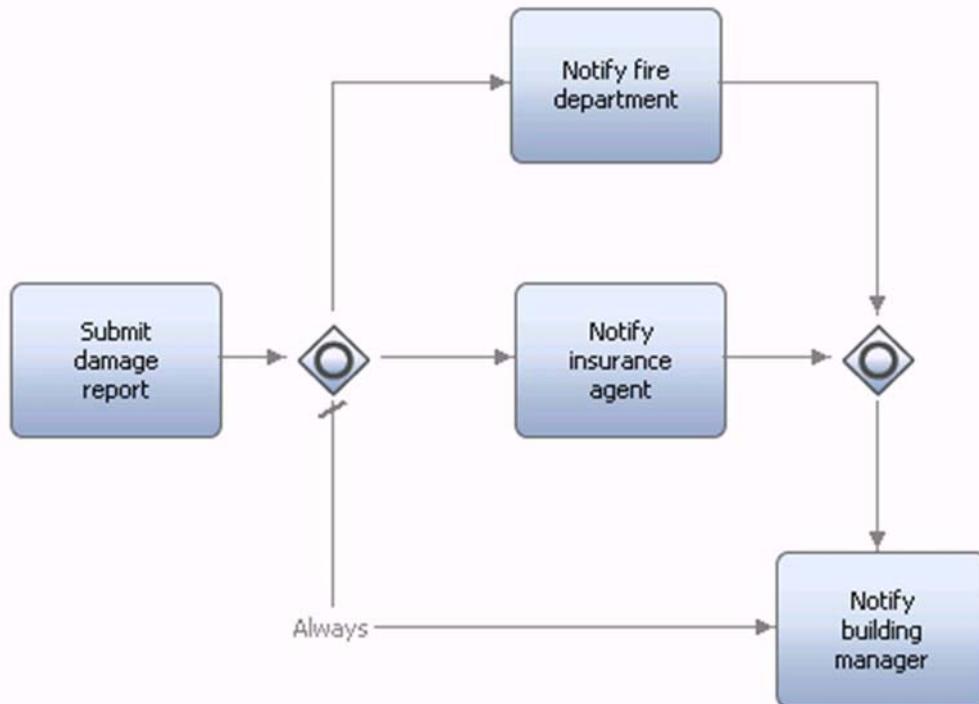
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Figure 5-40. Damage report example (8 of 8)

With this pattern change, you can now be sure that the building manager is notified any time damage occurs to the building.

However, there is one more potential problem. Can you spot it?

Inclusive join example



Playback 0: Controlling process flow

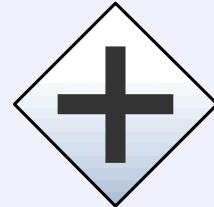
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Figure 5-41. Inclusive join example

There is the potential of notifying the building manager twice. You can fix this potential problem with one more pattern change.

To solve this issue, add a join to the diagram. Even if two tokens arrive at the join, only one token arrives at **Notify building manager**.

Parallel gateway: Diamond with an internal plus

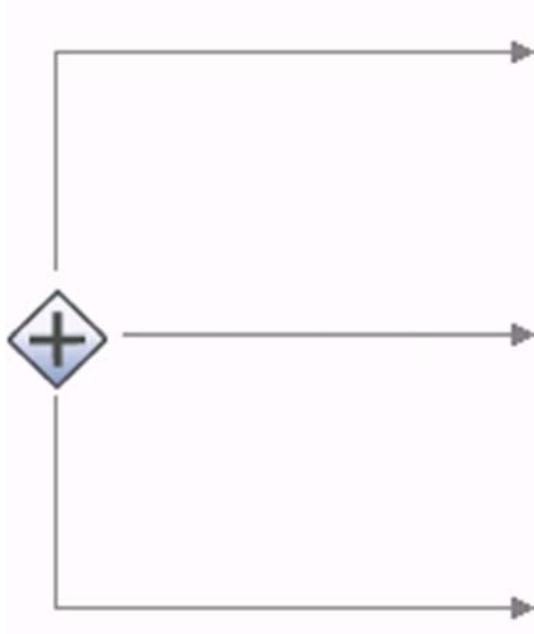


Parallel gateway

Figure 5-42. Parallel gateway: Diamond with an internal plus

The next type of gateway is a parallel gateway (AND). The split mode is called a parallel split, and the join is a parallel join.

Parallel split: No conditional or default flows



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Figure 5-43. Parallel split: No conditional or default flows

Parallel split gateway:

Parallel split gateways are used to direct the process flow along every sequence flow in parallel. There are no conditional or default flows for parallel split gateways; every exiting sequence path is followed.

Parallel join gateway:

A parallel gateway also has a join capability. Similar to an inclusive join, there can be occasions when the business criteria caused multiple sequence flows to be followed in parallel, and the business criteria now needs the sequence flow to be joined.

The parallel join has the following capabilities:

- Any number of incoming sequence flows can be modeled.
- After all incoming sequence flows reach the parallel join, the outgoing sequence flow is followed.
- The parallel join is unable to determine whether an incoming sequence flow is no longer live. Care must be taken when designing the parallel join to ensure that all sequence flows reach it. Do not use a parallel join if you cannot be sure that all incoming sequence flows are followed for every instance likely to be processed.

Process narrative

New hire onboarding process:

- On the first day of employment, employees must complete the HR new hire forms

Then, they must:

- Apply for a security badge
- Requisition a computer
- Apply for a network ID and email address

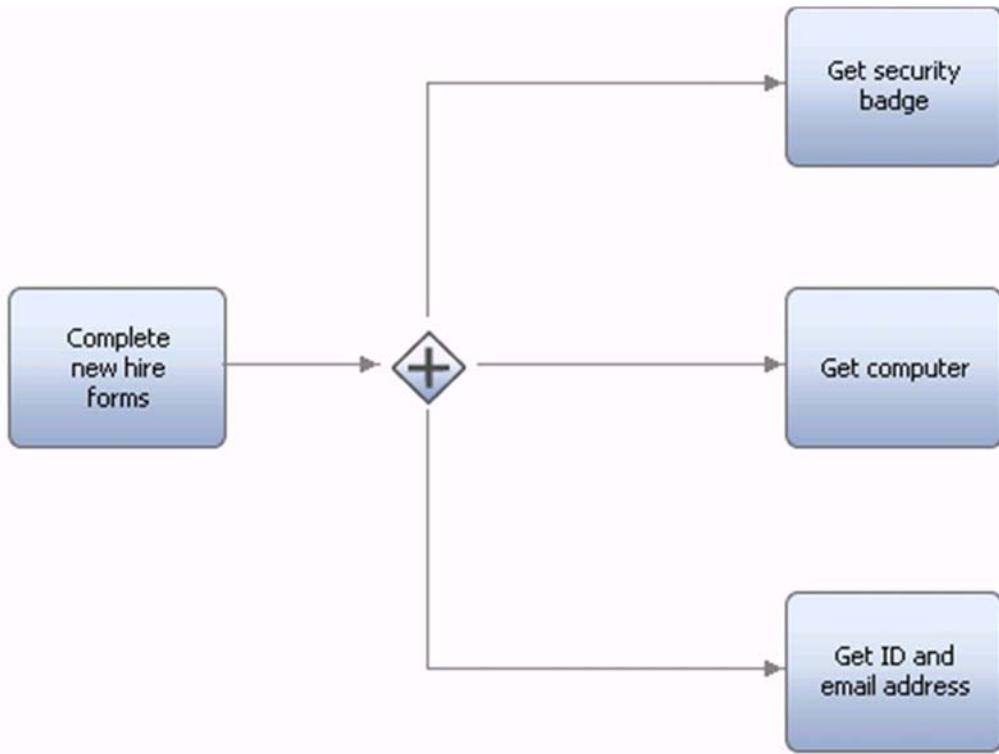
Playback 0: Controlling process flow

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Figure 5-44. Process narrative

You can try and create the model using this process narrative.

New hire onboarding example (1 of 4)



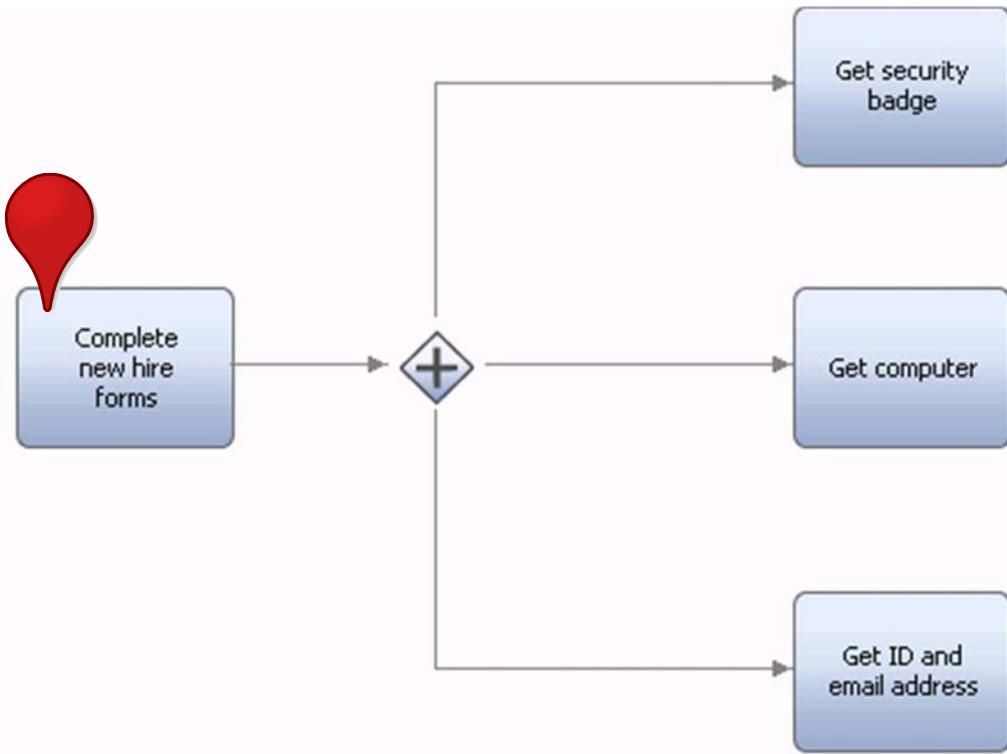
Playback 0: Controlling process flow

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Figure 5-45. New hire onboarding example (1 of 4)

This example has a parallel split gateway.

New hire onboarding example (2 of 4)



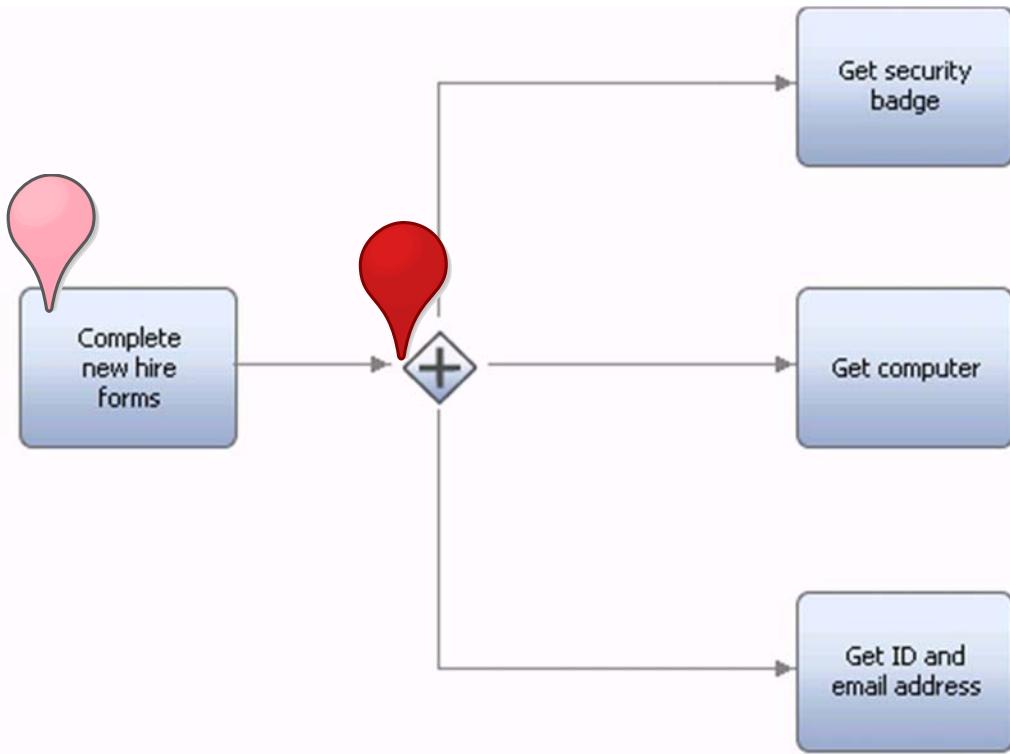
Playback 0: Controlling process flow

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Figure 5-46. New hire onboarding example (2 of 4)

This example uses tokens.

New hire onboarding example (3 of 4)



Playback 0: Controlling process flow

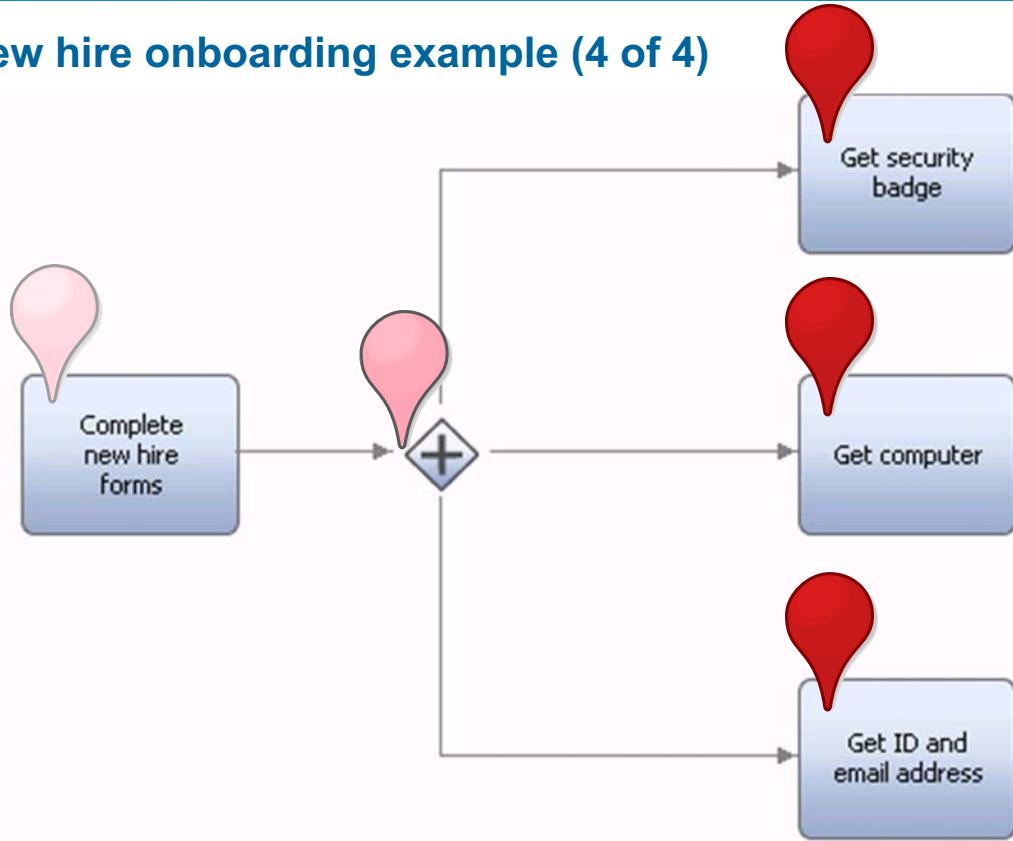
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Figure 5-47. New hire onboarding example (3 of 4)

The token is now on the gateway.



New hire onboarding example (4 of 4)



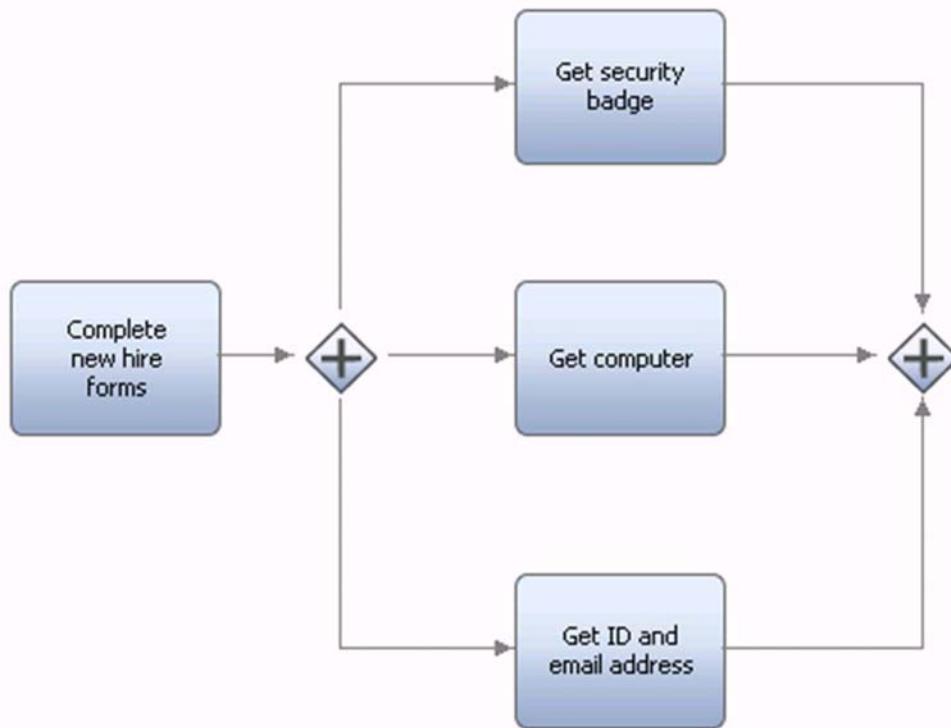
Playback 0: Controlling process flow

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Figure 5-48. New hire onboarding example (4 of 4)

There are no conditions on the lines of a parallel split, so all paths are taken at the same time.

Parallel join



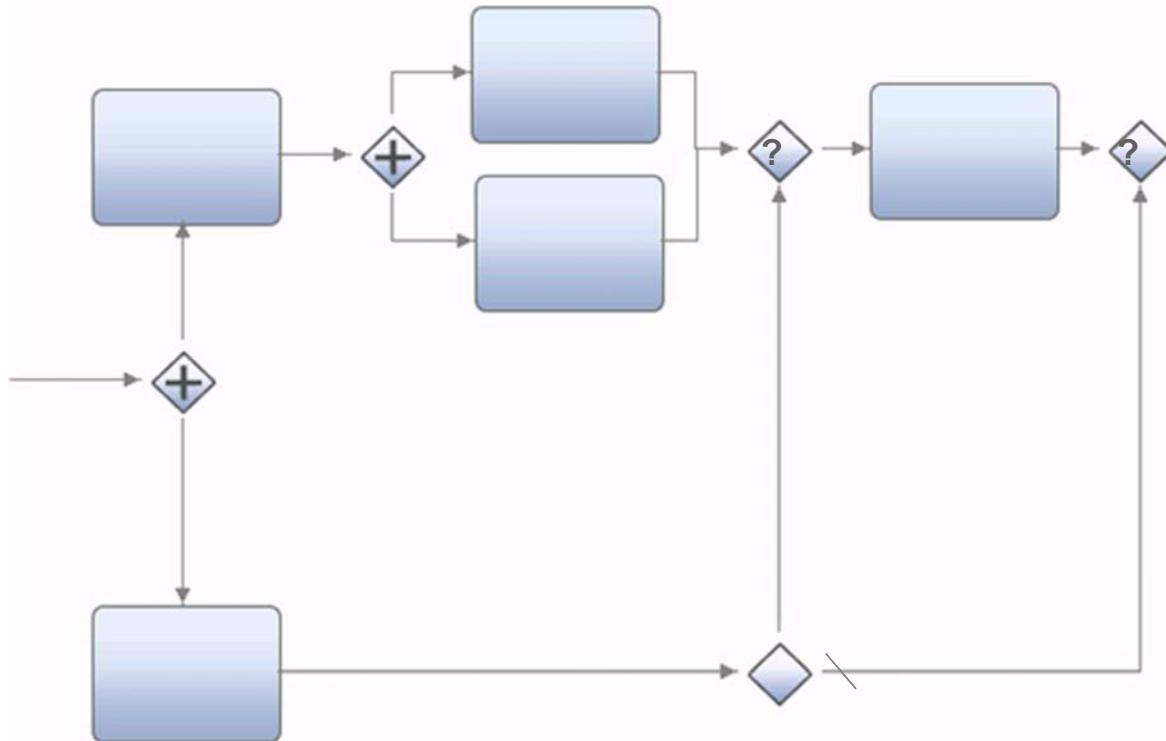
Playback 0: Controlling process flow

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Figure 5-49. Parallel join

After all the tasks are completed, you must consider how the rest of the flow will occur. Adding a join to your diagram is a good practice. In this case, a parallel join is used to "collect" all the tokens before moving further down the process. Consider what happens when the join is an inclusive, exclusive, or parallel join.

Name the gateway



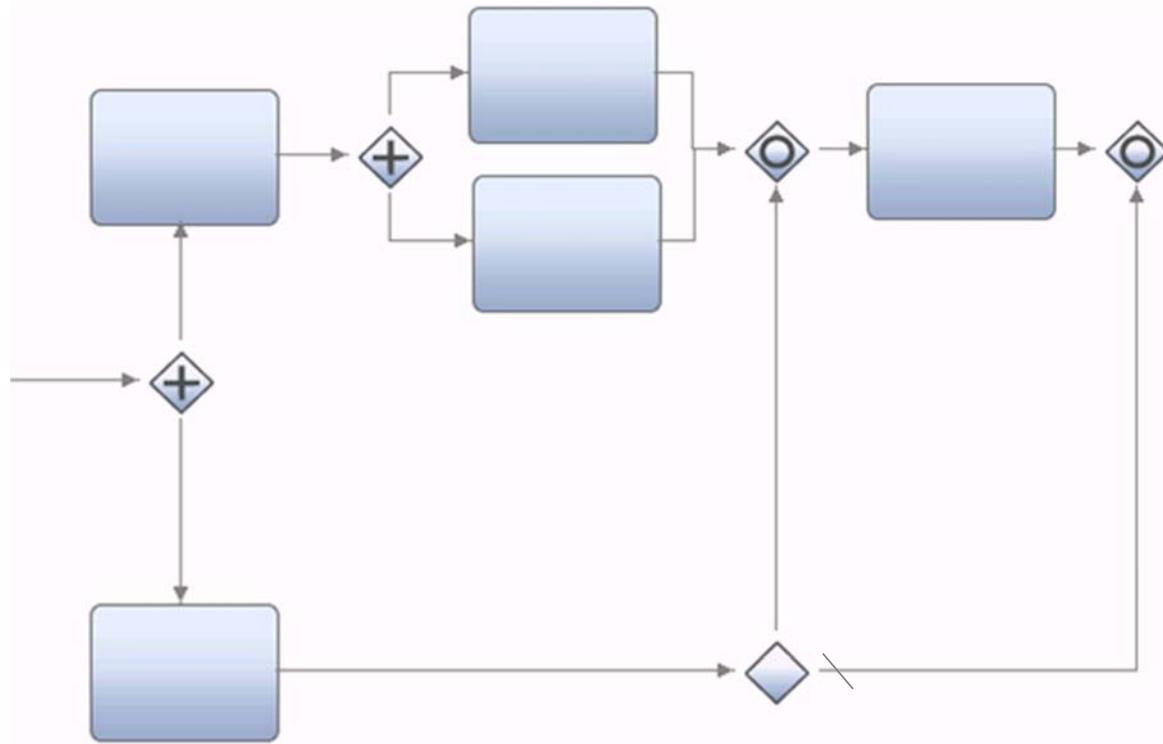
Playback 0: Controlling process flow

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Figure 5-50. Name the gateway

Joins are flexible in BPMN. Can you name the type of gateway that would be used at each of the question marks?

Name the gateway solution



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Figure 5-51. Name the gateway solution

Both are inclusive joins.

The path at the bottom of the design has an exclusive gateway after the activity. Because only one of the paths can be followed, you do not know until run time which path is taken. Only an inclusive join can determine which paths are live, so it does not wait for a path that never completes.

Evaluating conditions: Decision logic in the outgoing sequence flow

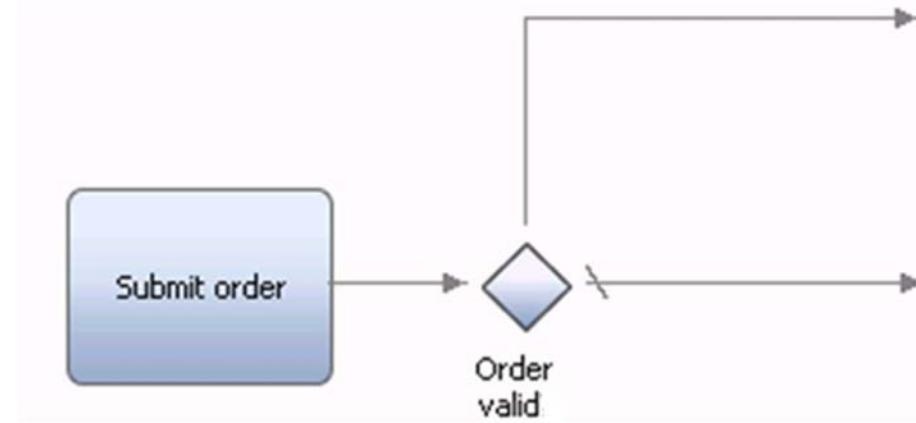
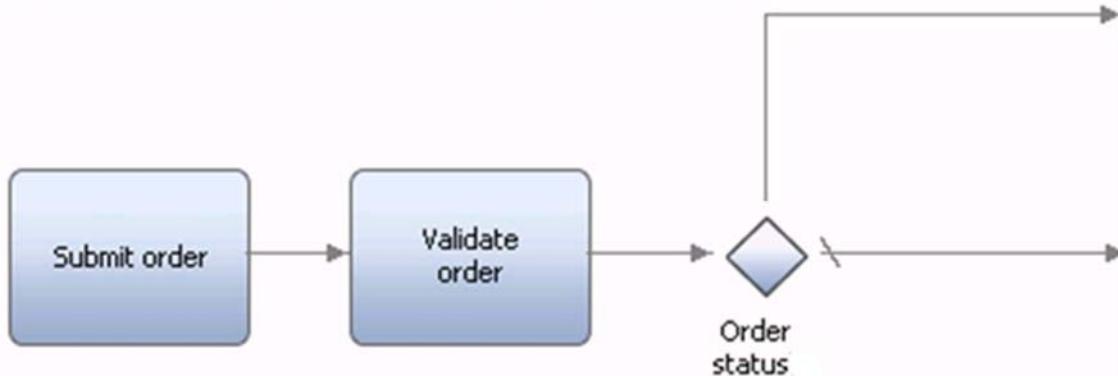


Figure 5-52. Evaluating conditions: Decision logic in the outgoing sequence flow

Both exclusive and inclusive gateways use conditions. These gateways allow the evaluation of these conditions to determine whether they are true or false. You can put the decision logic in the outgoing sequence flows of the gateway if the conditions are simple expressions of process data.

Evaluating conditions: Externalized decision logic



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Figure 5-53. Evaluating conditions: Externalized decision logic

If the conditions are not simple expressions of process data, the good practice is to externalize the decision logic to make it independent of the process model.

Use an activity before the gateway to decide what path to take. Then, use the outgoing sequence flows from the gateway to route the flow based on the decision, as shown in the diagram. This method is the most explicit way to model decision logic used by a gateway.

Gateways can also use a rule service or decision service as part of the implementation of the gateway. This approach has the advantage that it eliminates the creation of a system lane activity on the process to provide the logic for the gateway. The disadvantage is that the logic is hidden from implementers who maintain the code. Both approaches are effective, but it is up to the implementer to decide which approach works best for the organization.

More on implementing the decision service is covered in the Unit 11 of this course.

5.4. Intermediate events

Intermediate events

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Figure 5-54. Intermediate events

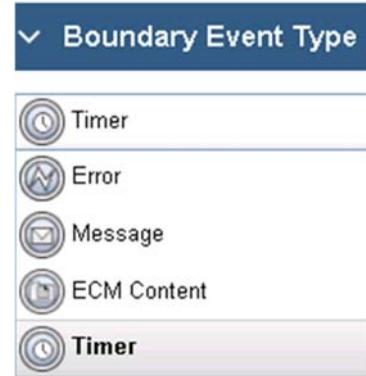
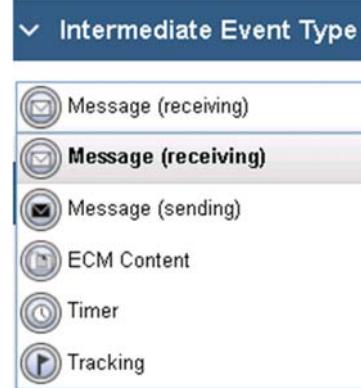
If an event takes place between a start and an end event in the process, it is called an intermediate event.

The intermediate event is designated by a double-lined circle, and an internal marker specifies the type of intermediate event that is taking place.



Intermediate events

- Four types of sequence flow intermediate events
 - Message
 - ECM Content
 - Timer
 - Tracking
- Four types of boundary (attached) intermediate events:
 - Error
 - Message
 - ECM Content
 - Timer



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Figure 5-55. Intermediate events

Intermediate events:

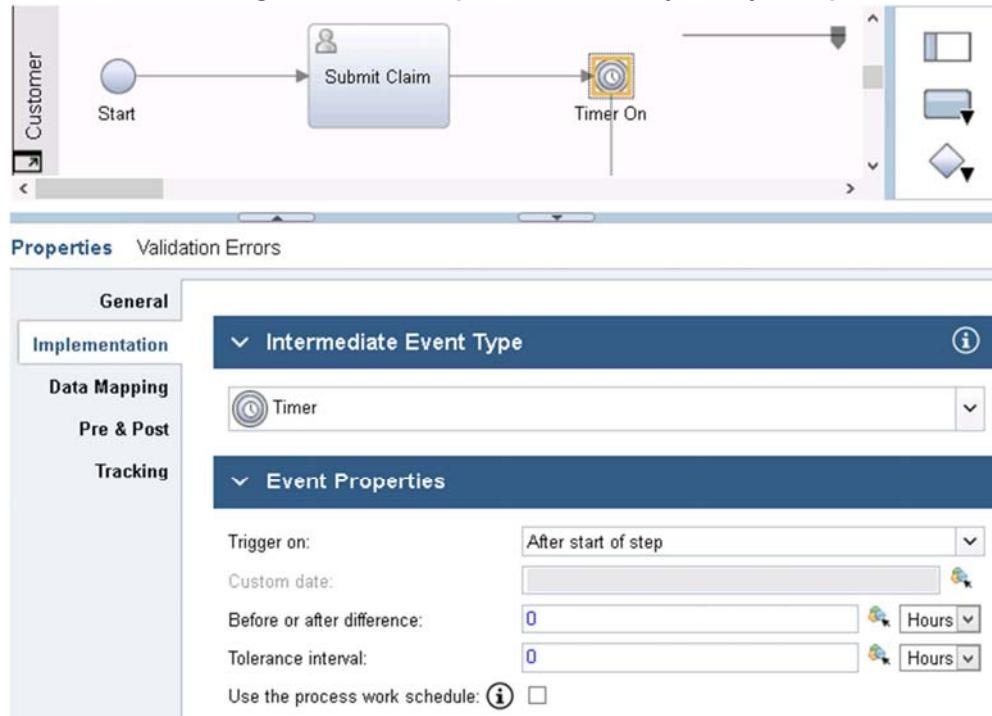
- There are four main types of sequence flow intermediate events: message, content, timer, and tracking.
- There are four main types of boundary (attached) intermediate events: error, message, content, and timer.
- Intermediate events are drawn as a double circle with an internal marker that identifies the type of event.
- All intermediate events behave the same way; they respond to a specific event; however, the implementation of each intermediate event, whether attached or sequence flow, differs.



IBM

Intermediate events: Timer

- Used for modeling escalation paths or delays in your processes



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Figure 5-56. Intermediate events: Timer

A timer intermediate event is used to model escalation paths or delays in a process. By using a timer intermediate event, developers can specify a time interval after or before which some activity is conducted.

IBM Training IBM

Intermediate events: Message

- Used for modeling a message event that is received or sent while a process is running

The screenshot shows a BPMN process diagram titled "Customer". It starts with a "Start" event, followed by an activity "Submit Claim", and then an "Message Received" intermediate event. A properties panel is open for the "Message Received" event, showing the following details:

- General**: Intermediate Event Type: Message (receiving)
- Implementation**: Attached message UCA: <none> (with a "Select..." button)
- Data Mapping**: Condition: 1
- Pre & Post**: Consume message:
- Tracking**: Durable subscription:

At the bottom of the properties panel, it says "Playback 0: Controlling process flow" and "© Copyright IBM Corporation 2016".

Figure 5-57. Intermediate events: Message

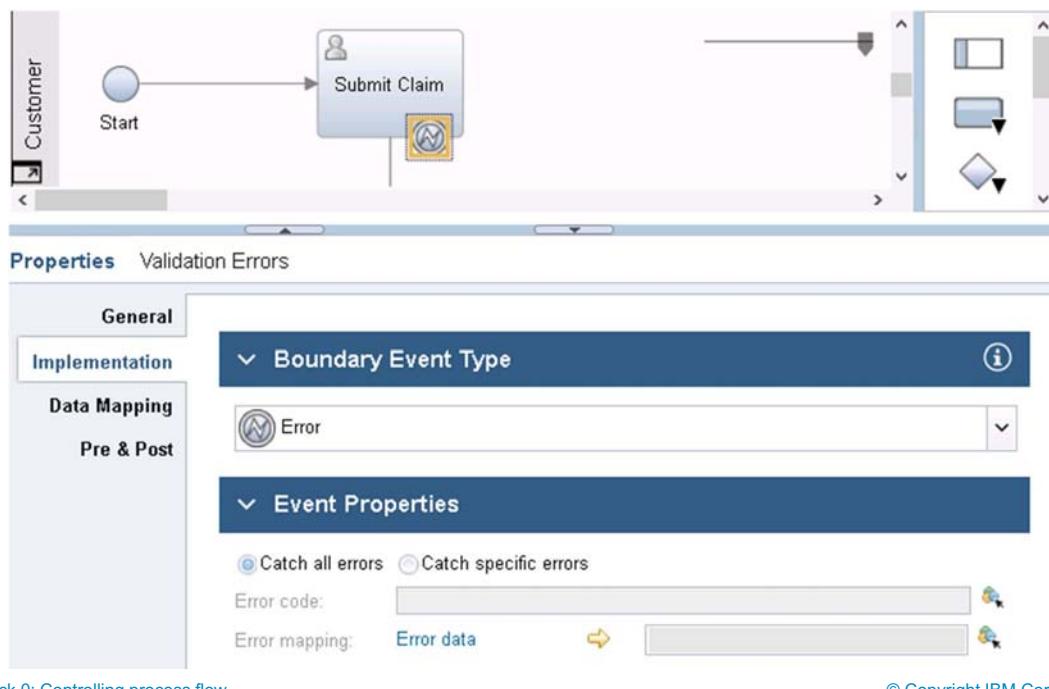
A message intermediate event is used to model a message event that is received or sent while a process is running. For the sequence flow message intermediate event, a light envelope receives a message, and a dark envelope sends a message. When the message intermediate event is attached to an activity, the event receives messages but does not send messages.



IBM

Intermediate events: Error

- Used for detecting errors and handling errors with login in the process flow



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Figure 5-58. Intermediate events: Error

Use the intermediate event to detect errors and to handle errors with login in the process flow.



Important

The Error implementation option is available for events that are attached to activities. Error intermediate events are not used in sequence flow.

IBM Training

Intermediate events: Content

- Used for modeling an Enterprise Content Manager event that the process receives

The screenshot shows a BPMN process diagram and its corresponding properties dialog.

Process Diagram:

```

graph LR
    Start((Start)) --> SubmitClaim[Submit Claim]
    SubmitClaim --> ECMContent{ECM Content}
    
```

Properties Dialog:

- General Tab:**
 - Intermediate Event Type:** ECM Content
- Event Properties:**
 - Attached content UCA: <none> (with a "Select..." button)
 - Condition: (empty text input field)
 - Consume message: (checkbox)
 - Durable subscription: (checkbox)

Customer

Start

Submit Claim

ECM Content

Properties Validation Errors

General Implementation Data Mapping Pre & Post Tracking

Intermediate Event Type

ECM Content

Event Properties

Attached content UCA: <none> Select...

Condition:

Consume message:

Durable subscription:

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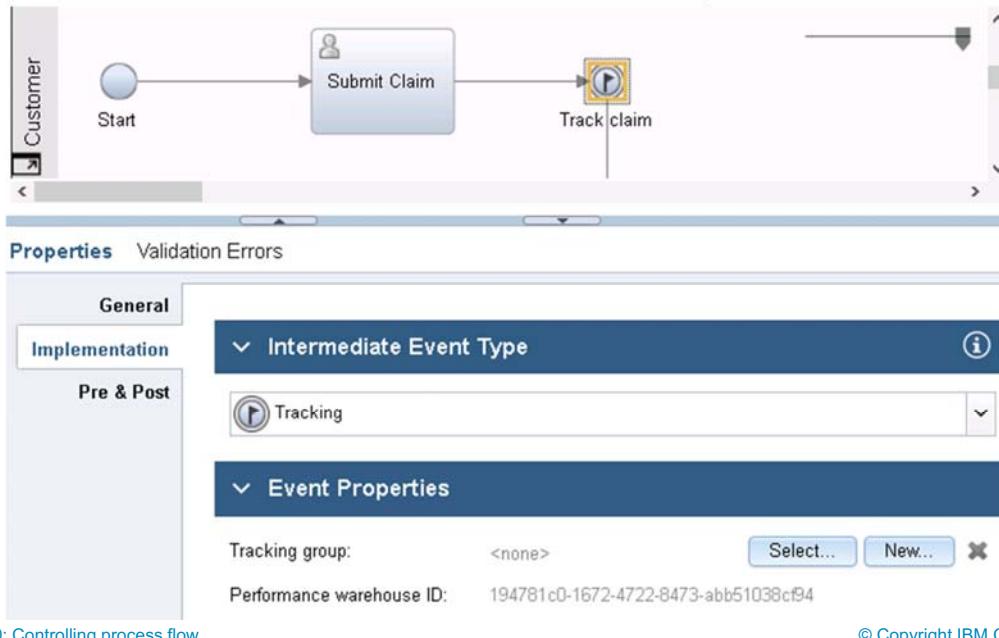
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Figure 5-59. Intermediate events: Content

Use the Content implementation option to model an Enterprise Content Manager event that is received. The Content implementation option is available for events that are included in the process flow and events that are attached to an activity.

Intermediate events: Tracking

- Used for indicating a point in a service at which you want Process Designer to capture the runtime data for reporting purposes
- This event is an intermediate event that is specific to IBM



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Figure 5-60. Intermediate events: Tracking

The tracking intermediate event is used to indicate a point in a service at which you want IBM Process Designer to capture the runtime data for reporting purposes.

A tracking intermediate event is a sequence flow implementation. This event is an intermediate event that is specific to IBM Business Process Manager.

Attached and sequence flow intermediate events

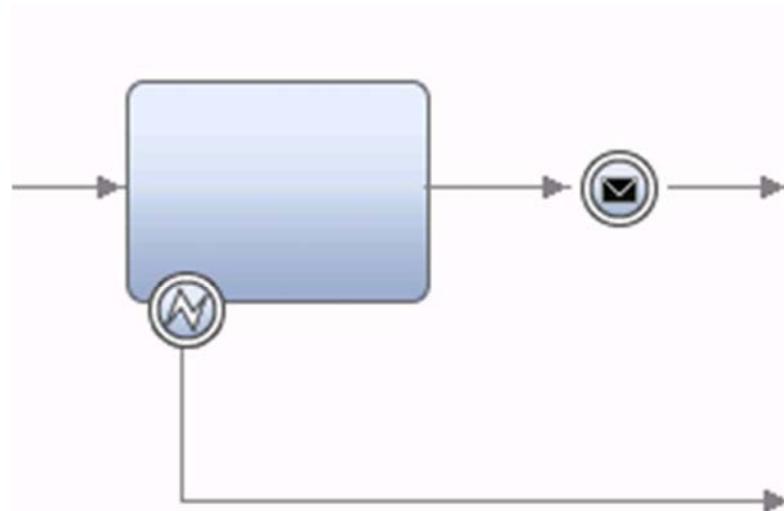
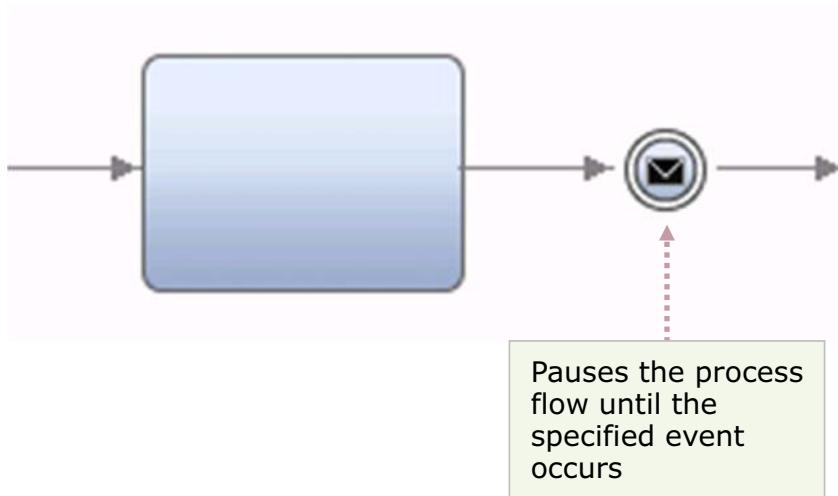


Figure 5-61. Attached and sequence flow intermediate events

Intermediate events can be in sequence flow or attached to the boundary of an activity. All intermediate events, except for tracking intermediate events, are processed the same way in IBM Process Designer.

Sequence flow intermediate event



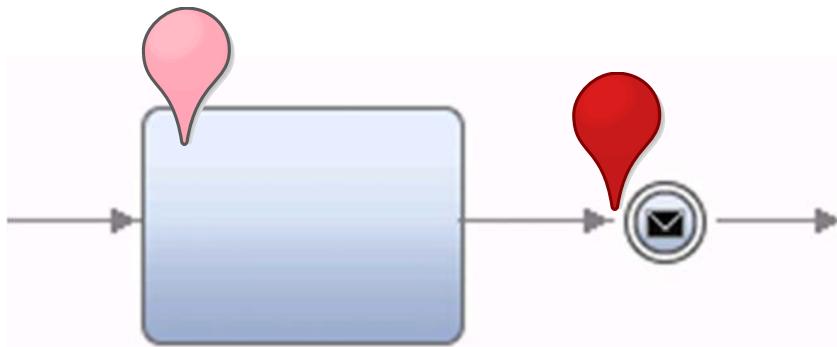
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Figure 5-62. Sequence flow intermediate event

An intermediate event in the sequence flow pauses the process until the specified event takes place.

Process stops until an intermediate event occurs



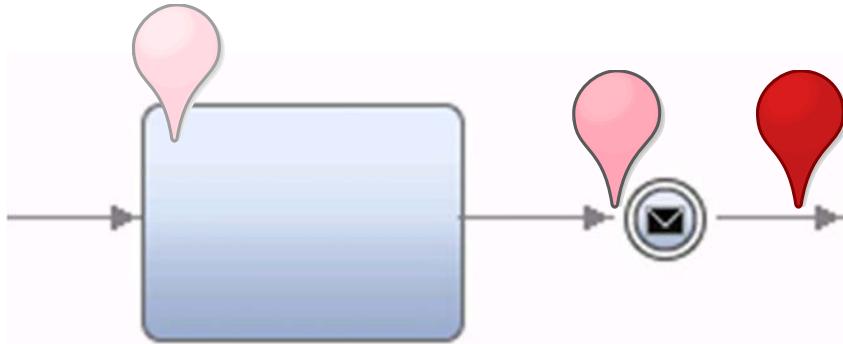
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Figure 5-63. Process stops until an intermediate event occurs

The token stops at the intermediate message event.

Process continues on sequence flow when an intermediate event completes



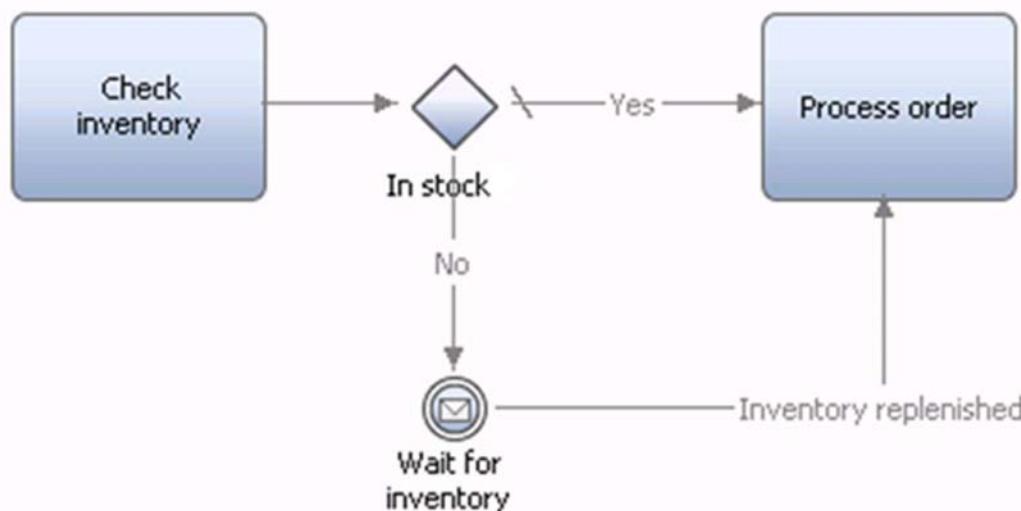
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Figure 5-64. Process continues on sequence flow when an intermediate event completes

When the specified event occurs, the process flow continues along the normal sequence flow.

A common requirement (1 of 5)



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Figure 5-65. A common requirement (1 of 5)

This example shows the inventory requirement model. When someone places an order, check inventory and see whether it is in stock or out of stock. If it is in stock, process the order. If it is not in stock, wait for replenishing of the inventory before processing the order.

A common requirement (2 of 5)

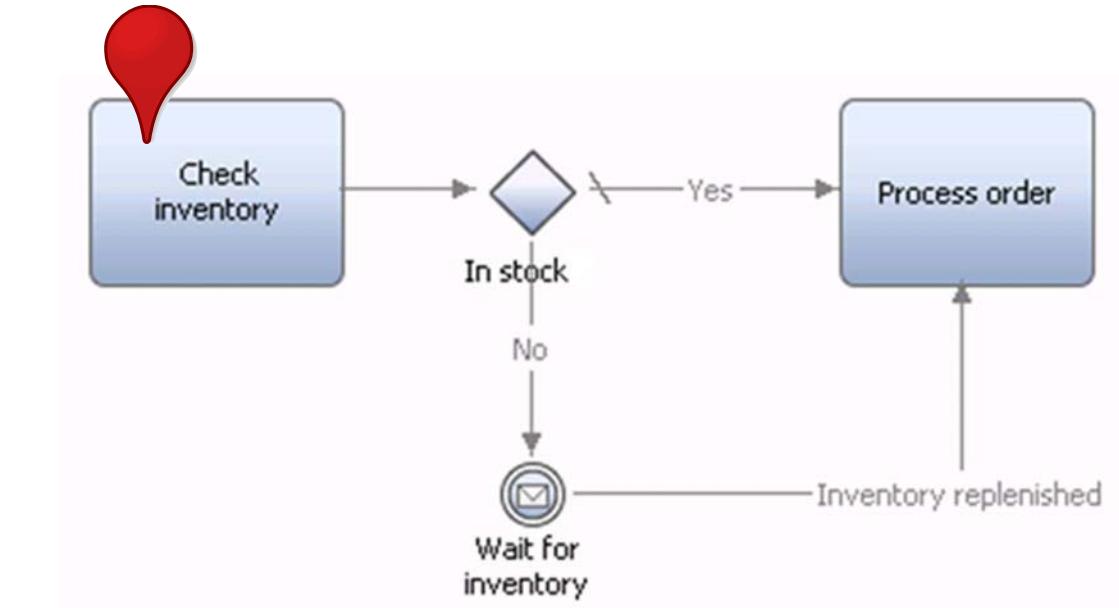


Figure 5-66. A common requirement (2 of 5)

Follow the token again.

A common requirement (3 of 5)

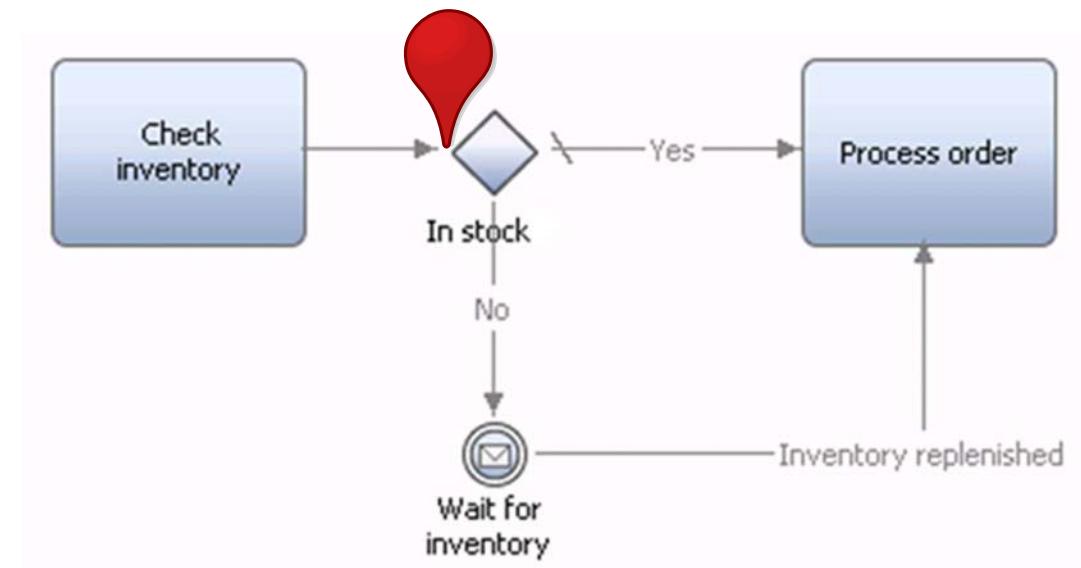


Figure 5-67. A common requirement (3 of 5)

The token is on the gateway, and the inventory is not in stock.

A common requirement (4 of 5)

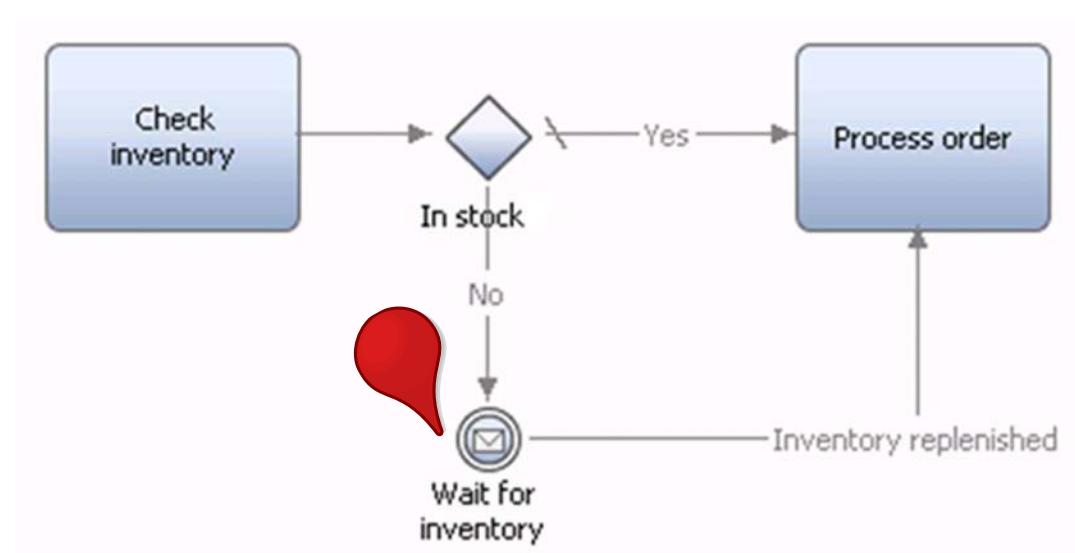
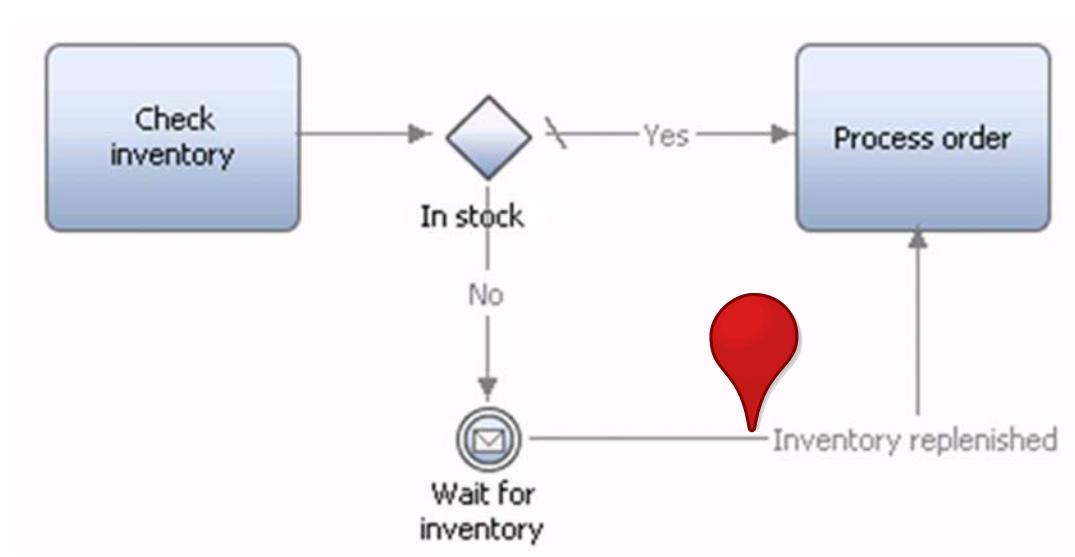


Figure 5-68. A common requirement (4 of 5)

The token stops on the intermediate event.

A common requirement (5 of 5)



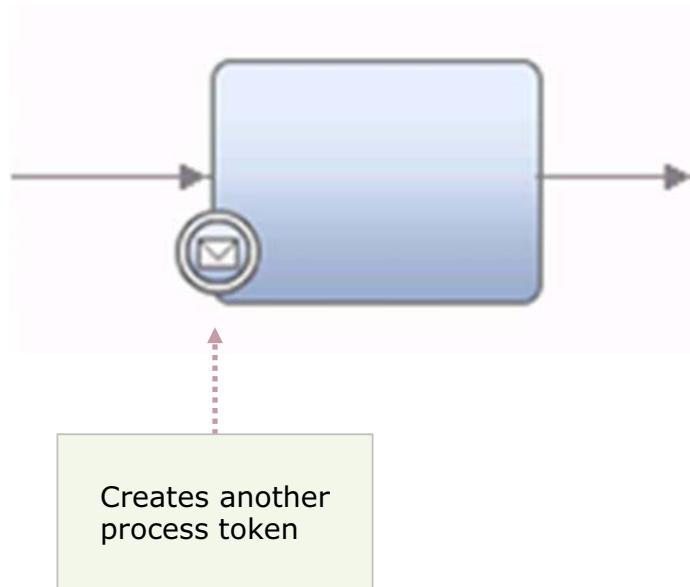
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Figure 5-69. A common requirement (5 of 5)

The process is paused while the token is on the event, and then the process continues again after the **Wait for inventory** event takes place.

Attached intermediate event



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Figure 5-70. Attached intermediate event

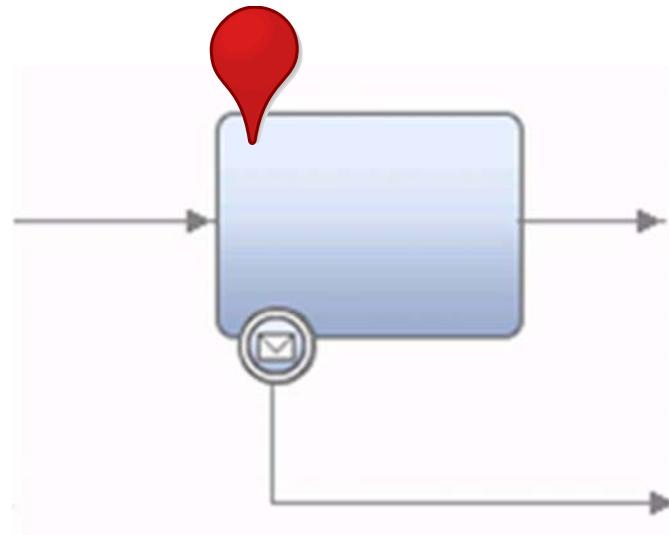
An intermediate event that is attached to the boundary of an activity produces a separate token. If the specified event takes place while the activity is active, the intermediate event distributes the token along the outgoing sequence flow. After it occurs, you can specify whether to create parallel or an alternative process flow.



Note

An intermediate tracking event has a different behavior and does not conform to these behaviors.

Process flow reaches an activity



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Figure 5-71. Process flow reaches an activity

Follow the token. Here the process flow reaches the activity.

Attached intermediate event generates a separate token

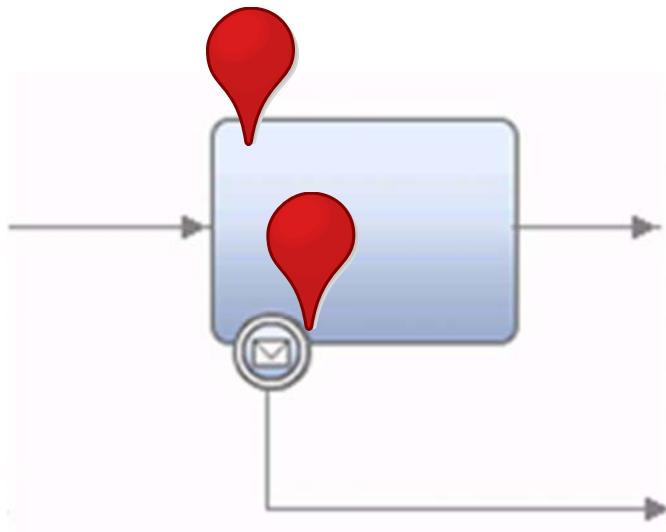
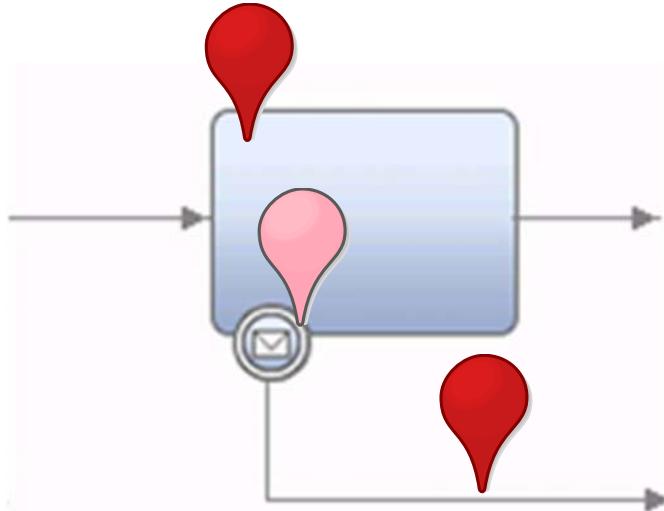


Figure 5-72. Attached intermediate event generates a separate token

The attached intermediate event generates a separate token.

Attached intermediate event can create a parallel flow



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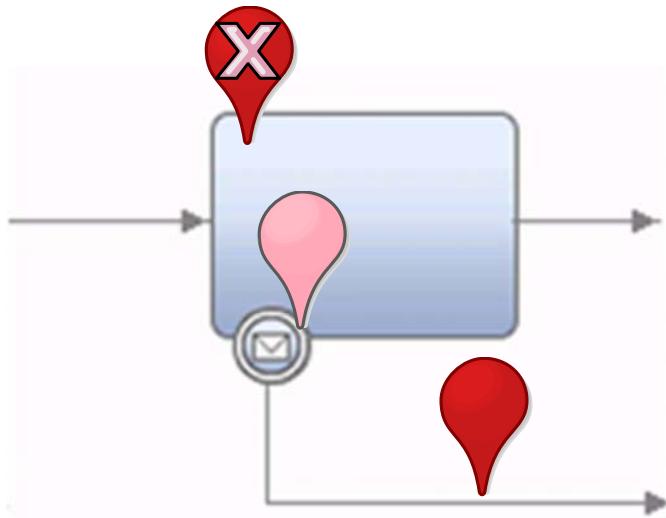
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Figure 5-73. Attached intermediate event can create a parallel flow

Two things might happen:

- One option is that the attached intermediate event can create a parallel flow, and both tokens continue.
- The second option is shown on the next slide.
- The third option is that the token on the activity completes before the message is received, and the activity consumes the event token before moving down the process flow.

Attached intermediate event can close an activity



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Figure 5-74. Attached intermediate event can close an activity

Another option is that the attached intermediate event can be defined to close an activity. The token on the activity is consumed, and one token continues down an alternative path.

Attached intermediate event example (1 of 4)

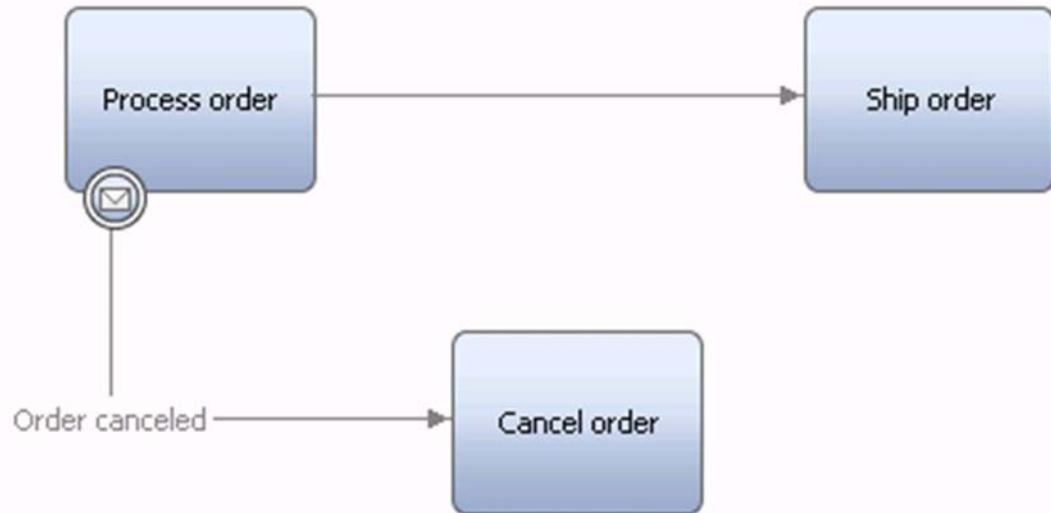
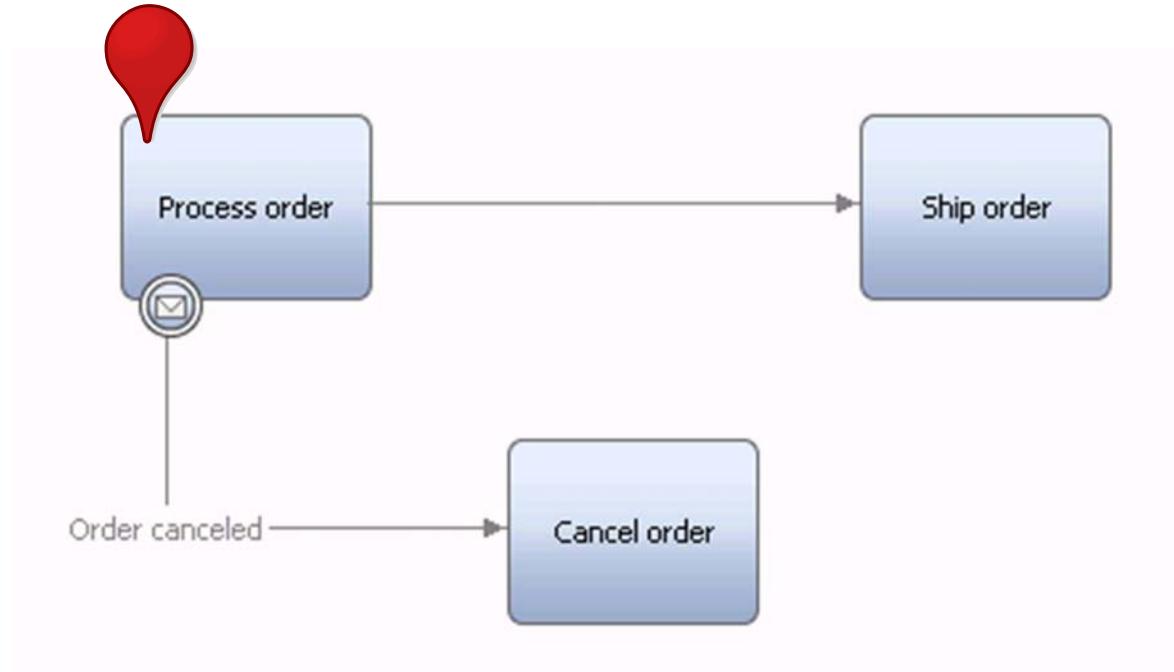


Figure 5-75. Attached intermediate event example (1 of 4)

This slide is an example process for an attached intermediate event.

Attached intermediate event example (2 of 4)



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Figure 5-76. Attached intermediate event example (2 of 4)

The token starts on the **Process order** activity.

Attached intermediate event example (3 of 4)

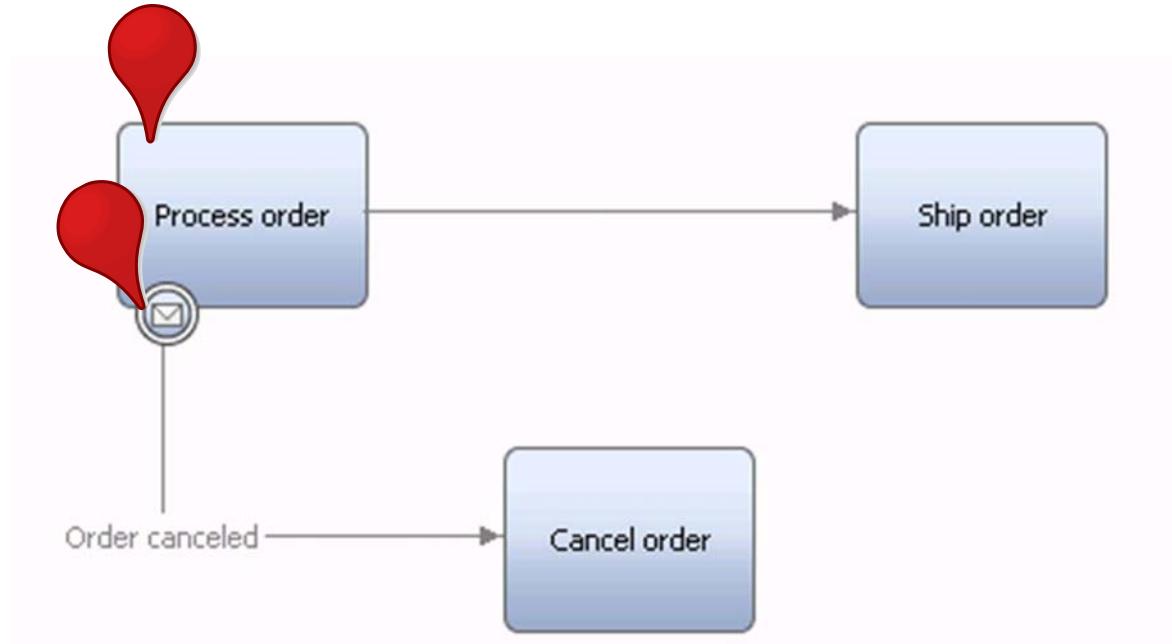


Figure 5-77. Attached intermediate event example (3 of 4)

Intermediate events can also be attached to the boundary of an activity.

Attached intermediate event example (4 of 4)

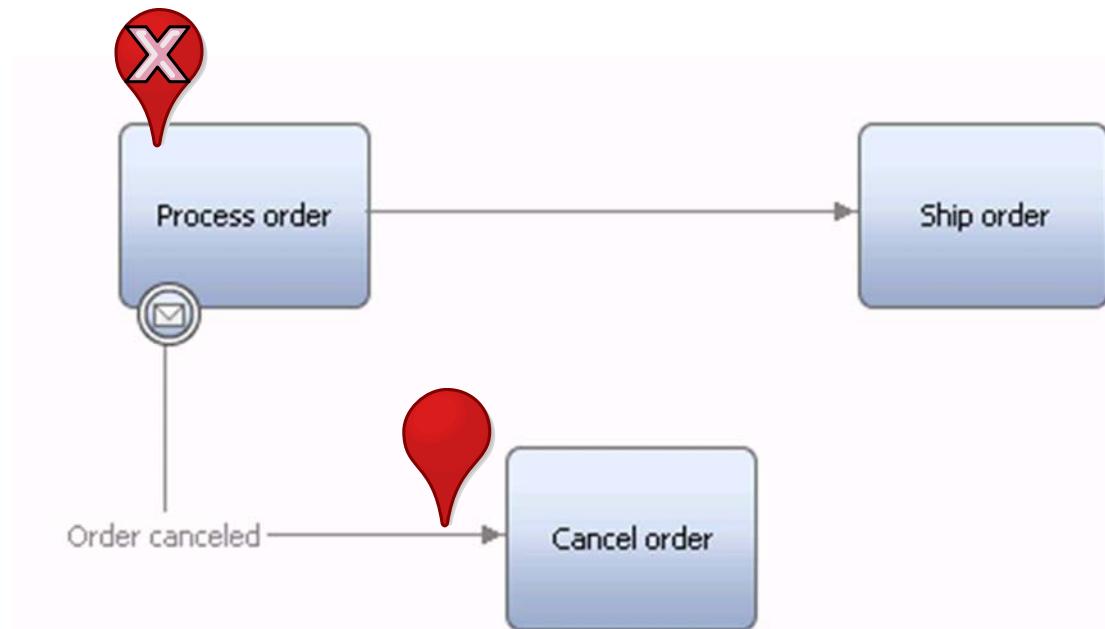


Figure 5-78. Attached intermediate event example (4 of 4)

The intermediate event is defined to close the activity, so only one token continues to **Cancel** order.

Attached intermediate event is active only when the activity it is attached to is active

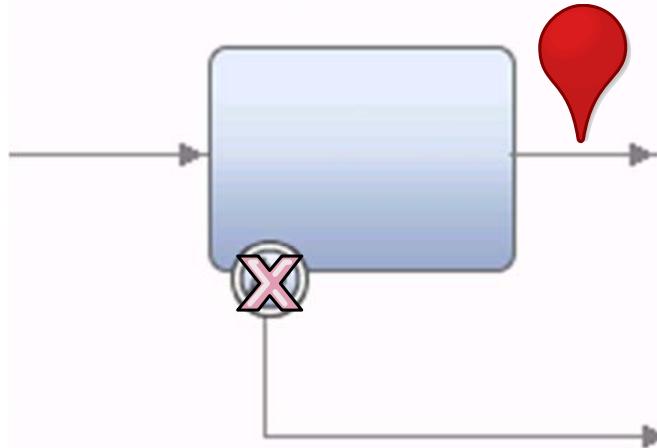


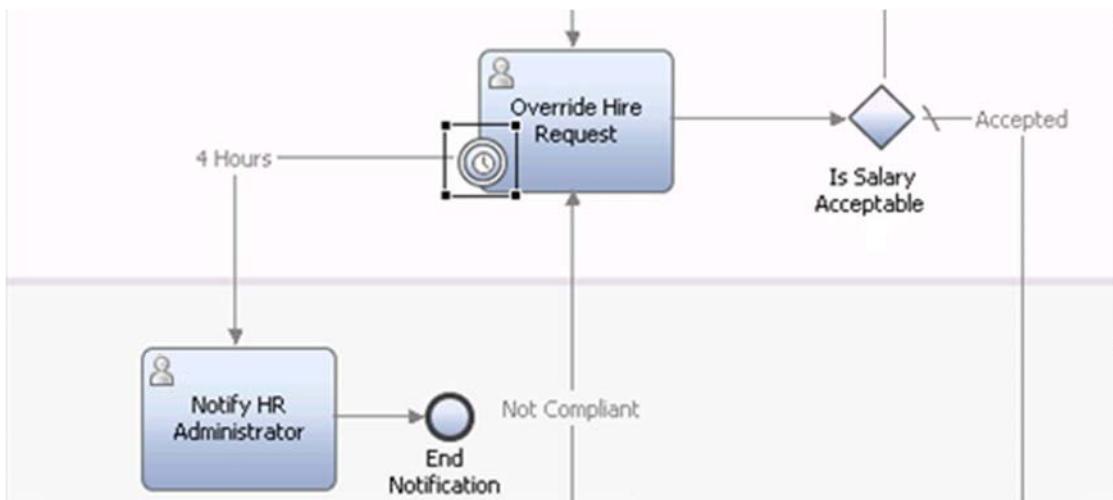
Figure 5-79. Attached intermediate event is active only when the activity it is attached to is active

The event is no longer active when the process activity is not active.

The tracking event has a particular way of working. As already mentioned, it is used to capture runtime data for reporting purposes. Tracking events can be placed only on process flows and not attached to activities. After the flow reaches a tracking event, it does not “pause” the process, but instead causes the capturing of runtime data at the event. Multiple tracking points can be placed within a process to capture different data at different points and different “snapshots” of data at various points. For more information, see the IBM Business Process Manager help file.

A way to model an escalation

- Use an attached intermediate event
- Activity takes longer to complete than a defined amount of time
- The attached intermediate event triggers an escalation, which follows the path from the attached intermediate event to an escalation activity



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Figure 5-80. A way to model an escalation



Timer intermediate event

- Allows a process to wait explicitly, or react to the passing of time
- Time interval can be based on system time, a due date, or a custom time



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Figure 5-81. Timer intermediate event

A timer intermediate event has the following characteristics:

- Allows a process to wait explicitly, or react to the passing of time
- Time interval can be based on system time, a due date, or a custom time
- Example: A traffic citation process (pay the fine activity) where if someone does not pay a traffic ticket within 30 days, a citation is issued

Demonstration

This demonstration covers the following topics:

- Create gateways
- Create intermediate events

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Figure 5-82. Demonstration

This demonstration is stored as the `demo3.mp4` file that is in the `C:\labfiles\demo` folder.

Creating gateways:

1. Drag the gateway symbol from the element palette to the process.
2. Name the gateway.
3. Select the type of gateway you want in the Properties > General menu.
4. Using the sequence flow tool, click to anchor the flow line from an activity, and then click to connect the flow line to a gateway in the process.
5. Using the sequence flow tool, click to anchor the flow line from a gateway, and then click to connect the flow line to an activity in the process.
6. To add a label to the sequence flow line, select the line in your process and then edit the Name property value. Make sure that you select the Name Visible check box to see it in the process.
7. Do not worry if there are no conditional diamonds on your sequence flow lines or if the wrong sequence flow is displayed with the default flow identifier. The conditional and default flow identifiers are corrected during implementation.

Creating intermediate events:

1. Drag the intermediate event component from the element palette to the process.
2. If an attached timer intermediate event is needed, place the element in the boundary of the chosen activity.
3. Name the event according to naming conventions.
4. If a sequence flow intermediate timer event is needed, place the element in the sequence flow that you want in the process.
5. Select the event and change the type in the implementation section, if needed.
6. If modeling an escalation, place an activity from the element palette into the process, where the participant responsible for the escalated task is located.
7. Use the sequence flow tool from the element palette to connect the attached intermediate event to the activity and modify the process flow.

Unit summary

- Describe process sequence flow and the runtime use of process tokens
- List and describe gateways as they are used in the web 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 the web Process Designer
- Model a business process escalation path with an attached timer intermediate event

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Figure 5-83. Unit summary

Review questions (1 of 2)

1. True or False?

A gateway that merges multiple incoming paths into one outgoing path is known as a split.

2. Which of the following sequence flows indicates a processing path to follow when none of the conditions on the conditional flows are true?

- A. Default
- B. Normal
- C. Conditional

3. A gateway that is used to move process flow along one or more conditional sequence flows is called an _____ gateway.

- A. Inclusive split
- B. Exclusive split
- C. Inclusive join
- D. Exclusive join

Figure 5-84. Review questions (1 of 2)

Write your answers here:

1.

2.

3.

Review questions (2 of 2)

4. True or False?

Exclusive gateways should be modeled so that only one outgoing sequence flow condition can be true.

5. After all incoming sequence flows reach the _____, the outgoing sequence flow will be followed.

- A. Exclusive join
- B. Parallel split
- C. Parallel join

6. Which of the following list can be used to model escalation paths or delays in your business process definition?

- A. Message intermediate events
- B. Timer intermediate events
- C. Error intermediate events
- D. Tracking intermediate events

Figure 5-85. Review questions (2 of 2)

Write your answers here:

- 4.
- 5.
- 6.

Review answers

1. **False.** The gateway that merges multiple incoming paths is known as a join.
2. **A:** Default.
3. **A:** Inclusive split.
4. **True.**
5. **C:** Parallel join.
6. **B:** Timer intermediate events.

Exercise: Playback 0: Controlling process flow

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Figure 5-87. Exercise: Playback 0: Controlling process flow

The Hiring Requisition process owner provided detailed information about the process and its current state to the BPM analyst, who in turn documented and analyzed the information. The process model is started, complete with some normal sequence flow. There was also some decomposition to make the process model as succinct as possible, which means that there are subprocesses in the model.

Your activity responsibility is to add all the gateways necessary to model the flow control for the process in the Hiring Requisition process, which includes the nested process.

Your activity responsibility is to accomplish the task of adding all the timer intermediate events that help satisfy newly identified requirements for the Hiring Requisition process. It encompasses process flow control and more activities that are based on conditions that non-human interactions set.

Exercise 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 the web Process Designer
- Document details for the implementation team

Unit 6. Playback 0: Building consensus

Estimated time

01:00

Overview

A 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.

How you will check your progress

- Checkpoint questions and lab exercises

References

Unit objectives

- Describe the Playback 0 validation goals and requirements
- Validate that a process model meets Playback 0 goals and requirements

Playback 0: Building consensus

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Figure 6-1. Unit objectives

Topics

- Playback 0: Validation phase
- Reaching consensus on the process model

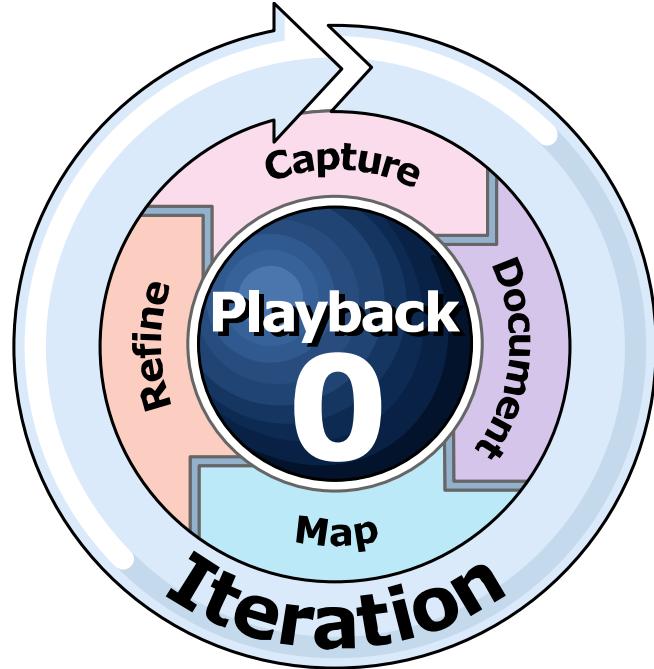
Playback 0: Building consensus

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Figure 6-2. Topics

Key concepts in this unit

- **Playback 0: Building consensus:** A validation that is accomplished through a review session with all business stakeholders, business users, and the IBM Business Process Manager development team



Playback 0: Building consensus

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Figure 6-3. Key concepts in this unit

6.1. Playback 0: Validation phase

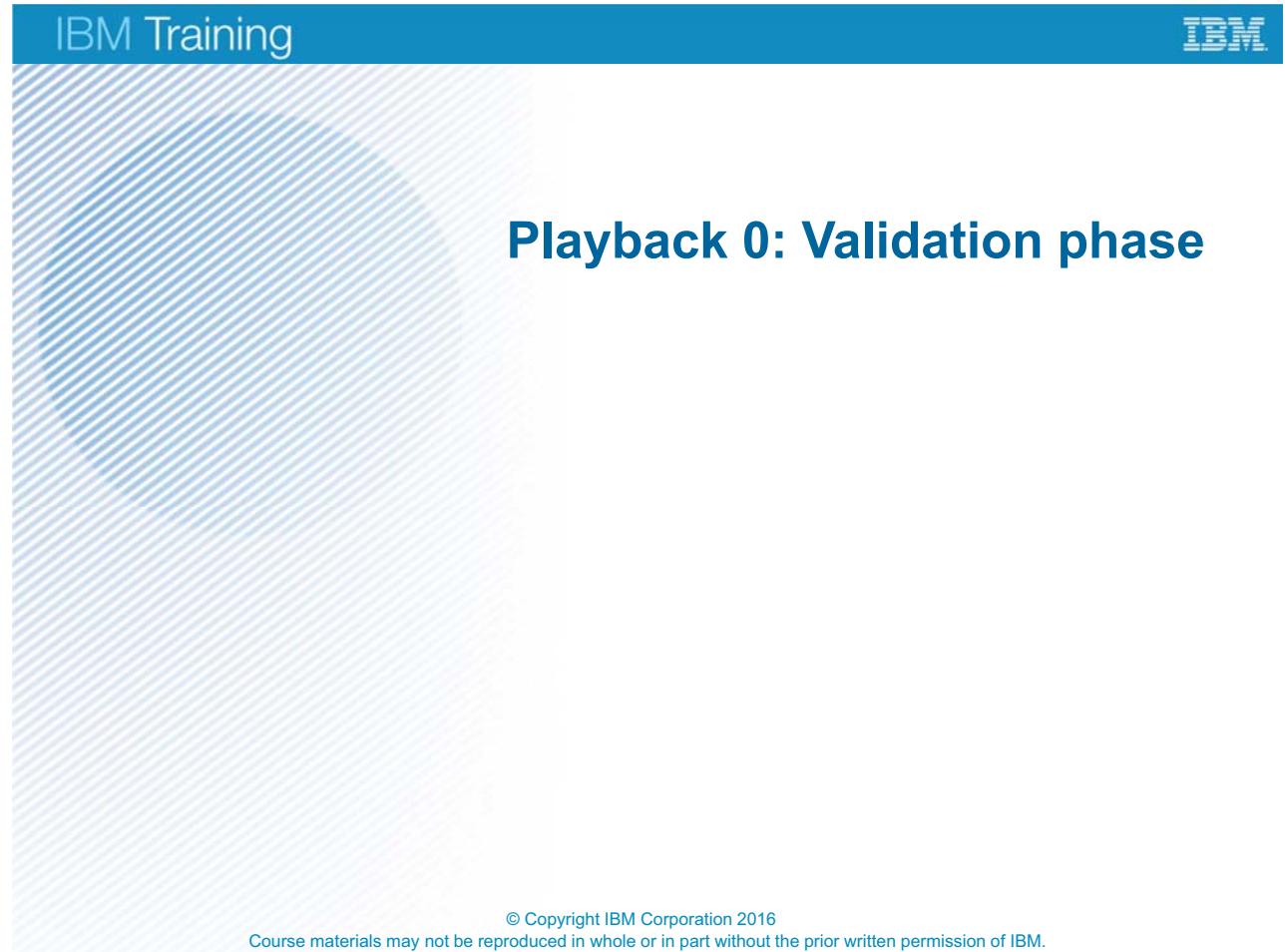


Figure 6-4. Playback 0: Validation phase

In Playback 0, documentation and process analysis set the correct framework for the process model creation, process automation, and process activity value analysis to gain efficiencies, visibility, and effectiveness for the business process. The entire Playback 0 stage typically takes one to three weeks to complete.

Playback 0 validation

Playback zero

Definition

1 - 3 weeks

Descriptive modeling

Analytical modeling

Validate

Discovery

- Process goals
- Critical success factors
- Scoping
- Process capture and documentation

As is model

- Current state model in various formats
- Captured information: RACI, SIPOC, and issues

Analysis

- Refine the current state process model
- Added value analysis
- Root cause analysis
- Opportunity prioritization
- Process simulation

To be model

- Business data
- Business case with estimated potential value and impact
- Scope and effort assessment
- Process model diagram (BPMN)

Final playback

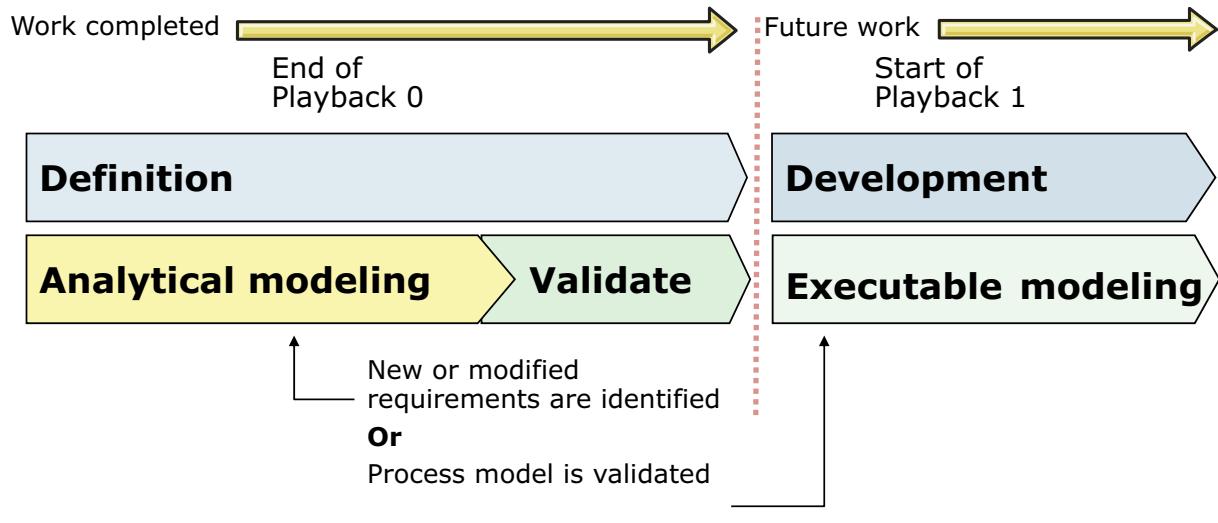
Playback 0: Building consensus

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Figure 6-5. Playback 0 validation



How validation works



- Playback 0 validation is accomplished through a review session with all business stakeholders, business users, and the IBM BPM development team
- Validation leads to the switch from analytical modeling to executable modeling
- More refinement to process requirements can continue through the framework of the next series of implementation playbacks in process implementation

Playback 0: Building consensus

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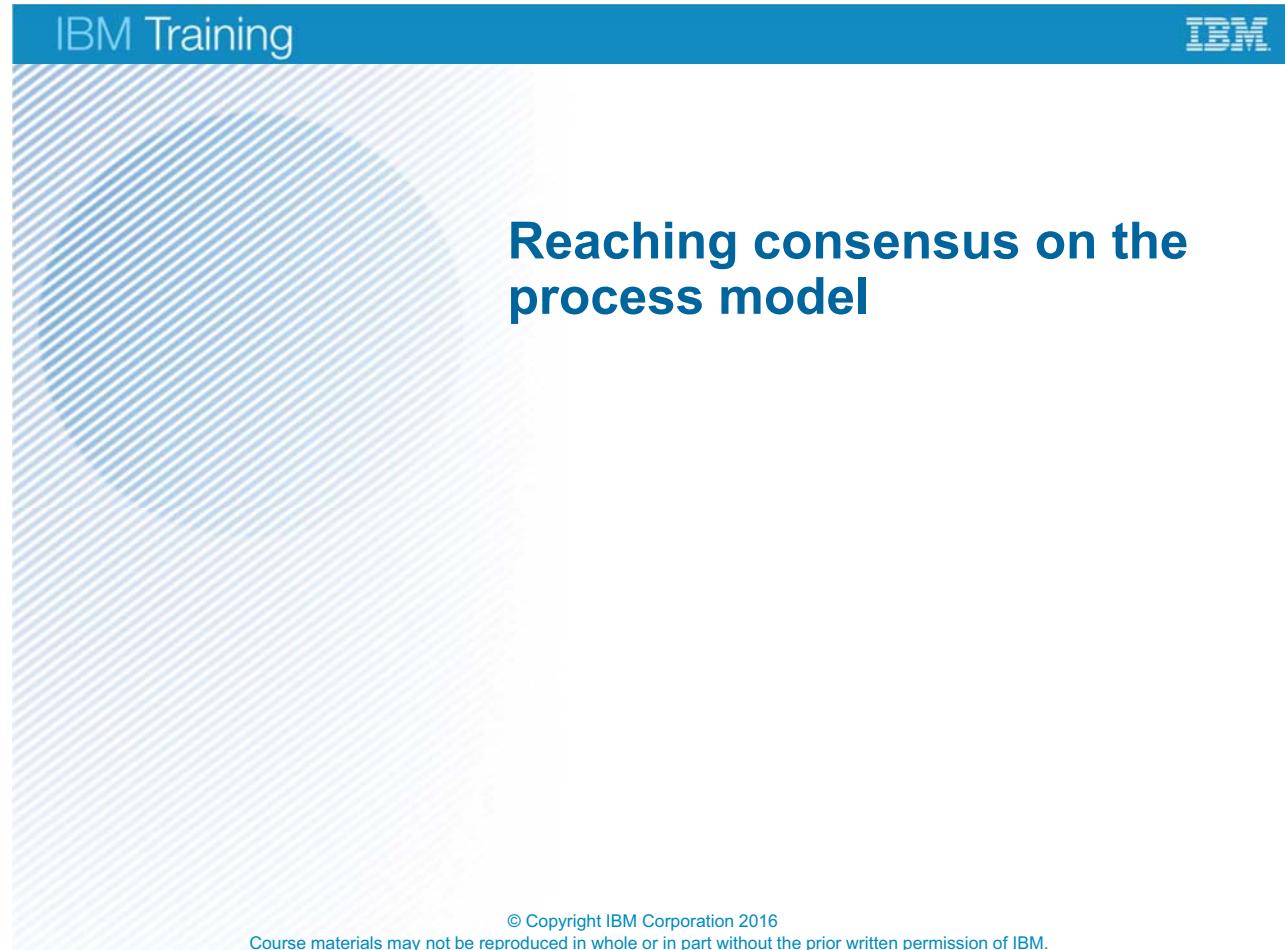
Figure 6-6. How validation works

The work that is done in Playback 0 is reflected in the adjusted process model of the business process, and now it can be implemented as a process application. To ensure that the business process is the right candidate to implement, it is necessary to have consensus that Playback 0 reached the final goal. This consensus is known as Playback 0 validation.

Playback 0 validation is accomplished through a review session that includes attendance of all business stakeholders, business users, and the BPM development team. The validation leads to the switch from analytical modeling to executable modeling. If the validation is complete and the process model is approved, then any additional refinement to process requirements can continue through the framework of the next series of implementation playbacks in process implementation.

There are situations when a validation playback session discovers requirements that were missed or new requirements are introduced. This situation is not uncommon in BPM; the one thing that is certain is that requirements change. For this reason, a process model must be flexible enough for change; and BPM provides the best system to manage change, which results in continuous process improvement.

6.2. Reaching consensus on the process model



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Figure 6-7. Reaching consensus on the process model

During the Playback 0 stage of project development, multiple playback sessions are held. In fact, there is typically a themed approach for these sessions within the three-week time frame. The BPM team can establish the best course of action to take for playbacks within the Playback 0 development. The strategy to handle each of these themed playbacks is through iteration.

These sessions take 60 – 90 minutes, and must include important decision makers for the specific playback achievement that is reached. Many organizations select a project sponsor or a senior business user to conduct the playback so there is buy-in for the project. The session also requires business users to fully understand the development phase end products, thus increasing the tie between the IT and business stakeholders. Here are some examples of themed playbacks for Playback 0:

- Process discovery playback
- Initial (as-is) process model or discovery map playback
- Conceptual design (process application or report mock-up designs) playback
- Measurement and visibility playback
- Validation playback

None of these examples are meant to be the exact themes a BPM team must use; that varies from organization to organization. However, make sure the themes match work that is done during this stage of project development. What is important is the last playback session: validation of the business process and process model.



Validation goals

Playback zero

Definition 1 - 3 weeks

Descriptive modeling

Discovery

- Process goals
- Critical success factors
- Scoping
- Process capture and documentation

As is model

- Current state model in various formats
- Captured information: RACI, SIPOC, and issues

Analytical modeling

Analysis

- Refine the current state process model
- Added value analysis
- Root cause analysis
- Opportunity prioritization
- Process simulation

To be model

- Business data
- Business case with estimated potential value and impact
- Scope and effort assessment
- Process model diagram (BPMN)

Validate

Final playback

- ✓ Confirmed stakeholder acceptance
- ✓ Prioritized roadmap of current and future requirements
- ✓ No requirement is lost in translation to process model
- ✓ Developer ready process model (implementation)

Playback 0: Building consensus

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Figure 6-8. Validation goals

Having a final process model that is ready for implementation means that the BPM team is ready to validate the business process along with the business groups, such as stakeholders and users.

Process analysis, process adjustment, and process modeling have all come together in the short three-week cycle to enable the final session for this stage of project development. This stage is when consensus is reached on the following conditions:

- The process model is ready for implementation.
- No requirements are lost in the translation effort.
- If the business stakeholders still change the requirements, it is time to evaluate the best roadmap to implement those requirements into the model, up to and including just before the validation agreement is obtained.

Playback 0 validation is conducted with the process inside the Web Process Designer tool. On the condition that everyone in the room can view the process, any tool can be used to show the process. The objective is to review all process flow, normal and conditional, and model specifics such as participants, activities, and process control.

Unit summary

- Describe the Playback 0 validation goals and requirements
- Validate that a process model meets Playback 0 goals and requirements

Playback 0: Building consensus

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Figure 6-9. Unit summary

Review questions

1. True or False?

Playback 0 validation is accomplished through a review session with all business stakeholders, business users, and the IBM BPM development team.

2. Validation leads to the switch from _____ modeling to _____ modeling.

- A. Data . . . deployment
- B. Analytical . . . validation
- C. Analytical . . . executable

3. The objective of _____ is to review all process flow, normal and conditional, and model specifics, like participants, activities, and process control.

- A. Playback 0 validation
- B. Analytical modeling
- C. Descriptive modeling
- D. Definition

Figure 6-10. Review questions

Write your answers here:

1.

2.

Review answers

- 1. True.**
- 2. C:** Analytical to executable.
- 3. A:** Playback 0 validation.

Playback 0: Building consensus

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Figure 6-11. Review answers

The slide features a blue header bar with 'IBM Training' on the left and the IBM logo on the right. Below the header is a large, light blue diagonal striped background area. In the center of this area, the title 'Exercise: Validating the process model' is displayed in a bold, dark blue font. At the bottom of the slide, there is a small copyright notice: '© Copyright IBM Corporation 2016' followed by 'Course materials may not be reproduced in whole or in part without the prior written permission of IBM.'

Figure 6-12. *Exercise: Validating the process model*

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 stage completed the process discovery stage. The initial process model was built and then analyzed for improvement.

Your activity responsibility is to conduct a final process model validation, and then take the feedback and refine your process.

You first walk through the playback with your instructor and then break into groups to implement the additional process requirements.

New process requirements:

During Playback 0, the vice president mentions that there are some recent issues with several job postings that contain wording that violates a new set of hiring laws. To address this issue, the vice president suggests that a lawyer reviews every job post. The lawyer checks for legal compliance (and edits if necessary) at some point before the job opening is released and posted to the public.

Exercise objectives

After completing this exercise, you should be able to:

- Validate that the business process reflects the intended requirements
- Implement the requirements with Playback feedback and new process requirements as input

Figure 6-13. Exercise objectives

Unit 7. Course summary

Estimated time

00:30

Overview

This unit summarizes the course and provides information for future study.

Unit objectives

- 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

Course summary

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Figure 7-1. Unit objectives

Course objectives

- Describe why process modeling is an important phase in the BPM lifecycle
- Create structured and unstructured processes (formerly Case) by using the web Process Designer
- Explain how to use Process Designer to create a process application
- List and identify the core elements that are used to create a process in the web Process Designer
- Translate workflow steps into business process activities and nested processes
- Use gateways to control the process flow
- Validate that the process model meets Playback 0 goals and requirements

Course summary

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Figure 7-2. Course learning objectives

To learn more on the subject

- IBM Training website:
 - www.ibm.com/training
- Training paths:
 - <http://www.ibm.com/services/learning/ites.wss/us/en?pageType=page&c=a0003096>
- IBM Redbooks:
 - www.redbooks.ibm.com
- To stay informed about IBM training, go to the following sites:
 - IBM Training News: <http://bit.ly/IBMTainEN>
 - YouTube: youtube.com/IBMTtraining
 - Facebook: facebook.com/ibmtraining
 - Twitter: twitter.com/websphere_edu

Figure 7-3. To learn more on the subject

Enhance your learning with IBM resources

Keep your IBM Cloud skills up-to-date

- IBM offers resources for:
 - Product information
 - Training and certification
 - Documentation
 - Support
 - Technical information



- To learn more, see the IBM Cloud Education Resource Guide:
 - www.ibm.biz/CloudEduResources

Course summary

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Figure 7-4. Identify other IBM Training courses

The next course in the sequence is:

Process Implementing with IBM Business Process Manager Standard v8.5.7 - II

The course objectives include:

- Describe IBM Business Process Manager topology considerations and typical system configurations
- Use the REST API tester to integrate with external systems
- Integrate with a Content Management Interoperability Services (CMIS) system and use content events in a process
- Translate a coach into numerous languages through localization
- Design an IBM Business Process Manager data architecture for a process application with complex business data
- Model all decision authority for a process and employ complex logic for task routing and assignments
- Construct complex task and process task-to-task interaction controls
- Identify and solve common integration issues

Unit summary

- 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

Course summary

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Figure 7-5. Unit summary

IBM Training 

Course completion

You have completed this course:
Process Modeling with IBM Business Process Manager
Standard V8.5.7

Any questions?



Course summary

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Figure 7-6. Course completion

Appendix A. IBM BPM on Cloud

Estimated time

00:00

Overview

In this unit, you learn about BPM on Cloud.

References

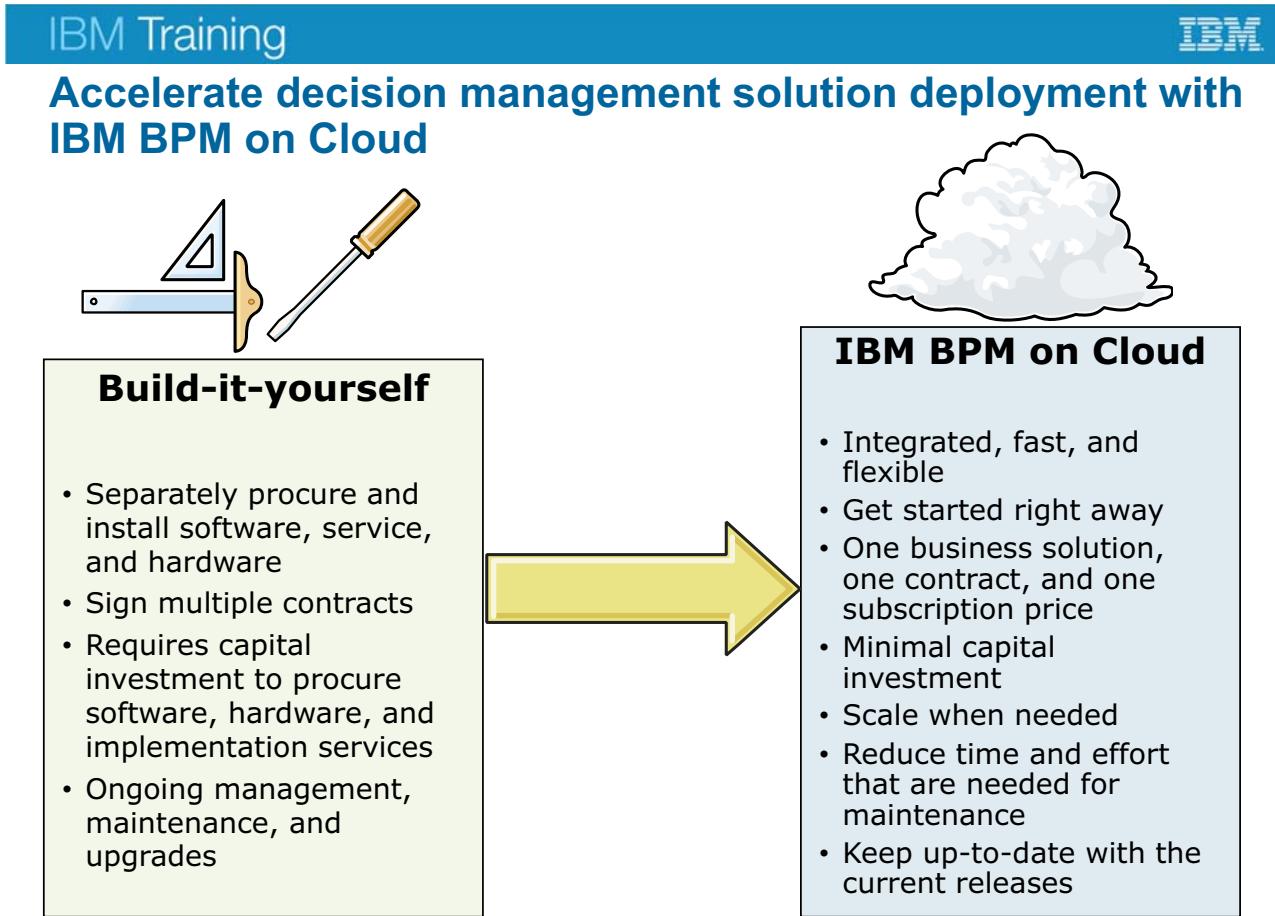
Introduction to IBM BPM on Cloud

- Enterprise-grade BPM cloud service for development, testing, and production
- Cloud-based, collaborative, and role-based environment
 - Capture, automate, and manage frequently occurring, repeatable rules-based business decisions
- Ready-to-use development, test, and production environments are available
- Monthly subscription plans
- Available exclusively on IBM Cloud infrastructure
 - As of 2015, over 25 data centers are available worldwide
- Managed by IBM
- Artifacts that are created with IBM BPM on Cloud are compatible with IBM BPM on-premises product

IBM BPM on Cloud

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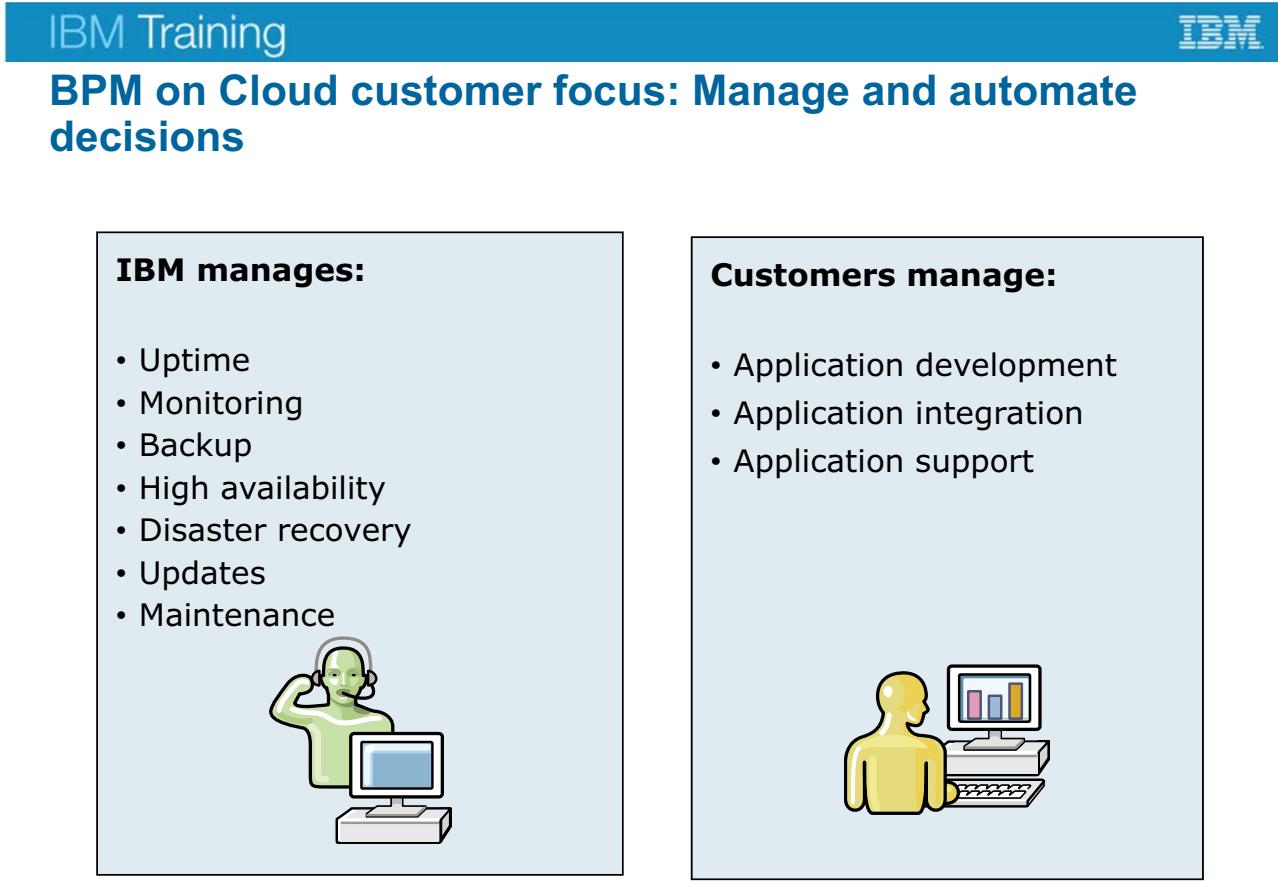
Figure 8-1. Introduction to IBM BPM on Cloud



IBM BPM on Cloud

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Figure 8-2. Accelerate decision management solution deployment with IBM BPM on Cloud



IBM BPM on Cloud

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Figure 8-3. BPM on Cloud customer focus: Manage and automate decisions

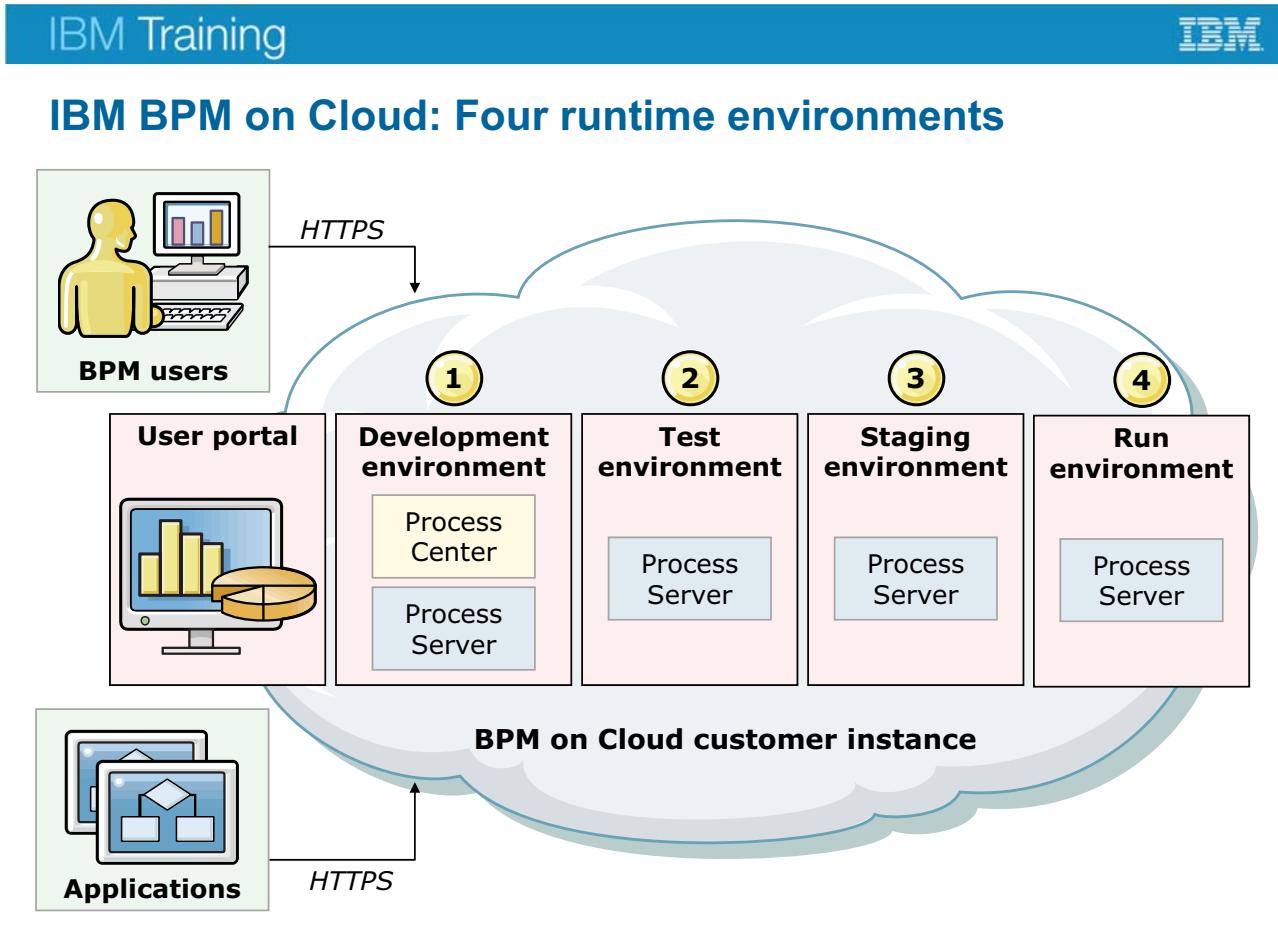


Figure 8-4. IBM BPM on Cloud: Four runtime environments

IBM BPM on Cloud provides four runtime environments for process development:

1. Development
2. Test
3. Staging
4. Run

In this diagram:

- **BPM users** include developers, business analysts, business users, and rule authors who access the Process Designer, Rule Designer, and the other various user consoles.
- **Applications** are applications that call services.



IBM BPM on Cloud free trial

- Free 30-day trial for IBM BPM on Cloud is available
- Go to the following website and click **Try for free** to sign up:
<https://www.bpm.ibmcloud.com/#home>



IBM BPM on Cloud

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Figure 8-5. IBM BPM on Cloud free trial



Activating access and logging in to IBM BPM on Cloud

- Welcome email includes the following information:
 - Link to activate BPM on Cloud access
 - Link to BPM on Cloud instance
- Activation link is tied to a specific email
- After activating access, you can log in to your BPM on Cloud instance



IBM BPM on Cloud

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Figure 8-6. Activating access and logging in to IBM BPM on Cloud

IBM Training

IBM BPM on Cloud user portal (1 of 2)

- Access from home page to an array of tools in three environments:
 - Development

Development Environment

Process Center Install and run process applications, store performance data, and manage running instances of process applications on the Process Center servers. Launch More info Available Downloads (2) IBM® Process Designer IBM® Integration Designer	REST UI Prototype IBM BPM REST resources and their associated parameters. Launch More info	Process Portal Collaborate on tasks and view the performance of individuals, teams, and processes on dashboards. Launch More info	Process Admin Console Manage the Process Center server and the process servers in your runtime environments. Launch More info
Tech Preview: Responsive Federated Portal Technical demonstrations of Responsive Federated Portal and Responsive Coach Toolkit as a sample Launch More info	Business Process Choreographer Explorer Monitor and manage BPEL processes. The BPC Explorer provides a number of views that show process and task metadata. Launch More info	Business Rules Manager Manage business rules Launch More info	

IBM BPM on Cloud

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Figure 8-7. IBM BPM on Cloud user portal (1 of 2)



IBM BPM on Cloud user portal (2 of 3)

- Access from home page to an array of tools in three environments:
 - Test

Test Environment

Process Portal  Collaborate on tasks and view the performance of individuals, teams, and processes on dashboards. Launch More info	Process Admin Console  Manage the Process Center server and the process servers in your runtime environments. Launch More info	Tech Preview: Responsive Federated Portal  Technical demonstrations of Responsive Federated Portal and Responsive Coach Toolkit as a sample Launch More info	Business Process Choreographer Explorer  Monitor and manage BPEL processes. The BPC Explorer provides a number of views that show process and task metadata Launch More info
Business Rules Manager  Manage business rules. Launch More info			

IBM BPM on Cloud

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Figure 8-8. IBM BPM on Cloud user portal (2 of 3)

IBM Training

IBM BPM on Cloud user portal (3 of 3)

- Access from home page to an array of tools in three environments:
 - Production Runtime Operating

Process Runtime Operating Environment

Process Portal Collaborate on tasks and view the performance of individuals, teams, and processes on dashboards. Launch More info	Process Admin Console Manage the Process Center server and the process servers in your runtime environments. Launch More info	Tech Preview: Responsive Federated Portal Technical demonstrations of Responsive Federated Portal and Responsive Coach Toolkit as a sample Launch More info	Business Process Choreographer Explorer Monitor and manage BPEL processes. The BPC Explorer provides a number of views that show process and task metadata Launch More info
Business Rules Manager Manage business rules Launch More info			

IBM BPM on Cloud

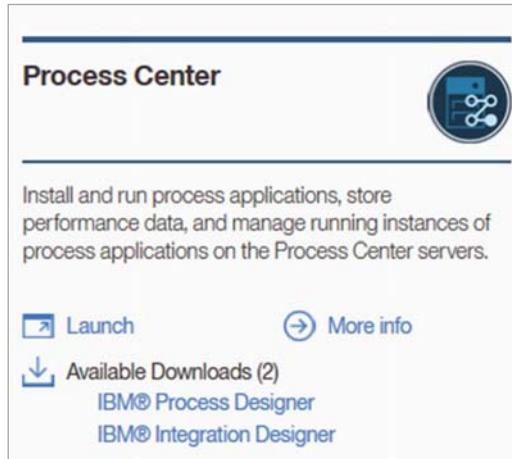
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Figure 8-9. IBM BPM on Cloud user portal (3 of 3)



Using the IBM Process Designer (1 of 3)

- Download a version of Process Designer that is configured for use with IBM BPM on Cloud
- Start Process Designer by double-clicking `eclipse.exe`



IBM BPM on Cloud

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Figure 8-10. Using the IBM Process Designer (1 of 3)

IBM Training

Using the IBM Process Designer (2 of 3)

Common

- Name: Hiring Sample Advanced
- Acronym: HSAV1
- Description: This sample shows the SCA integration of a BPEL process to identify a number of job candidates from simulated backend HR systems

Exposed Items

- Business Process Definitions: Open New Position
- Heritage Human Services: <none>
- Client-Side Human Services: <none>
- Web Services:

- Features and user interface similar to on-premises
- Automatically connected to Cloud Process Center and Process Server

IBM BPM on Cloud

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Figure 8-11. Using the IBM Process Designer (2 of 3)

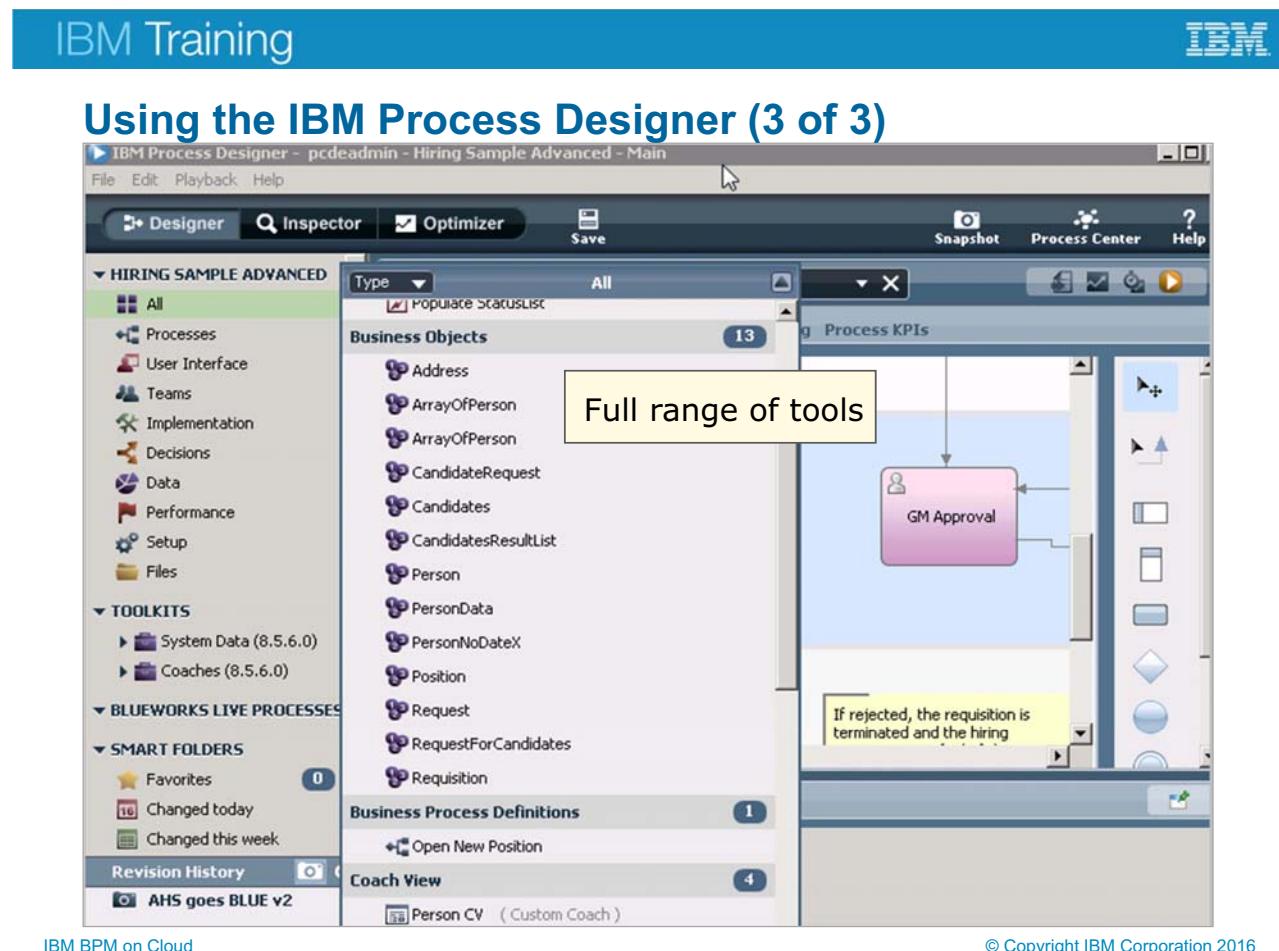


Figure 8-12. Using the IBM Process Designer (3 of 3)

The screenshot shows the IBM Process Center interface. At the top, there's a blue header bar with the text "IBM Training" on the left and the "IBM" logo on the right. Below the header is a main content area with a dark blue header bar containing navigation links: "Process Apps", "Toolkits", "Servers", and "Admin". To the right of these are "Preferences", "Logout", and a search bar. The main content area has a light blue background. It displays two process applications listed under "Sort By: Recently Updated": "Hiring Sample Advanced (HSAV)" and "Account Verification Skeleton (AVS)". Each entry includes a small icon, the application name, a star rating, and a link to "Open in Case Designer". On the far right, there's a vertical sidebar with several options: "Create New Process App", "Import Process App", "Download Process Designer", "Download MobileFirst Adapter", and "Launch Getting Started". At the bottom right of the sidebar is the "IBM | Process Center" logo.

IBM BPM on Cloud

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Figure 8-13. Using the IBM Process Center (1 of 3)

IBM Training

Using the IBM Process Center (2 of 3)

- Cloud-based Case Designer

The screenshot shows the IBM Process Center Designer interface. On the left, there's a sidebar with 'DESIGNER' and 'INSPECTOR' tabs, and a tree view under 'Account Verification Skeleton' with 'Cases' selected. The main area is titled 'MyHiringCase' and contains tabs for 'Overview', 'Activities', 'Variables', 'Folders', and 'Views'. The 'Overview' tab is active. It displays common details like 'Name: MyHiringCase', 'Modified: fe (Feb 4, 2016 1:57:33 PM)', and a 'Documentation:' section with rich text editing tools. There are sections for 'Advanced', 'Exposing', 'Team', and 'Starting Document'. The 'Starting Document' section shows 'Starting document type: <none>' with 'Select...', 'New...', and 'X' buttons. The bottom right corner of the interface has a copyright notice: '© Copyright IBM Corporation 2016'.

IBM BPM on Cloud

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Figure 8-14. Using the IBM Process Center (2 of 3)

The screenshot shows the IBM Process Center interface. At the top, there's a blue header bar with the text "IBM Training" on the left and the "IBM" logo on the right. Below the header is a main navigation bar with tabs: "Process Apps", "Toolkits", "Servers", and "Admin". The "Servers" tab is currently selected. Underneath the navigation bar, there's a sub-menu for "Account Verification Skeleton (AVS)" with options like "Snapshots", "History", "Manage", and "Governance". The "Snapshots" tab is highlighted. On the left side of the main content area, there's a list of snapshots. One snapshot is highlighted in green: "Skeleton Rewired (SR) (New)". It has a note below it saying "Not Yet Installed to Process Server". To the right of this list is a modal dialog titled "Install Snapshot to Server". The dialog asks "Select a server to install snapshot Skeleton Rewired to:". Inside the dialog, there are two server options: "TEST ProcessServer (10.76.89.120)" and "RUN ProcessServer (10.76.89.121)". The "TEST" server is selected, indicated by a green checkmark next to its name.

IBM BPM on Cloud

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Figure 8-15. Using the IBM Process Center (3 of 3)

The screenshot shows two side-by-side views of the IBM Process Portal interface. Both views have a top navigation bar with tabs: 'WO...', 'PROCESS...', 'TEAM PERFORMANCE', and 'PROCESS PERFORMANCE'. The left view shows a 'My Work' dashboard with a 'My Tasks' section containing a red warning icon and the text 'Step: Enter Applicant Info Acquire Customer For LOB Life Policy VI'. The right view shows a specific process step titled 'Step: Submit job requisition'. This step is divided into several sections: 'Job requisition data' (Requester: Request number 1140, Hiring Manager Roland Peisl; Requested job position: Employment status, Department, Number of employees required 1; Requested job start date and location: Planned date of job start 2/4/2016, Location); 'Position data' (Position type, Job title Head of Product Development); and 'Make your decision' (Next button). The overall theme is blue and white.

IBM BPM on Cloud

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Figure 8-16. Using the IBM Process Portal



Finding help for IBM BPM on Cloud

- **IBM Knowledge Center for IBM BPM on Cloud**

http://www.ibm.com/support/knowledgecenter/SS964W/ditamaps/_product_welcome_oncloud.html

- Complete product documentation for IBM BPM on Cloud, including a “Getting Started” tutorial
- IBM BPM on Cloud user portal also has direct links to the documentation

- **IBM BPM Support Portal**

<https://www.ibm.com/support/entry/portal/product/websphere>

- Support Portal provides tools and resources for help with IBM Business Process Manager
- Open service requests, view fix lists, access community resources, and more

Figure 8-17. Finding help for IBM BPM on Cloud

Appendix B. List of abbreviations

A

Ajax	Asynchronous JavaScript and XML
AMD	Asynchronous Module Definition
APAR	authorized program analysis report
API	application programming interface

B

B2B	business-to-business
BAL	Business Action Language
BPD	business process definition
BPD	business process diagram (used primarily in Blueworks Live)
BPEL	Business Process Execution Language
BPM	business process management
BPMN	Business Process Model and Notation
BPMS	business process management system
BWL	Blueworks Live

C

CICS	Customer information Control System
CMIS	Content Management Interoperability Services
CRM	customer relationship management
CS	coach service
CSS	Cascading Style Sheet

D

DB	database
DB2	Database 2

E

EJB	Enterprise JavaBeans
ENV	environment variable
EPV	exposed process variable

ERP enterprise resource planning

ES enabling service

ESB enterprise service bus

G

GB gigabyte

GEX General Exception Handling Toolkit

GUI graphical user interface

H

HR human resources

HS human service

HTML Hypertext Markup Language

HTTP Hypertext Transfer Protocol

HTTPS Hypertext Transfer Protocol Secure

I

IBM BPM IBM Business Process Manager

I/O input/output

IP Internet Protocol

IT information technology

J

J2C J2EE Connector architecture

J2EE Java 2 Platform, Enterprise Edition

JAR Java archive

JCR Java Content Repository

JDBC Java Database Connectivity

JMS Java Message Service

JNDI Java Naming and Directory Interface

JS JavaScript

JSON JavaScript Object Notation

JVM Java virtual machine

K

KPI key performance indicator

L

LAN	local area network
LDAP	Lightweight Directory Access Protocol

N

NVP	name-value pair
------------	-----------------

O

OASIS	Organization for the Advancement of Structured Information Standards
ODM	Operational Decision Manager
OMG	Object Management Group
OS	operating system

P

PaaS	platform as a service
PC	Process Center
PDF	Portable Document Format
PDW	Performance Data Warehouse
PI	Project Interchange
POJO	plain old Java object
PS	Process Server

R

RACI	responsible, accountable, consulted, informed
RAD	rapid application development
REST	Representational State Transfer
RUP	Rational Unified Process

S

SaaS	software as a service
SCA	Service Component Architecture
SDK	software development kit
SIPOC	suppliers, inputs, process, outputs, customers
SLA	service level agreement
SME	subject matter expert
SMTP	Simple Mail Transfer Protocol

SOA	service-oriented architecture
SOAP	A lightweight, XML-based protocol for exchanging information in a decentralized, distributed environment. Usage note: SOAP is not an acronym; it is a word (formerly an acronym for Simple Object Access Protocol)
SQL	Structured Query Language
SSL	Secure Sockets Layer
SSO	single sign-on
T	
TS	task service
U	
UCA	undercover agent
UI	user interface
UML	Unified Modeling Language
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
V	
VM	virtual machine
W	
W3C	World Wide Web Consortium
WECBT	WebSphere Education Coach Bonus Toolkit
WS	web services
WSDL	Web Services Description Language
WYSIWYG	what you see is what you get
X	
XML	Extensible Markup Language
XPath	XML Path Language
XSD	XML Schema Definition

Appendix A. Resource guide

Completing this IBM Training course is a great first step in building your IBM Middleware skills. Beyond this course, IBM offers several resources to keep your Middleware skills on the cutting edge. Resources available to you range from product documentation to support websites and social media websites.

Training

- **IBM Training website**
 - Bookmark the IBM Training website for easy access to the full listing of IBM training curricula. The website also features training paths to help you select your next course and available certifications.
 - For more information, see: <http://www.ibm.com/training>
- **IBM Training News**
 - Review or subscribe to updates from IBM and its training partners.
 - For more information, see: <http://www.ibm.com/blogs/ibm-training>
- **IBM Certification**
 - Demonstrate your mastery of IBM Middleware to your employer or clients through IBM Professional Certification. Middleware certifications are available for developers, administrators, and business analysts.
 - For more information, see: <http://www.ibm.com/certify>
- **Training paths**
 - Find your next course easily with IBM training paths. Training paths provide a visual flow-chart style representation of training for many IBM products and roles, including developers and administrators.
 - For more information, see:
<http://www-304.ibm.com/jct03001c/services/learning/ites.wss/us/en?pageType=page&c=a003096>

Social media links

Connect with IBM Middleware Education and IBM Training, and learn about the latest courses, certifications, and special offers by seeing any of the following social media websites.

- **Twitter**
 - Receive concise updates from Middleware Education a few times each week.
 - Follow Middleware Education at: twitter.com/IBMCLOUDedu

- **Facebook:**

- Follow IBM Training on Facebook to keep in sync with the latest news and career trends, and to post questions or comments.
- Find IBM Training at: facebook.com/ibmtraining

- **YouTube:**

- See the IBM Training YouTube channel to learn about IBM training programs and courses.
- Find IBM Training at: youtube.com/IBMTTraining

Support

- **Middleware Support portal**

- The Middleware Support website provides access to a portfolio of downloadable support tools, including troubleshooting utilities, product updates, drivers, and Authorized Program Analysis Reports (APARS). The Middleware Support website also provides links to online Middleware communities and forums for collaboratively solving issues. You can now customize the IBM Support website by adding or deleting portlets to show the most important information for the IBM products that you work with.
- For more information, see: <http://www.ibm.com/software/websphere/support>

- **IBM Support Assistant**

- The IBM Support Assistant is a local serviceability workbench that makes it easier and faster for you to resolve software product issues. It includes a desktop search component that searches multiple IBM and non-IBM locations concurrently and returns the results in a single window, all within IBM Support Assistant.
- IBM Support Assistant includes a built-in capability to submit service requests; it automatically collects key problem information and transmits it directly to your IBM support representative.
- For more information, see: <http://www.ibm.com/software/support/isa>

- **IBM Education Assistant**

- IBM Education Assistant is a collection of multimedia modules that are designed to help you gain a basic understanding of IBM software products and use them more effectively. The presentations, demonstrations, and tutorials that are part of the IBM Education Assistant are an ideal refresher for what you learned in your IBM Training course.
- For more information, see: <http://www.ibm.com/software/info/education/assistant/>

Middleware documentation and tips

- **IBM Redbooks**

- The IBM International Technical Support Organization develops and publishes IBM Redbooks publications. IBM Redbooks are downloadable PDF files that describe

installation and implementation experiences, typical solution scenarios, and step-by-step “how-to” guidelines for many Middleware products. Often, Redbooks include sample code and other support materials available as downloads from the site.

- For more information, see: <http://www.ibm.com/redbooks>
- **IBM documentation and libraries**
 - IBM Knowledge Centers and product libraries provide an online interface for finding technical information on a particular product, offering, or product solution. The IBM Knowledge Centers and libraries include various types of documentation, including white papers, podcasts, webcasts, release notes, evaluation guides, and other resources to help you plan, install, configure, use, tune, monitor, troubleshoot, and maintain Middleware products. The Knowledge Center and library are located conveniently in the left navigation on product web pages.
- **developerWorks**
 - IBM developerWorks is the web-based professional network and technical resource for millions of developers, IT professionals, and students worldwide. IBM developerWorks provides an extensive, easy-to-search technical library to help you get up to speed on the most critical technologies that affect your profession. Among its many resources, developerWorks includes how-to articles, tutorials, skill kits, trial code, demonstrations, and podcasts. In addition to the Middleware zone, developerWorks also includes content areas for Java, SOA, web services, and XML.
 - For more information, see: <http://www.ibm.com/developerworks>

Services

- IBM Software Services for Middleware are a team of highly skilled consultants with broad architectural knowledge, deep technical skills, expertise on suggested practices, and close ties with IBM research and development labs. The Middleware Services team offers skills transfer, implementation, migration, architecture, and design services, plus customized workshops. Through a worldwide network of services specialists, IBM Software Service for Middleware makes it easy for you to design, build, test, and deploy solutions, helping you to become an on-demand business.
- For more information, see:
<http://www.ibm.com/services/us/en/it-services/systems/middleware-services/>



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