

# WA1426 WebSphere Business Modeler for Business Process Management



Using WebSphere Business  
Modeler



## Installation Techniques

- You can install WBM as a standalone software.
- This is a safe and simple way to get started. The problem is:
  - If you are also using other Eclipse based products such as Rational Software Architect, you need to constantly switch back and forth or run them at the same time.
- The solution to this problem is to install WBM as a plugin to an existing Eclipse based product.
  - In this mode, all the WBM features are added to an existing product.
- The following Eclipse based products are supported:
  - IBM® WebSphere Integration Developer, Version 6.0.1
  - Rational Software Architect, Version 6.0.1
  - Rational Application Developer, Version 6.0.1
  - Rational Software Modeler, Version 6.0.1
  - Rational Web Developer, Version 6.0.1
  - Rational Performance Tester, Version 6.1.1
  - Rational Functional Tester, Version 6.1.1

If you are using one of the supported software mentioned above, you may choose to install WBM as a plugin to that software.



## The Workspace

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- Various projects that are created within WBM are actually directories in the file system.
  - These directories contain various files created within the project.
- All project folders are created within a single parent folder called the Workspace.
- The Workspace also contains a .metadata directory. This directory contains:
  - Log file for WBM called .log.
  - Various other temporary files required by the tool.
- When you launch WBM, it offers you to select the workspace folder.
- You can switch the workspace folder any time by selecting **File->Switch Workspace**.
- You can certainly work with a single workspace. A large number of projects in a single workspace can slow down the tool. In that case, separate unrelated projects in different workspaces.

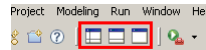


## Launching WBM


- From the start menu, select **Programs->WebSphere Business Modeler->WebSphere Business Modeler.**
- Alternatively, you can open a command line window, change directory to where WBM is installed and issue this command:
  - **modeler.exe**
  - System will ask you to enter a workspace folder name.
- To run WBM using a specific workspace folder
  - `modeler.exe -data d:\wbm6\workspace2`

## The Business Modeling Perspective

- When you launch WBM for the first time, system opens the Business Modeling perspective.
- This perspective has four views
  - Editor area – This is really not a view, but the area where various editors are shown.
  - Attributes – This view shows various properties of the document that is being edited.
  - Project Tree – This view shows the contents of a Business Modeling Project.
  - Outline – This view shows the structure or birds eye view of the document being edited.
- WBM offers three display modes that control which of the four views are actually shown.
  - 1 pane layout – Only the editor area is shown.
  - 2 pane layout – The editor and Attributes view shown.
  - 4 pane layout – All four views are shown.
- Use the layout option from the taskbar



Recall, a perspective is a collection of views. The four views mentioned above are used by default by the Business Modeling perspective. You can add additional views using the **Windows->Show View** menu.



## Business Modeling Project

- A project in WBM is actually a directory in the workspace that contains various files.
- A project is of certain type. For example, a Java project is used to develop Java programs.
  - In WBM, a Business Modeling project is used to create all the Business Process Management (BPM) artifacts (such as business process models and business items).
- You must create a Business Modeling project before you can model any process.
- Items created within a project can only be used by that project.
  - As a result, carefully decide how many different business modeling projects you want to create. For example, if you are consultant, you can create a project for each company.
  - This inability to share modeling elements between projects can cause some duplication of work if you decide to create multiple projects. Consider using Business group feature to solve this problem (discussed later in this chapter).

It is worth noting that WebSphere Integration Developer (WID) allows sharing of modeling elements between projects. In this tool, you can centrally define elements such as Business Items like Order, Address and Customer and use them from many different projects.



## Catalog

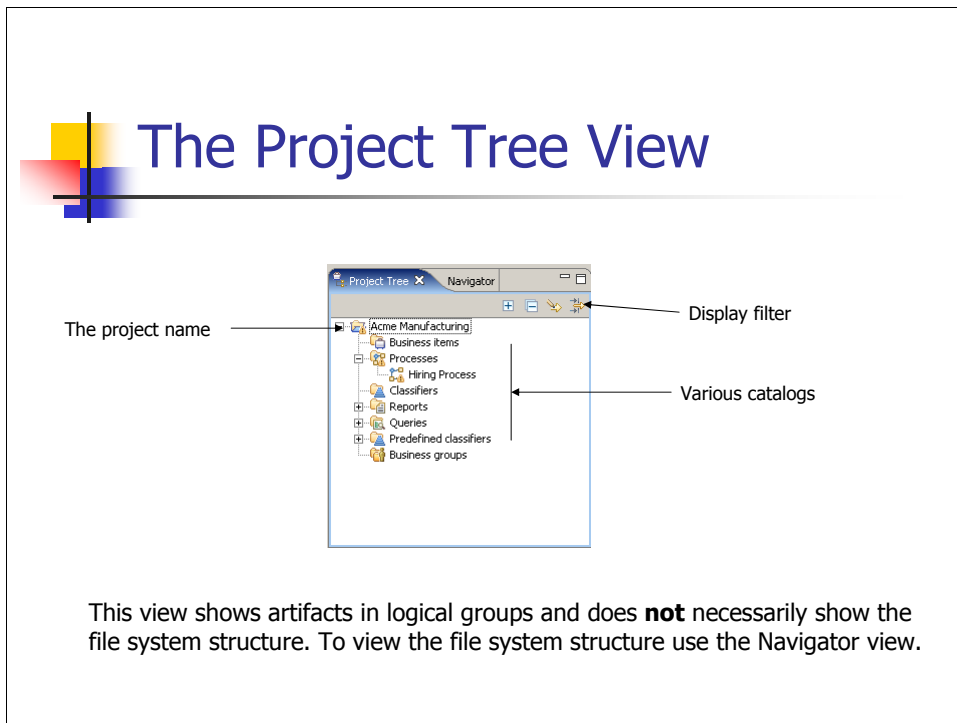
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- A catalog is a grouping of WBM artifacts (or modeling elements) of the same type. Also sometimes referred to as Library.
- The following catalogs can be created.
  - Process catalog – Contains various process models.
  - Data catalog – Contains business items.
  - Classifier catalog – Contains classifiers (discussed later).
  - Report catalog – Contains reports.
  - Query catalog – Contains queries.
  - Organization catalog – Contains various organizations defined.
  - Resource catalog – Contains resources that are defined.
- When a business modeling project is created, system automatically creates a set of catalogs.
  - Business items (Data catalog)
  - Processes (Process catalog). The default name can be changed when the project is created.
  - Classifiers (Classifier catalog)
  - Queries (Query catalog)
- New catalogs can be created later.



## Creating a Project

- Launch WBM. Make sure that the Business Modeling perspective is open.
  - Optionally switch to the 4 pane layout (recommended)
- From the menu bar select **File->New Business Modeling Project**. Enter:
  - The name of the project. Usually the name of a business or department.
  - Default process catalog name.
- Optionally choose to create a new empty business process model inside of the process catalog.
- Click **Next**.
- Choose the default layout for the process editor.
  - Free form
  - Swimlane. If you choose this option, various other options are enabled. They will be discussed later.
- Click on **Finish**.



There are four toolbar buttons shown in the Project Tree view. From left to right, they are:

1. Expand all nodes.
2. Shrink all nodes.
3. Link editor the file. If this is selected, when a file is open in the editor, system automatically expands the nodes and shows the file.
4. Display filter. This allows you to control what elements are shown by the view.



## The File System Structure

- The way the files are stored inside of the project folder is quite different from the way things look in the Project Tree view.
- You should not have to directly work with the files in the file system, but some knowledge of it helps.
- Open the Navigator view to study the file system. A few things to note:
  - A data catalog is created as a folder within the RootInformationModel folder. A business item is created within a data catalog folder.
  - A process catalog is created as a folder within the RootProcessModel folder. A process model is created within a process catalog folder.
  - Similarly, there are other Root\* folders for other catalog types.
- In general, do not directly edit, rename or delete these files. Use the Project Tree view for your editing needs.



## Business Group

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- As discussed earlier, elements defined in a project cannot be used from another project.
  - This makes it difficult to group elements based on organizational units or departments.
- A Business Group can be created within a project to solve this problem.
  - Elements such as process models and business items are physically stored inside a catalog folder. They can be conceptually grouped inside a business group.
- It is recommended that you create a single project for the whole business and business groups for various departments or divisions within the business.

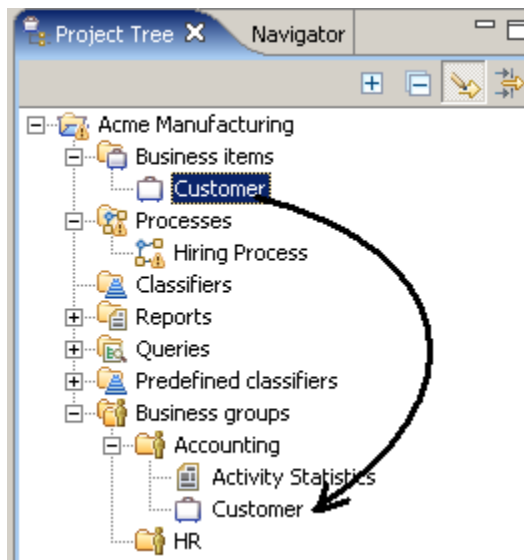


## Creating a Business Group

- First click on the display filter toolbar button of the Project Tree view.
  - Uncheck **Business Groups**.
  - Note, unchecking an item actually makes it visible. This behavior is rather counter intuitive.
- Right click on the project and select **New->Business Group**.
- Enter a name for the group.
  - Usually the name of a department or division.
- Click on **Finish**.
- All business groups are displayed under the **Business groups** node in the Project Tree view.

## Grouping Elements in a Business Group

- First, create an element such as process model or business item within a catalog.
- Then, right click on a business group and select **Add from Library**.
- Select one or more elements from the project (use Control+Click to select multiple items). Then, click **OK**.
- Alternatively, you can simply drag and drop an element on the business group using the Project Tree view.
- All elements are shown directly within a business group. No further grouping inside of a business group is possible.
- A business group and its contents are stored in the .navigation file within the project root.
  - When saving the files in a team repository, make sure that this file is checked in. System may not add file names starting with "." to the repository by default.



You can simply drag and drop an element into the business group



## Exporting Projects

- WBM provides many different formats to export various elements within a project.
- Here, we discuss the method to export the entire project using the WebSphere Business Modeler .ZIP format.
  - In a later chapter, we will discuss how to export specific elements within the project.
- The purpose behind exporting the entire project in a single ZIP file is backing up and sharing with other workstations.
  - Do not use this technique for revision management. Use a proper team repository as we will discuss later.
- Right click on a project and select **Export**.
- Choose the WebSphere Business Modeler .ZIP format. Click on **Next**. Enter:
  - The directory name where the ZIP file will be created.
  - The project that should be exported. The correct project should be selected by default.
  - What do you want to include in the export? You can export all elements or specific elements.
  - The ZIP file name without the .ZIP extension.
- Click on **Finish**. System will create the ZIP file.
- **Note:** Business Groups are not included in the export at this point.

Note that, if you choose to export specific elements, system allows you to choose only one element. You can, however, select an entire catalog. This is the only way to export multiple elements (other than exporting the whole project).



## Importing Projects

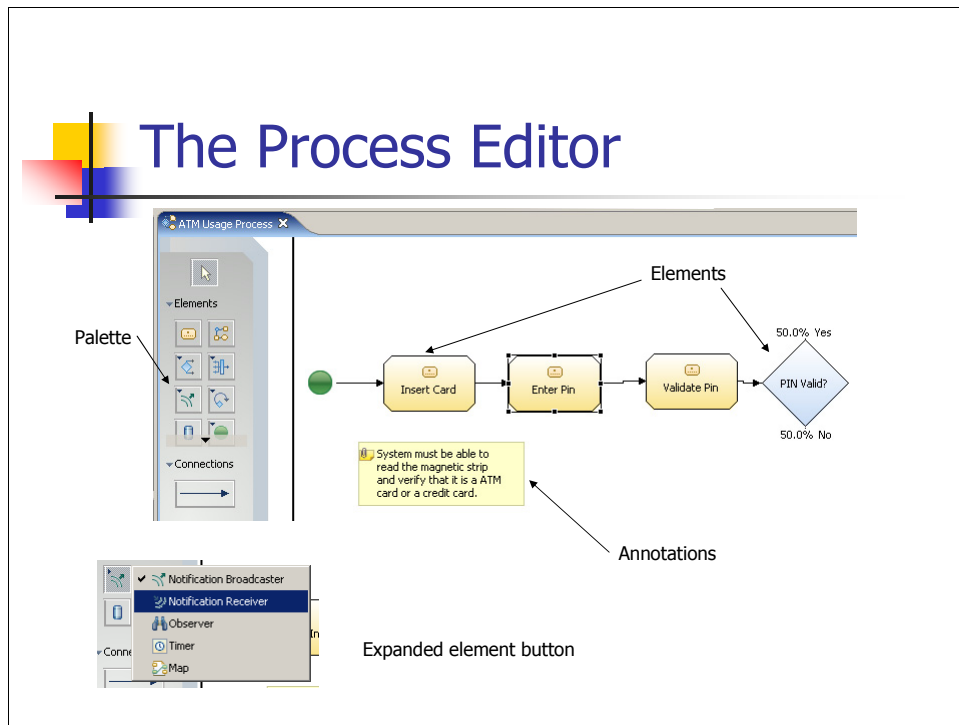
- The ZIP file exported in the previous step can be imported by anyone.
- Only caveat is that the import process does not create a Business Modeling project.
  - You must first create a project and then import the contents of the ZIP file within that project.
  - Ideally this project should have the same name as the exported project but it does not have to be.
- Right click on a project and select **Import**.
- Choose the WebSphere Business Modeler .ZIP format. Click on **Next**. Enter:
  - The directory where the ZIP file exists.
    - System will automatically list the ZIP files that are detected to be valid export files.
- Choose the file and then select the target project. Optionally, decide to exclude simulation results and business measures.
- Click on **Finish**.
- System will create all the elements from the ZIP file within the project.



## Creating a Business Process

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- Here, we will learn the very basics of creating a process.
- Right click on a process catalog (Processes by default) and select **New->Process**. Enter:
  - The name of the process
  - Optionally a short description
- Click on **Finish**.
- System will create the process and open it in the editor.
- At any time, you can double click on the process name to open it in the editor.
- You can **Delete** or **Rename** a process by simply right clicking on it.
  - Do not directly delete or rename files in the file system. This will corrupt the project.



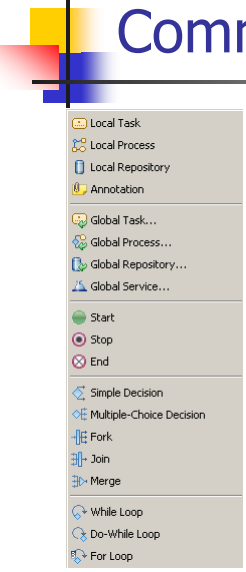
## Using the process editor

Click on an element button on the palette under **Elements**. Some of the element buttons group multiple elements. They have a small black triangle shown on the top left hand side corner. Click on the triangle to show all the elements available.

After you have selected the element, click on the diagram area to add the element. Advanced users can also directly right click on the diagram area and select **New->ELEMENT NAME**. System lists all available elements in the popup menu.

Once several elements have been added, click on the **Connections** button on the palette to connect them. First click on the from element and then click on the to element. This establishes the sequence in which the tasks will be performed.

## Common Elements



1. Start – The first element of a process.
2. Local task – A task performs a specific activity. A local task is defined within the process model.
3. Global task – A task that is actually defined elsewhere in the project.
4. Local process – Allows invocation of a subprocess from a main process.
5. Simple decision - Routes flow to one of two alternate paths based on a condition.
6. Multiple-choice decision – Routes flow to one of many paths based on various conditions.
7. Merge – Resumes the main flow after alternate paths defined as a part of a Simple decision or Multiple-choice decision node have concluded.
8. Fork – Starts multiple parallel paths at the same time.
9. Join – Waits for all paths defined as a part of a Fork to end.
10. While loop – Performs a series of tasks repeatedly until a condition is met.
11. For loop – Performs a series of tasks for a specific number of times.
12. Stop – Ends the process perhaps under error condition.
13. End – The last element of a process.



## Designing Data Structure

- A process needs to work with various data.
  - For example, an order entry process needs to work with Customer, Order, OrderLineItem and Address data.
  - The nouns or things in a business process document usually indicate the type of data the process works with.
- You can model the structure of the data in WBM.
- Right click on a data catalog (Business Items by default) and select **New->Business Item**. Enter the name of the data type (such as Address) and click on **Finish**.
- System opens the item in the editor.
- You can double click on the item name at any time to edit it.

## Designing Data Structure

Name	Type
name	String
mailingAddress	Address
billingAddress	Address
street1	String
street2	String
city	String
ZIP	String
country	String
phone	String
fax	String
cell	String

Click on the **Add** button to add a new attribute to the data type.

Click on the name of an attribute to change it. Click on the **Type** cell. Click on the ... button and select a data type for the attribute. You can pick from a list of simple data types (such as integer or string) or select another business item defined earlier.

In the example above, we are modeling the Customer data type. We have added the name attribute of type string. We have also added a mailingAddress and billingAddress attribute. They are of type Address that was defined before as another business item.

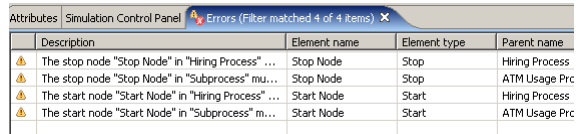
## Using Data From a Process

- An element in the process can hand off certain data to the next element.
- Right click on the connection arrow between two elements and select **Associate Data**.
- Select a simple data type or a predefined business item (complex type). Click on **OK**.
- You can also just select the arrow. Then, from the **Attributes** view, use the **Browse** button next to the **Associate Data** text box to choose the data type.



In the example above, the Enter Pin local task element is passing String data to the Validate Pin task.

## Locate Errors in the Process

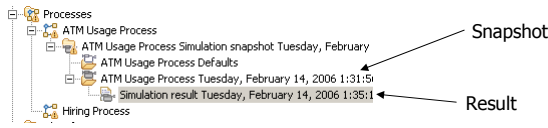


Description	Element name	Element type	Parent name
The stop node "Stop Node" in "Hiring Process" ...	Stop Node	Stop	Hiring Process
The stop node "Stop Node" in "Subprocess" mu...	Stop Node	Stop	ATM Usage Prc
The start node "Start Node" in "Hiring Process" ...	Start Node	Start	Hiring Process
The start node "Start Node" in "Subprocess" m...	Start Node	Start	ATM Usage Prc

1. Use the Errors view to locate any errors in the process. Double click on an error and system will open the process and select the element with the problem.
2. Also, run static analysis to verify the process. In the process editor, right click and select **Static Analysis** and then either **Activities Unable to Start** or **Paths Unable to be Followed**. Note, these static analysis types are available from the process editor only. If you right click on the process in the Project Tree and select Static Analysis, you will not see these options.

## Running Simulations

- You can run the process in a virtual environment.
- First create a simulation snapshot by right clicking on the process in the Project Tree and selecting **Simulate**.
  - Note, this just creates the necessary data (snapshot) to run a simulation but does not actually start the process.
  - A snapshot captures the process model as it exists right now. If you change the process in the future, the snapshot will remain unchanged.
  - System also opens the snapshot in a visual diagram. You can double click on the snapshot at any time to open this diagram.
- From the **Simulation Control Panel** view, click on the play toolbar button to start simulation.
- After the simulation ends, system saves the result under the snapshot node.



The screenshot shows a Project Tree with the following structure:

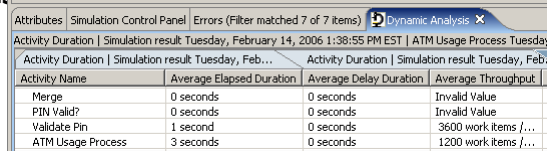
- Processes
  - ATM Usage Process
    - ATM Usage Process Simulation snapshot Tuesday, February (labeled as Snapshot)
    - ATM Usage Process Defaults
      - ATM Usage Process Tuesday, February 14, 2006 1:31:15i (labeled as Result)
      - Simulation result Tuesday, February 14, 2006 1:35:11
  - Hiring Process

We will learn a lot more about simulations later. Here, we learn just the basics. At an early stage, you can use simulation to validate the process and make sure that there are no problems with it.

We have not learned to assign any cost or duration to the tasks. By default, system spends 1 second with each task. The cost is 0.00.

## Viewing Results

- Right click on a result and select **Dynamic Analysis** and then choose one of the analysis available. For example, **Aggregate Analysis->Activity Duration**.
- System will run the analysis and show the result in the **Dynamic Analysis** view.



The screenshot shows a window titled 'Dynamic Analysis' with a table of activity durations. The table has four columns: Activity Name, Average Elapsed Duration, Average Delay Duration, and Average Throughput. The data rows are:

Activity Name	Average Elapsed Duration	Average Delay Duration	Average Throughput
Merge	0 seconds	0 seconds	Invalid Value
PIN Valid?	0 seconds	0 seconds	Invalid Value
Validate Pin	1 second	0 seconds	3600 work items /...
ATM Usage Process	3 seconds	0 seconds	1200 work items /...



## Samples and Tutorials

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- Three sample projects are included with the product
  - ABC project – Contains payment handling and order verification subprocesses. These processes are used from the Customer Order Handling process.
  - ECAM project – Model processes that may be used by an automobile insurance company.
  - Quickstart Finance – Used to complete a tutorial.
- These samples are available as Business Model export ZIP file in <WBM>/samples folder.
- A tutorial with complete steps and movies is shipped with the product.
- To access the tutorial choose **Help->Modeler Help**. Then, expand **Samples and tutorials**.