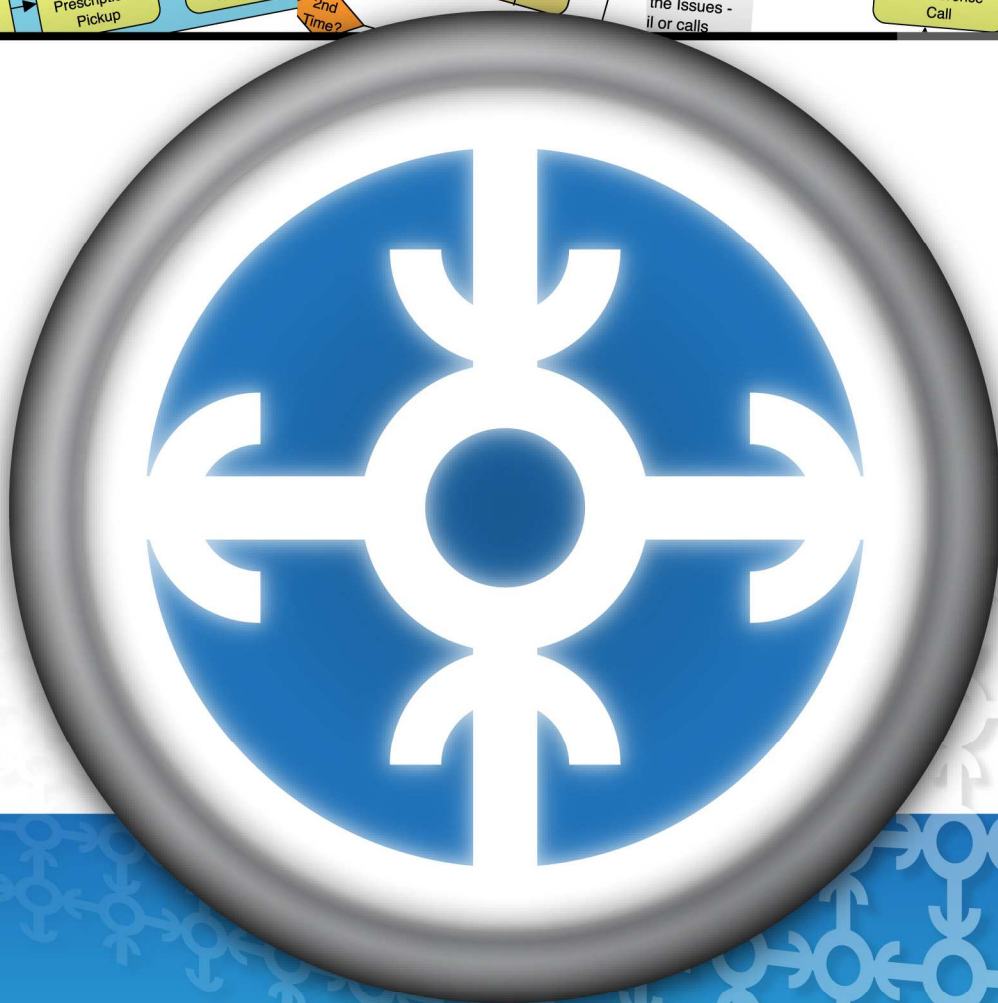
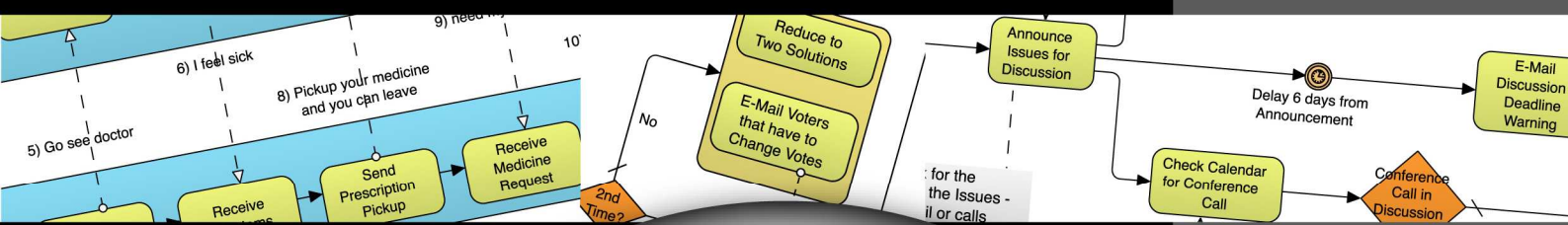


# Business Process Visual ARCHITECT User's Guide

**Easy and Intelligent Business Process Modeler**





## Business Process Visual ARCHITECT 2.0 User's Guide

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## Table of Contents

### Chapter 1 - Introduction to Business Process Visual ARCHITECT

What is Business Process Visual ARCHITECT™ .....	1 -2
Intuitive User Interface .....	1 -2
Complete BPMN Specification and Notation Support .....	1 -3
Intelligent Notation Validation and Modeling Assistance .....	1 -3
Installation .....	1 -4
Installing Business Process Visual ARCHITECT .....	1 -4
Starting Business Process Visual ARCHITECT .....	1 -5
User Interface .....	1 -5
Diagram Pane .....	1 -6
Diagram Navigator .....	1 -6
Model .....	1 -7
Property .....	1 -7
Diagram Overview .....	1 -7
Documentation .....	1 -8

### Chapter 2 - Drawing Business Process Diagram

Creating Business Process Diagram .....	2 -2
Creating Element .....	2 -3
Creating Element using Toolbar .....	2 -3
Creating Element using Context Menu .....	2 -4
Creating Element using Mouse Gesture .....	2 -5
Creating Element using Resource-Centric Interface .....	2 -6
Editing Element .....	2 -7
In-Place Editing .....	2 -7
Specification Dialog Box .....	2 -8
Property Pane .....	2 -8
Documentation .....	2 -9
Advanced Diagramming Techniques .....	2 -9
Advanced Usages of Resource-Centric Interface .....	2 -9
Sweeper .....	2 -10
Forming Sub-Process from Existing Elements .....	2 -11
Creating Group for Existing Elements .....	2 -11
Invalid Connections Detection .....	2 -12
Choosing Different Caption Placements .....	2 -12
Choosing Different Connector Styles .....	2 -13
Changing Styles and Formatting .....	2 -15
Incorporating User-Defined Images .....	2 -20

### Chapter 3 - Drawing Data Flow Diagram

Creating Data Flow Diagram .....	3 -2
Data Flow Diagram Elements .....	3 -3
Process .....	3 -3
External Entity .....	3 -4
Data Store .....	3 -4
Data Flow .....	3 -5
Decomposing a Process .....	3 -5

### Chapter 4 - Printing Diagram

Print Preview .....	4 -2
Printing Diagrams with Preview .....	4 -3
Page Setup .....	4 -4
Adjusting Margins .....	4 -4
Zooming Pages .....	4 -5
Selecting the Preview Layout .....	4 -5
Setting Paper Place Style .....	4 -6
Fit to Ratio .....	4 -7
Fit to Pages .....	4 -7
Setting the Diagram Overlap Percentage .....	4 -8

Showing/Hiding Clip Marks on Page .....	4 -8
Editing Header/Footer of the Pages .....	4 -9
The Multiple Page Mode.....	4 -10
Printing Diagrams with Quick Print .....	4 -10

## **Chapter 5 - Copying and Exporting Diagrams**

Copy .....	5 -2
Default Copy .....	5 -2
Copying within BPVA .....	5 -2
Copying to the Clipboard as OLE.....	5 -3
Copying to the Clipboard as Image (JPG) .....	5 -3
Copying to the Clipboard as Image (EMF).....	5 -3
Paste .....	5 -3
Pasting Copied Diagram Elements.....	5 -4
Pasting as Image Shape.....	5 -4
Exporting Diagram as Images .....	5 -5
Exporting the Active Diagram as an Image .....	5 -5
Exporting Diagrams as Images .....	5 -5
Exporting and Importing (Merging) of Project.....	5 -7
Exporting Project .....	5 -7
Importing (Merging) a BP-VA Project .....	5 -8

## **Chapter 6 - Business Process Diagram Samples**

Retail Company .....	6 -2
Problem Statement .....	6 -2
Business Process Diagram .....	6 -2
Car Rental Process.....	6 -2
Problem Statement .....	6 -2
Business Process Diagram .....	6 -3
Software Helpdesk.....	6 -3
Problem Statement .....	6 -3
Business Process Diagram .....	6 -3
Online Store.....	6 -3
Problem Statement .....	6 -3
Business Process Diagram .....	6 -4

# 1

## Introduction to Business Process Visual ARCHITECT

**Business Process Visual ARCHITECT (BP-VA)** is a visual modeling tool that provides the most extensive support for the **Business Process Modeling Notation (BPMN)** – a widely used business process notation that is intuitive to business users yet able to represent complex process semantics.

In this chapter:

- ◆ What is Business Process Visual ARCHITECT?
- ◆ Installation
- ◆ User Interface

# Chapter 1 - Introduction to Business Process Visual ARCHITECT

## What is Business Process Visual ARCHITECT™

Business Process Visual ARCHITECT (BP-VA) is a visual modeling tool that provides the most extensive support for the Business Process Modeling Notation (BPMN) - a widely used business process notation that is intuitive to business users yet able to represent complex process semantics.

More than just a BPMN diagramming tool, BP-VA offers the following key benefits to make business process modeling faster, better and easier:

## Intuitive User Interface

In BP-VA, project resources and modeling facilities are well-organized in dockable windows (Diagram Navigator, Model, Property, etc), you can show/hide and re-arrange the windows to create your favorite modeling environment.

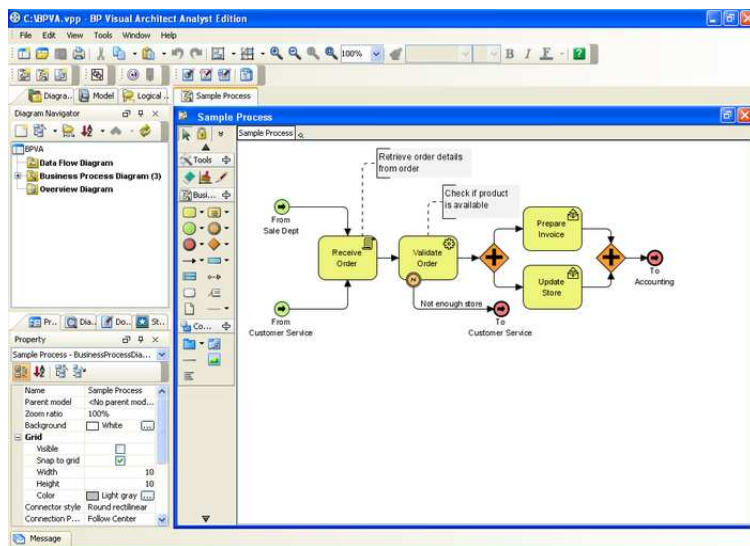


Figure 1.1 - User Interface of BP-VA

Most modeling or diagramming operations can be carried out quickly by in-place editing, context menu or through the property table. This saves you a dramatic amount of time compared to using modal dialog boxes in traditional diagramming tools.

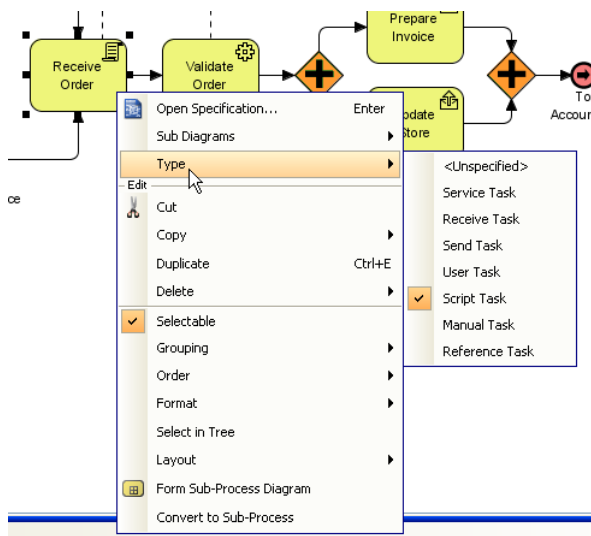


Figure 1.2 - Context menu



To make diagramming and modeling even more efficient, BP-VA adopts the resource-centric interface, where context-sensitive shortcut buttons (hereafter referred as "resource" ) will be shown around the active diagram element. Each resource provides a functionality that you would likely to perform frequently, like creating a connection to a new/existing shape, opening the model specification, resizing a shape to fit. Since the resources are shown around the active diagram element, you can save considerable time and mouse move to access the menu bar or toolbar for the desired functionality.

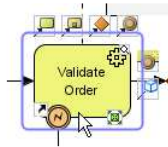


Figure 1.3 - Resource-centric interface

## Complete BPMN Specification and Notation Support

BP-VA completely covers the latest Business Process Modeling Notation (BPMN), from model specification to graphical notation, including different presentation options. You can easily model your business process by drawing Business Process Diagrams and present them to your business partners that understand BPMN.

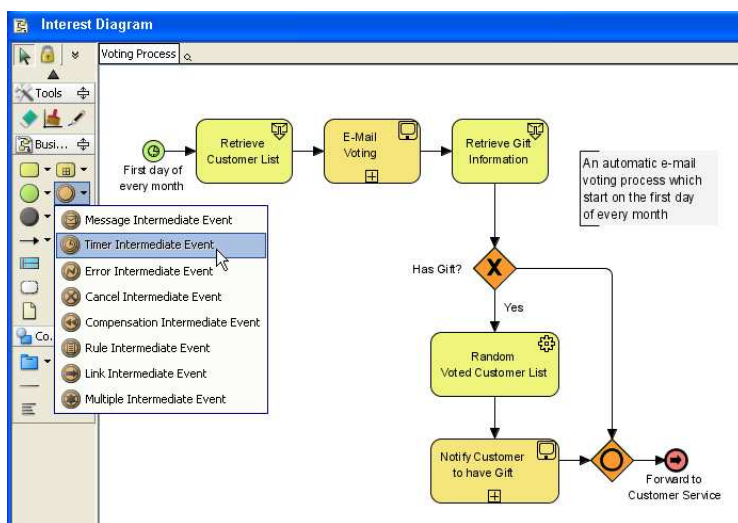


Figure 1.4 - Complete BPMN specification and notation support

## Intelligent Notation Validation and Modeling Assistance

To ensure you are always on the right track, BP-VA provides intelligent notation validation while you are editing the diagrams. Warning sign will be shown on the diagram if you try to make an invalid connection between shapes. When shapes are moved between pools that caused invalid business flows, those invalid flows are analyzed and displayed, with suggested quick fixes for you to quickly correct the problems.

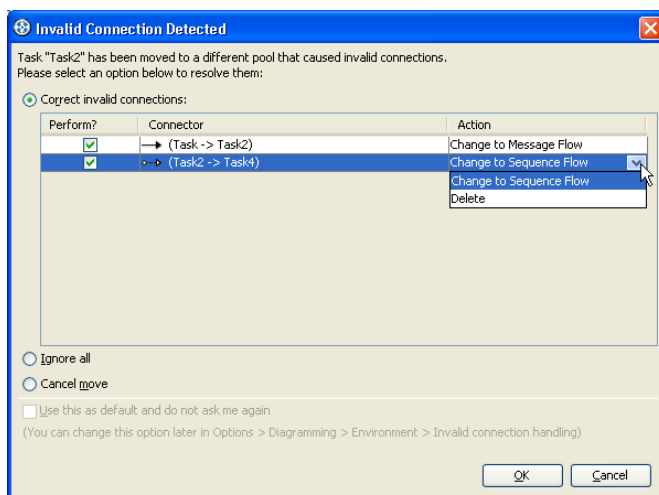


Figure 1.5 - Invalid Connection Detected dialog box

# Installation

## Installing Business Process Visual ARCHITECT

Run the BP-VA installer.

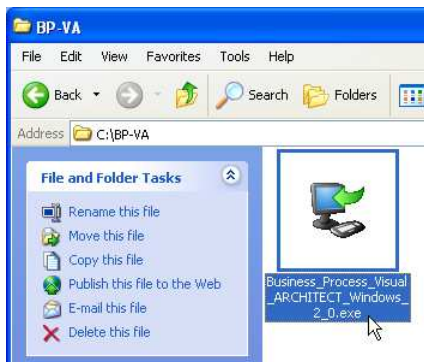


Figure 1.6 - The BP-VA installer

1. In the welcome screen, click **Next** to continue.

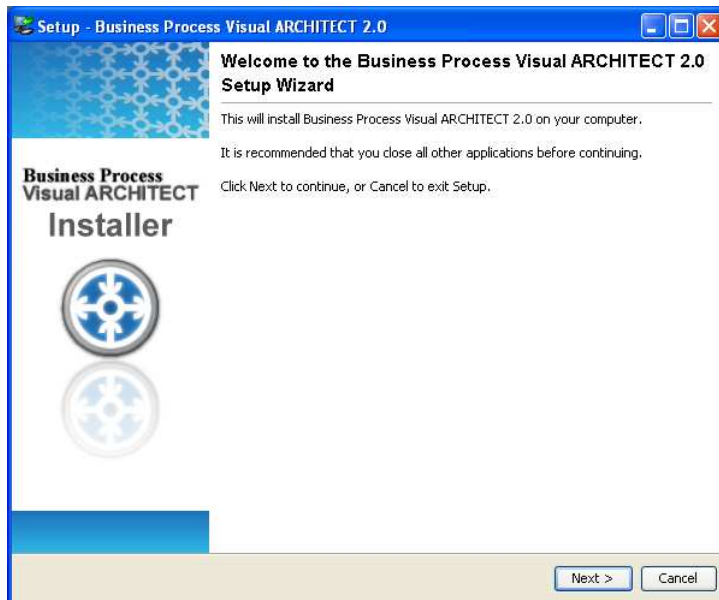


Figure 1.7 - The BP-VA setup wizard

2. In the **License Agreement** screen, read the BP-VA license agreement. Select **I accept the agreement** and click **Next** if you agree with it, otherwise click **Cancel** to exit the installation.
3. In the **Select Destination Directory** screen, select a directory for installing BP-VA. Click **Next** to continue.
4. In the **Select Start Menu Folder** screen, select a new or an existing Start menu folder for BP-VA. Click **Next** to continue.
5. In the **Select File Associations** screen, select to associate files with extension .vpp if you want them to be opened with BP-VA automatically. Click **Next** to continue.
6. In the **Products Configuration** screen, enter the file path of your BP-VA license key. If the license key is not ready at the moment, just leave it blank (you will be asked for the key again when you start BP-VA). Click **Next** to continue.
7. When you see the **Installing** screen, the required files will be copied to your computer for installing BP-VA.
8. When you see the installation completed screen, click **Finish** to finish the BP-VA installation.

## Starting Business Process Visual ARCHITECT

To start BP-VA, perform one of the following actions:

- Click the **Start** menu > **All Programs** > **Visual Paradigm** > **Business Process Visual ARCHITECT**.

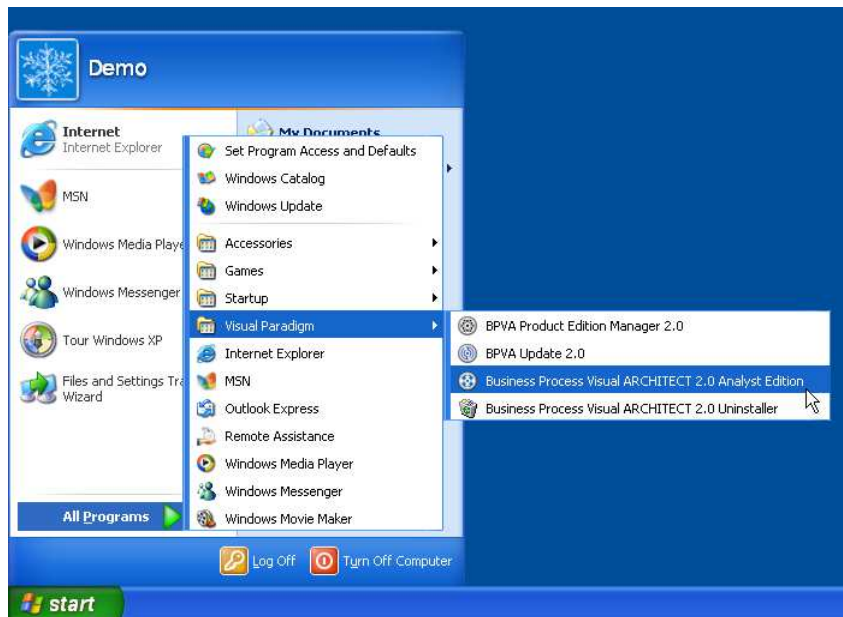


Figure 1.8 - Launching BP-VA on Windows menu

- Open the BP-VA installation directory, go into the **bin** folder and open **Business Process Visual ARCHITECT.exe**.

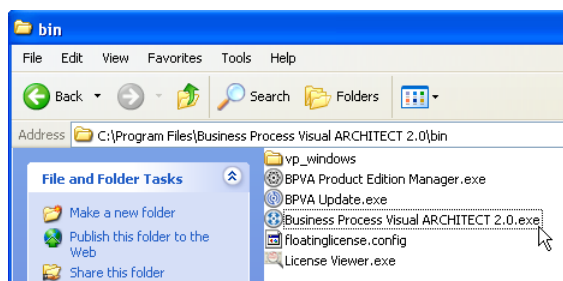


Figure 1.9 - The executable of BP-VA

BP-VA will be started shortly.

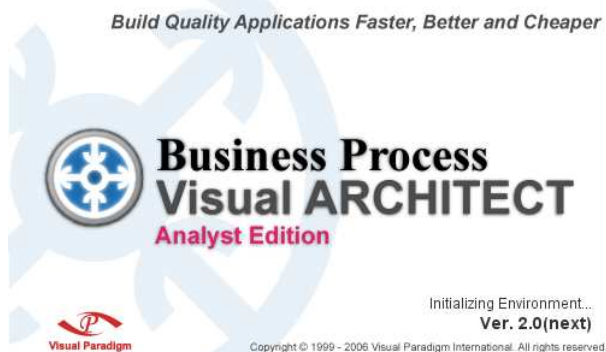


Figure 1.10 - The BP-VA splash screen

## User Interface

The user interface of BP-VA comprises of the following panes:

## Diagram Pane

The Diagram Pane is a tabbed view of all opened diagrams. You can click on the tab of a diagram to make it the active diagram for viewing or editing. You can arrange the windows so you can view more than one diagram at the same time.

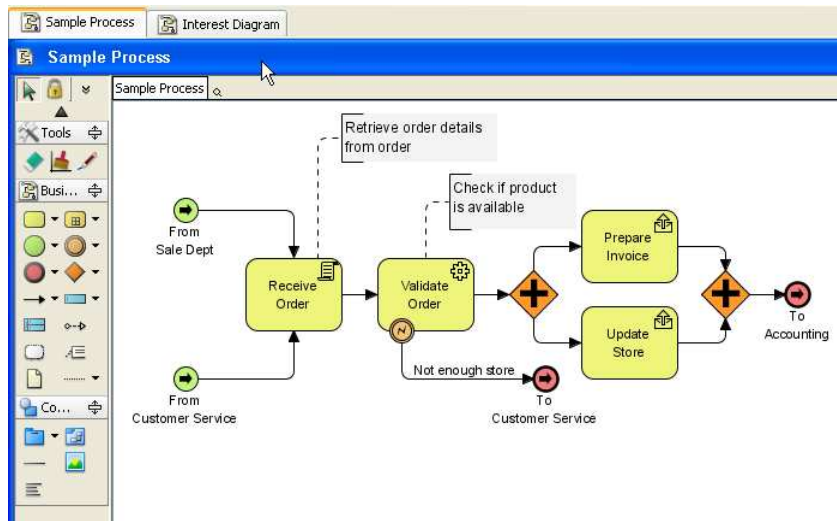


Figure 1.11 - Diagram Pane

## Diagram Navigator

In the Diagram Navigator, diagrams are listed under their corresponding diagram type, and diagram elements are listed under their owner diagrams. You can open a diagram/diagram element by double-clicking on its node in the Diagram Navigator. Other operations like open specification, rename, delete can be performed by right-clicking on the node to invoke its context menu.

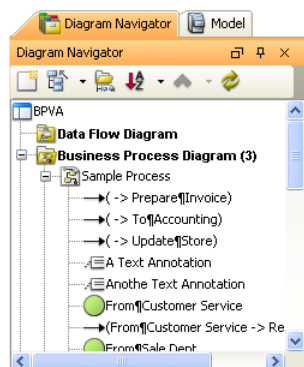


Figure 1.12 - Diagram Navigator

## Model

The Model pane shows the model elements in the project. Elements are arranged according to their parent-child hierarchy. Operations on model like open specification, rename, delete can be performed by right-clicking on the node to invoke its context menu.

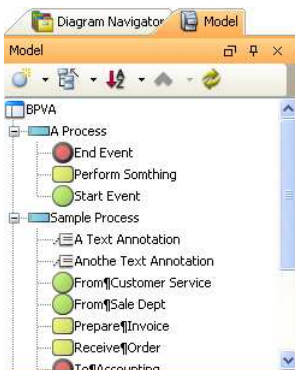


Figure 1.13 - Model pane

## Property

The Property pane shows the properties of the active diagram or the currently selected diagram elements. You can view or edit the properties here.

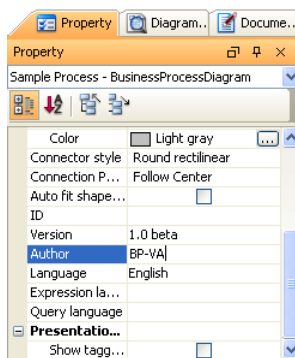


Figure 1.14 - Property pane

## Diagram Overview

The Diagram Overview shows the entire diagram zoomed to fit the overview display area. The actual visible bounds are indicated by the blue rectangle. To scroll the diagram to a desired location, move the mouse over the Diagram Overview and drag (you will notice the mouse cursor changed to a "hand" ).

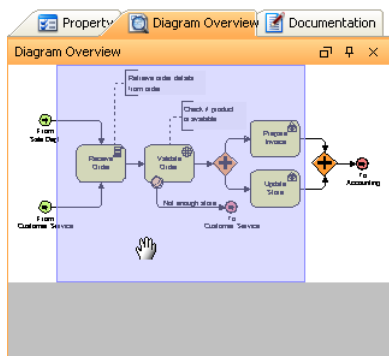


Figure 1.15 - Diagram Overview pane

## Documentation

The Documentation pane shows the documentation of the active diagram or the currently selected diagram element. You can view or edit the documentation here. Documentation can be edited in rich text or plain text by selecting/deselecting the **HTML** checkbox.

### Note



The documentation format (rich text or plain text) is a project-wide option. You cannot apply rich text documentation to one element while apply plain text documentation to another element in the same project.

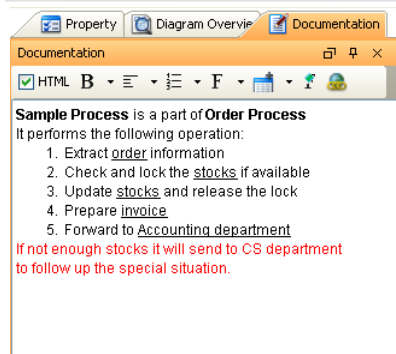


Figure 1.16 - Documentation pane

# 2

## Drawing Business Process Diagram

In this chapter, you will first learn the basic skills to draw business process diagrams in BP-VA. Then you will move on to a more advanced level to get the most of BP-VA to streamline and accelerate your business modeling routine.

In this chapter:

- ◆ Creating Business Process Diagram
- ◆ Creating Element
- ◆ Editing Element
- ◆ Advanced Diagramming Techniques

# Chapter 2 - Drawing Business Process Diagram

## Creating Business Process Diagram

To create a Business Process Diagram, perform one of the following actions:

- Select menu **File > New Diagram > Others > Business Process Diagram**

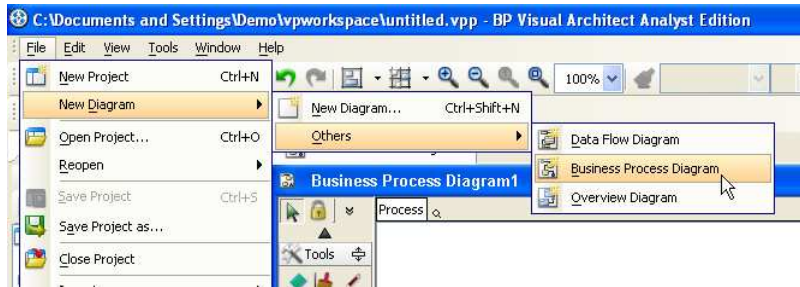


Figure 2.1 - Creating Business Process Diagram from menu

- Click on the **New Business Process Diagram** button on the toolbar.



Figure 2.2 - Creating Business Process Diagram from toolbar

- In the **Diagram Navigator**, right-click **Business Process Diagram** and select **Create Business Process Diagram** from the context menu.

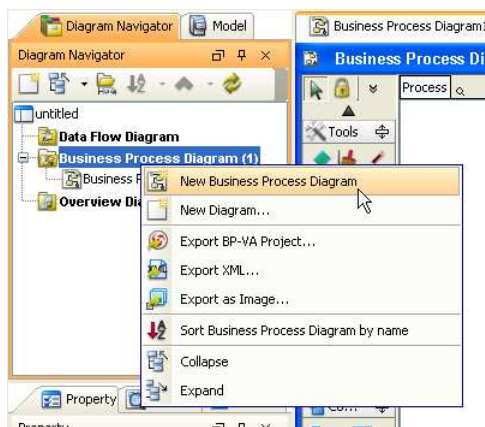


Figure 2.3 - Creating Business Process Diagram in Diagram Navigator

A blank Business Process Diagram will be created and opened in the Diagram Pane.

### Note



A blank Business Process Diagram will be created by default when you create a new project.



## Creating Element

BP-VA allows you to create diagram elements (shapes and connectors) in many different ways, you can choose to create them in the traditional way using toolbar or context menu, or you can take advantage of BP-VA's unique visual modeling features like mouse gestures and resource-centric interface.

### Creating Element using Toolbar

On the diagram toolbar (the toolbar that resides on the left of the diagram), click on the button of the element that you want to create.



Figure 2.4 - Creating element from diagram toolbar

Some elements of similar nature (like different kinds of process) may be organized in a button group (indicated by a small black triangle on the right of the button). Within a button group, only the last selected button will be visible.

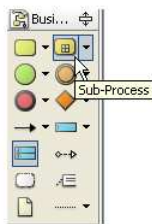


Figure 2.5 - A button group

If you cannot find the desired element on the diagram toolbar, locate its button group, then click on its drop-down button. The button group will be expanded with its elements shown in a popup menu. Just click the desired element from the popup menu to select it. You will notice the element you have just selected from the group become the active element of the group automatically. This means you don't have to expand the group again in order to select this element next time.

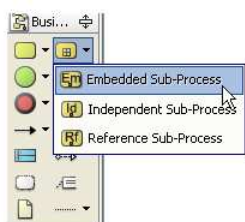


Figure 2.6 - An expanded button group

If the element to create is a shape, click once on the diagram to create it in its default size. If you want to assign an initial size to the new shape, click on the diagram and drag the desired bounds before releasing the mouse.

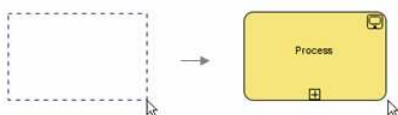


Figure 2.7 - Creating an element with initial size

If the element to create is a connector, click on the source shape on the diagram, then drag the connector to the target shape and release the mouse.

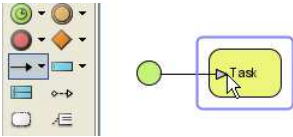


Figure 2.8 - Create a connector

#### Note



Sometimes you may notice a stop sign shows when you mouse over certain shapes while creating the connection, this is BP-VA's connection validation on-the-fly in action, preventing you from making connections that violate the Business Process Modeling Notation.

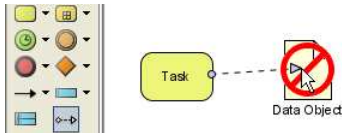


Figure 2.9 - Connection validation on-the-fly

## Creating Element using Context Menu

Right-click on the diagram, a context menu is shown. Select the **Add Shape** menu to expand it. You will see a list of elements that you can create.

Elements of similar nature are organized in a group, indicated by a sub-menu of that group (like Task, Process). You need to expand the group sub-menu in order to select its elements.

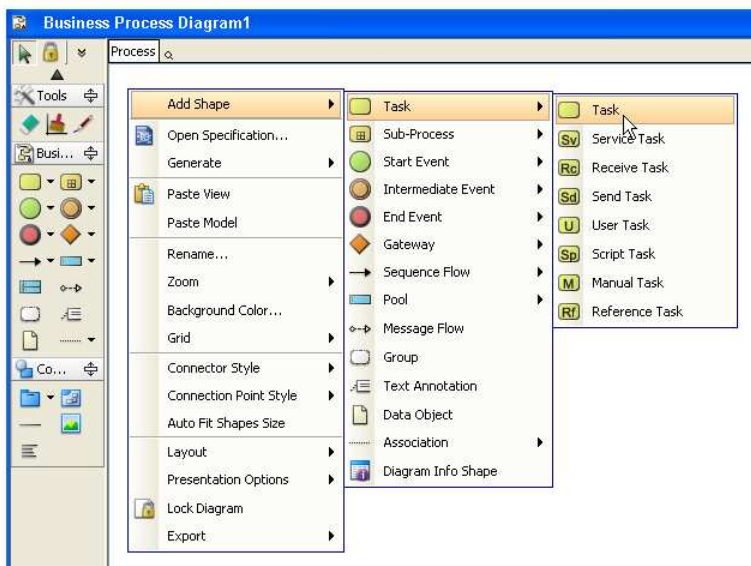


Figure 2.10 - Creating element from context menu of diagram

For element that is not grouped (like Data Object), you can simply select its menu to create the corresponding element.

If the element selected is a shape, the shape will be created in its default size at the location you right-clicked on the diagram.

If the element selected is a connector, the corresponding button on the diagram toolbar will be selected. Then you can click on the source shape on the diagram, drag the connector to the target shape and release the mouse to create the connection.

## Creating Element using Mouse Gesture

Mouse gesture allows you to create shapes quicker and more naturally by drawing gestures on the diagram to create the desired elements. You can also invoke commands other than shape creation using mouse gestures.

To draw a mouse gesture, press the right mouse button on the diagram and hold, then drag the desired gesture and release the mouse button when done.

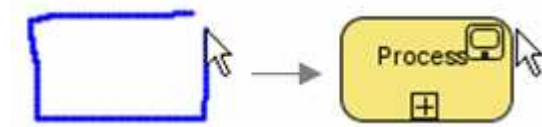


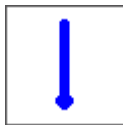
Figure 2.11 - Creating element using mouse gesture

The following tables show the supported mouse gestures in BP-VA:

### General Commands



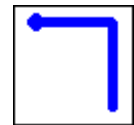
*Layout Diagram*



*Open Diagram Specification*

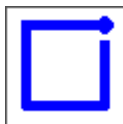


*Close Diagram*

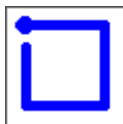


*Show Diagrams Thumbnail View*

### Business Process Diagram



*Sub-Process*



*Pool/Task*

Create a Pool (if other shapes are surrounded by the gesture) or a Task (if no shapes are surrounded by the gesture)



*Horizontal Lane*

Create a Lane for the intersected horizontal Pool (the gesture needs to horizontally "cut" across the target Pool)



*Vertical Lane*

Create a Lane for the intersected vertical Pool (the gesture needs to vertically "cut" across the target Pool)

If you forget the mouse gestures mentioned here, you can always view the supported gestures again inside BP-VA by selecting the menu **Help > Mouse Gestures....**

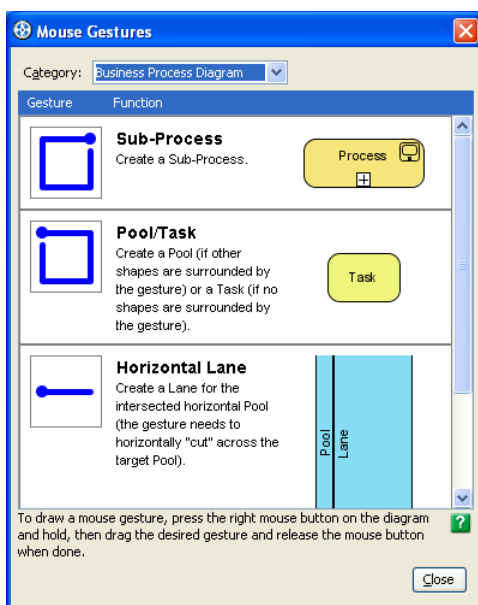


Figure 2.12 - The Mouse Gestures dialog box

## Creating Element using Resource-Centric Interface

To make diagramming and modeling more efficient, BP-VA adopts the resource-centric interface, where context-sensitive shortcut buttons ("resource") will be shown around the active diagram element. Each resource provides a functionality that you would likely to perform frequently, like creating a connection to a new/existing shape, opening the model specification, resizing a shape to fit.

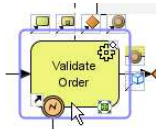


Figure 2.13 - Resources of a shape

Mouse over on a resource, you will see its tool tip that briefly describes its functionality.

### Connection Resources

For resource that is used to create a connection to a new/existing shape, its tool tip will appear in the form **CONNECTOR -> SHAPE**.

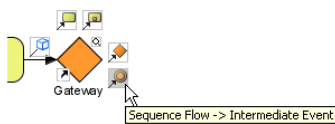


Figure 2.14 - The connection resources

To create the connection, click on the resource and drag. If you release the mouse over an existing shape, the connector will be connected to it. If you release the mouse over the empty space of the diagram, a new shape will be created.

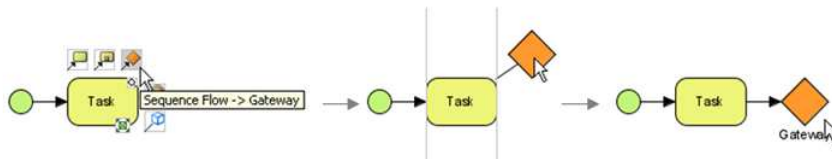


Figure 2.15 - Creating a connection using resource

In BP-VA, resources have the intelligent to determine what kind of flow connectors (Sequence Flow/Message Flow) should be created for the associated flow objects (Sub-Process/Task/Event/Gateway). Those resources are indicated by the tool tip **Sequence/Message Flow -> FLOW\_OBJECT\_NAME**.



Figure 2.16 - The Sequence/Message Flow resource

Use the resource to create a connection to a new or an existing shape. If the source shape and destination shape reside on the same Pool, a Sequence Flow will be created, or else a Message Flow will be created. This connection rule is specified by Business Process Modeling Notation and is enforced by BP-VA resource-centric interface automatically.

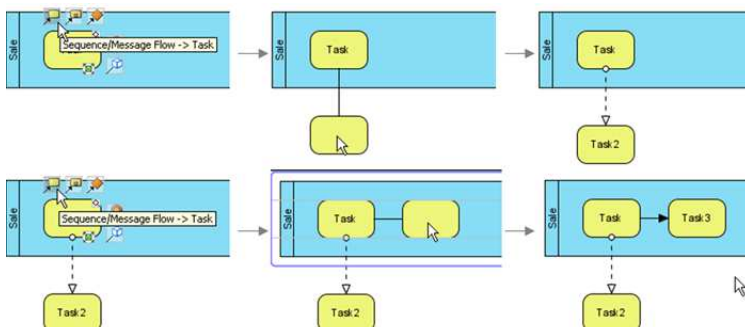


Figure 2.17 - Automatic Sequence/Message Flow creation determination

## Action Resources

Some resources perform standalone actions. Examples are the **Fit Size** resource (resize the shape to fit) and the **Open Specification** resource (open the specification dialog box of the shape). To use an action resource, single-click on it and the corresponding action will be performed.



Figure 2.18 - The Open Specification resource

## Editing Element

### In-Place Editing

In BP-VA, the renaming of all shapes can be performed directly in the diagram. Just select a shape and press **F2**, or double-click on the shape to bring it into in-place edit mode. The diagram below shows the in-place editing of a Text Annotation.

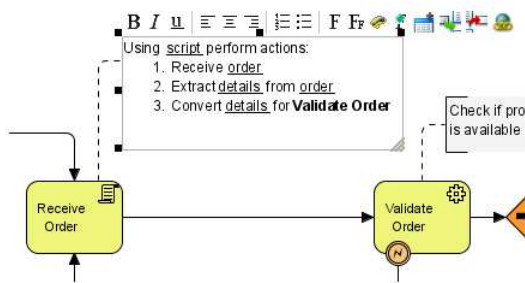


Figure 2.19 - In-place editing of Text Annotation

Frequently modified model properties can be accessed through the element's context menu.

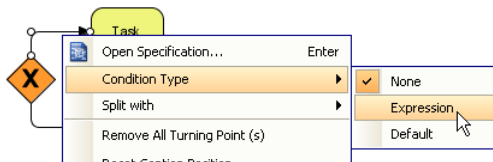


Figure 2.20 - Setting the condition type of a Sequence Flow

Formatting options can be changed through the context menu as well.

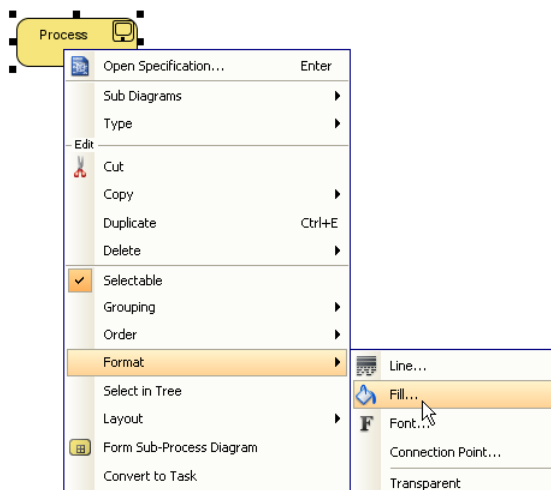


Figure 2.21 - Setting the Fill format of shape

## Specification Dialog Box

For detailed specification of model or diagram, right-click on the element and select **Open Specification...** from the context menu.

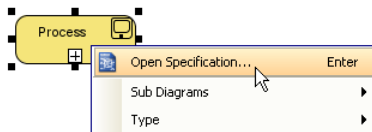


Figure 2.22 - Opening the specification dialog box of an element

The open specification dialog box of model is organized in a tabbed view, categorizing the properties in groups. To apply the edited properties, click **Apply** or **OK**. Click **Reset** if you want to revert the changes you have made.

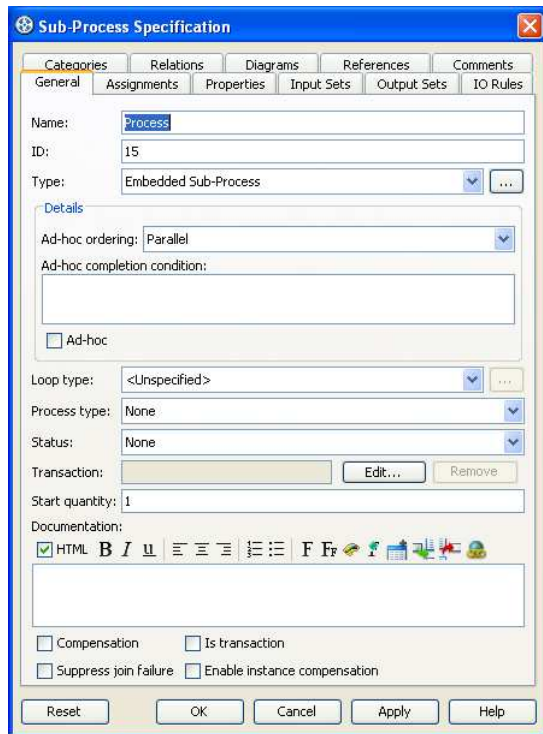


Figure 2.23 - The Sub-Process specification

## Property Pane

The Property pane shows the properties of the active diagram or the currently selected diagram elements. You can view or edit the properties here. Both the model properties and the style or formatting of the element can be edited directly in the Property pane.

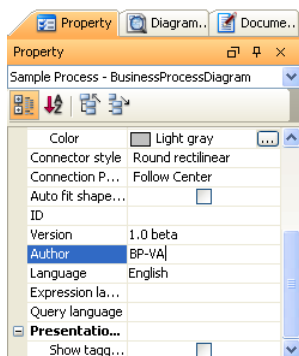


Figure 2.24 - Property pane

## Documentation

The Documentation pane shows the documentation of the active diagram or the currently selected diagram element. You can view or edit the documentation here. Documentation can be edited in rich text or plain text by selecting/deselecting the **HTML** checkbox.

### Note



The documentation format (rich text or plain text) is a project-wide option. You cannot apply rich text documentation to one element while apply plain text documentation to another element in the same project.

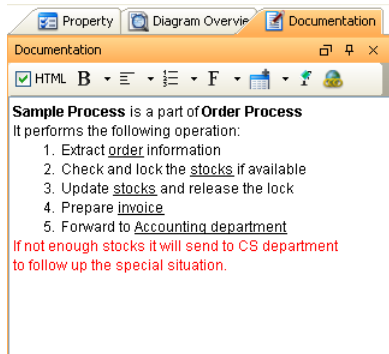


Figure 2.25 - Documentation pane

## Advanced Diagramming Techniques

### Advanced Usages of Resource-Centric Interface

#### Generic Resource

Generic Resource is similar to the connection resources that we mentioned earlier in this chapter. The difference is the actual type of the new connector and/or the new shape is not yet unknown during creation. When you release the mouse, a popup menu will be shown for you to select the desired connector/shape type to create.

If you release the mouse over the empty space of the diagram, the possible connector types and destination shape types are listed for selection. If the source and destination shapes are both flow objects (Sub-Process/Task/Event/Gateway), the connector types will not be listed because the BPMN connection rule will automatically determine the correct type of Flow for you. For example, dragging the Generic Resource of a Task, release it on the empty space of the diagram and select **Task** from the popup menu, a Sequence Flow will be created if both Tasks reside on the same Pool, or else a Message Flow will be created.

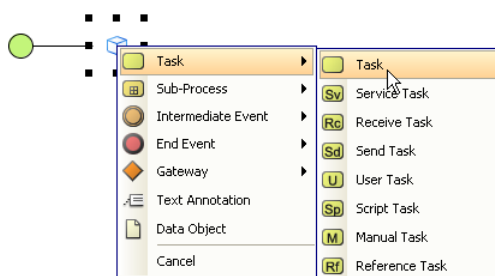


Figure 2.26 - Creating new shape using Generic Resource

If you release the mouse over an existing shape, the possible connector types between the source and the destination shapes are shown.

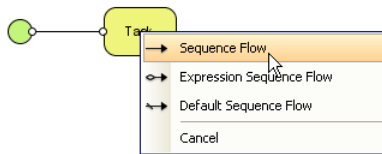


Figure 2.27 - Creating new connector using Generic Resource

## Single-Click on Connection Resource

If you click on a connection resource of a flow object (Sub-Process/Task/Event/Gateway) without dragging, there are two possible outcomes:

- If there is no Pool in the diagram, a new shape together with a new connector will be created whose positions are determined by BP-VA automatically.
- If there are one or more Pools in the diagram, a popup will be shown for selecting a Lane or Pool as the parent of the new shape. The new shape together with a new connector will be created and positioned at the selected Lane/Pool.

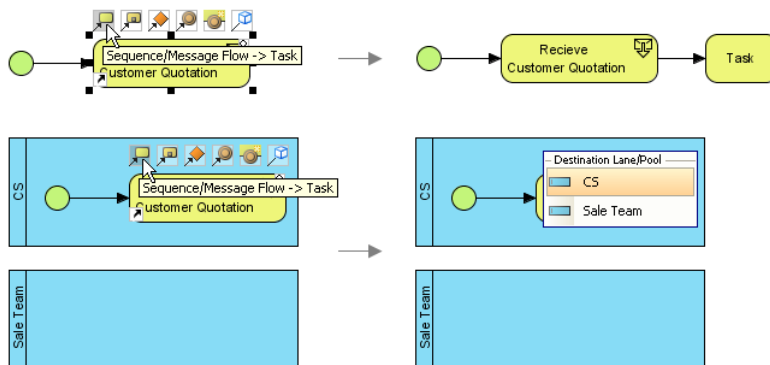


Figure 2.28 - Single-click on connection resource

## Sweeper

The sweeper tool allows you to align shapes interactively in the diagram, and you can use it to sweep shapes aside to make room for new shapes without messing up the current diagram structure.

To select the sweeper tool, click on the **Sweeper** button on the diagram toolbar.



Figure 2.29 - Sweeper

Click on the diagram and drag to either the north, east, south or west direction, depending on what shapes you want to sweep and where you want them to be swept to.

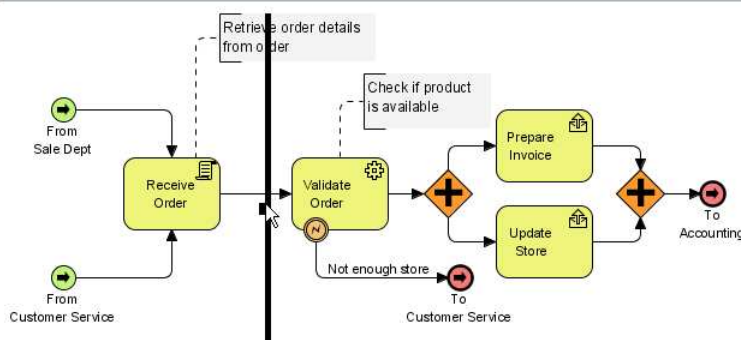


Figure 2.30 - Sweeping shapes



The shapes will be swept to the direction you dragged and automatically aligned with the sweeper. If you are not satisfied with their positions, you can drag the sweeper in the opposite direction to roll back (provided that you have not released the mouse yet), the shapes will gradually be moved back until they reached their original positions.

## Forming Sub-Process from Existing Elements

To break down a Sub-Process into lower level, normally you would create a Sub-Process and click its "+" button to expand it, and then draw the Sub-Process Diagram.

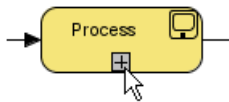


Figure 2.31 - Expanding a Sub-Process

You can also do it in a reversed manner - create the elements first and then form a Sub-Process from it. To do this, select the desired elements, right-click on the selection and select **Form Sub-Process Diagram** from the context menu.

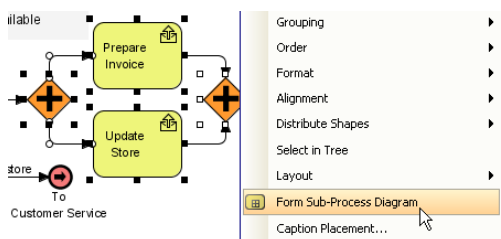


Figure 2.32 - Forming Sub-Process diagram from selected shapes

The selected elements will be transformed to a Sub-Process diagram.

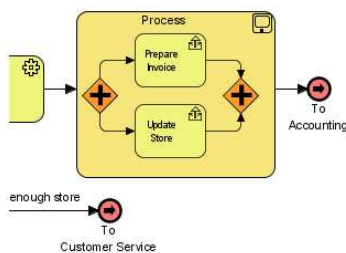


Figure 2.33 - Shapes transformed to a Sub-Process diagram

## Creating Group for Existing Elements

To create group for existing elements, select the elements and right-click on the selection, select **Create Group** from the context menu. The selected elements will be grouped together by a new Group shape.

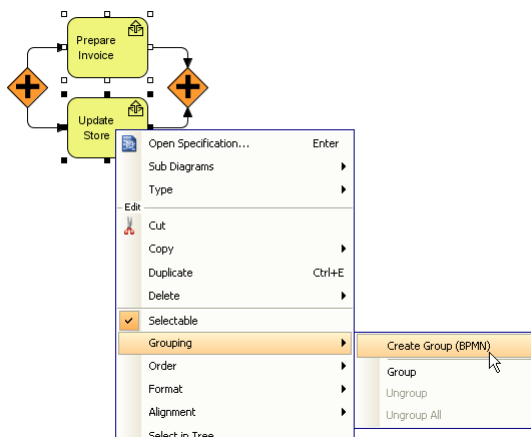


Figure 2.34 - Creating group for exist elements

## Invalid Connections Detection

To ensure you are always on the right track, BP-VA provides intelligent notation validation while you are editing the diagrams. When shapes are moved between pools that caused invalid business flows, those invalid flows are analyzed and displayed in the **Invalid Connection Detected** dialog box. To handle the problems, you can choose from one of the three options provided:

- Correct invalid connections

The invalid connections are listed with a suggested fix beside each. Just select the desired fix in the Action column to correct it. If you do not want a particular connection to be corrected, deselect its **Perform?** checkbox.

- Ignore all

Ignore all invalid connections detected.

- Cancel move

Cancel the move that caused the invalid connections.

After selected an option, click **OK** to confirm. If you click **Cancel** the result will be same as selected the **Ignore all** option.

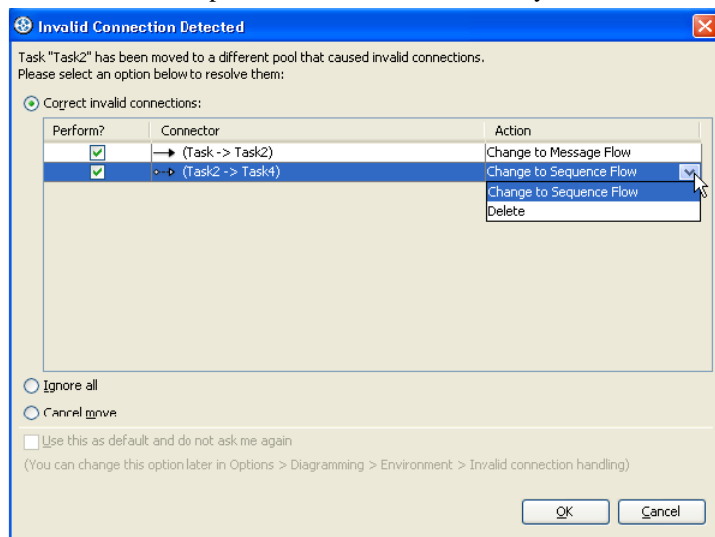


Figure 2.35 - The Invalid Connection Detected dialog box

## Choosing Different Caption Placements

In BP-VA, Events, Gateways and Data Objects can be set to have different caption placement styles.

To change the caption placement of a shape, right-click on it and select **Caption Placement...** from the context menu. The **Configure Caption Placement** dialog box shows.

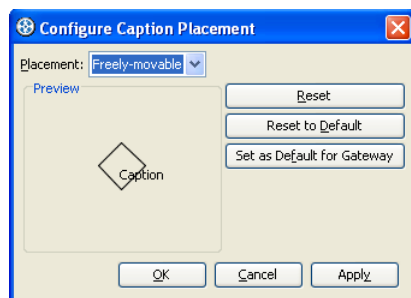


Figure 2.36 - The Configure Caption Placement dialog box

Select the desired caption placement in the **Placement** combo box, the shape in the **Preview** pane will be updated accordingly.

Click **OK** or **Apply** to apply the change, or click **Reset** to revert.

If you want new shapes of the same type to apply the currently selected caption placement from now on, click **Set as Default for SHAPE\_TYPE**. To restore the caption placement back to the default value that you have set before, click **Reset to Default**.

#### Note



You can click and drag to move the caption of an Event/Gateway/Data Object only when its caption placement is set to **Freely-movable**.

## Choosing Different Connector Styles

BP-VA comes with a wide range of connector styles that you can choose from.

- Rectilinear

With the Rectilinear connector style, connectors always remain either horizontal or vertical. After you drag the connector to reshape it, the connector style will re-calculate the required turning points to keep the lines in horizontal or vertical position.

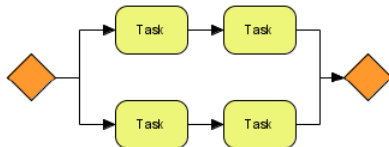


Figure 2.37 - Rectilinear

- Oblique

With the Oblique connector style, connectors can be dragged freely to create the desired turning points.

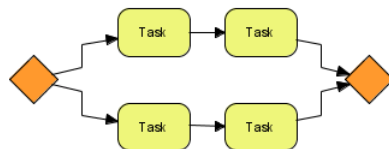


Figure 2.38 - Oblique

- Curve

With the Curve connector style, the intermediate lines between points will be calculated as smooth curves. You can drag its turning points to change the style of the curve.

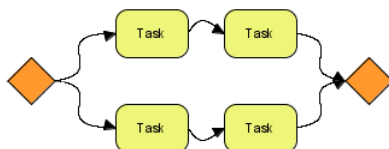


Figure 2.39 - Curve

- Round Oblique

Similar to the Oblique connector style, with the different that the corners of the turning points will appear rounded.

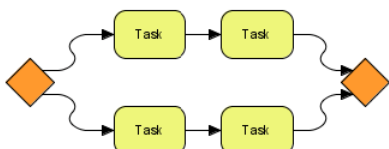


Figure 2.40 - Round Oblique

- Round Rectilinear

Similar to the Rectilinear connector style, with the different that the corners of the turning points will appear rounded. This is the default connector style for Business Process Diagram.

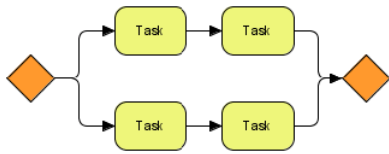


Figure 2.41 - Round Rectilinear

## Choosing Connector Style for Diagram

To choose a connector style for diagram, perform one of the following actions:

- Right-click on the diagram and select **Connector Style** from the context menu.

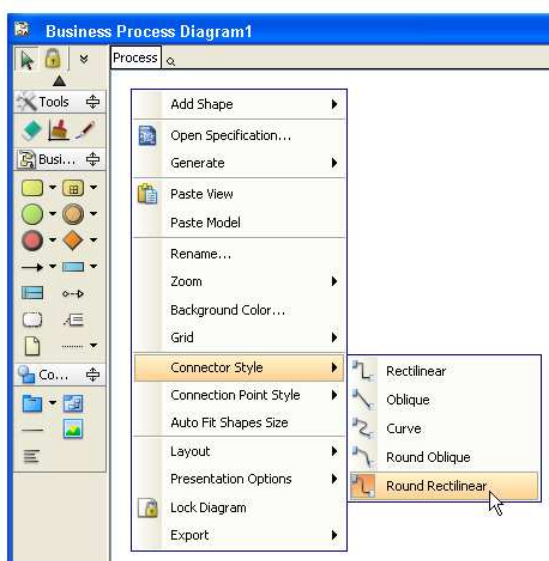


Figure 2.42 - Setting the connector style of diagram

- Click on the empty space of the diagram, click on the value cell of the **Connector style** property in the Property pane.

After the connector style of a diagram is changed, all connectors whose connector styles that set to **Follow Diagram** will follow.

## Choosing Connector Style for Connector

To choose a connector style for connector, perform one of the following actions:

- Right-click on the connector and select **Connector Style** from the context menu.
- Select the connector, click on the value cell of the **Connector style** property in the Property pane.

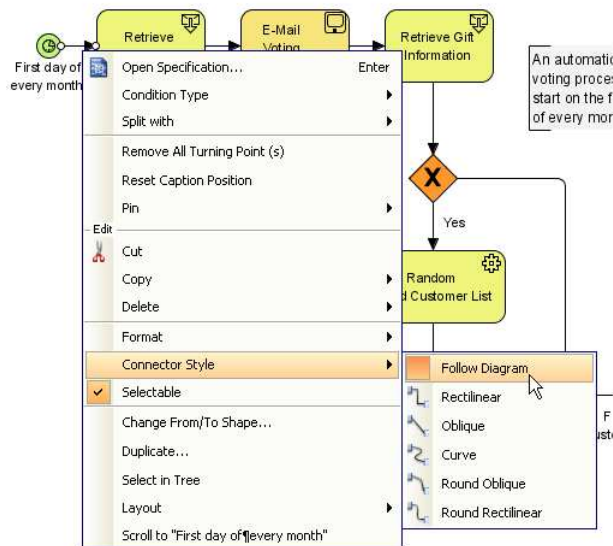


Figure 2.43 - Setting the connector style of the selected connector

This overrides the connector style of its diagram. To let the connector follows the connector style of its diagram, select the **Follow Diagram** connector style.

## Changing Styles and Formatting

### Fill Color

All of the shapes have a fill color property, which allows you to select a solid fill color or a gradient fill color and you can define its transparency as well.

To format fill color for shapes, select the desired shapes and perform one of the following actions:

- Right-click on the selection and choose **Format > Fill...** from the context menu.
- From the Property pane, click on the ...button of the **Fill** property to invoke the **Format Fill Color** dialog box.

In both cases, the **Format Fill Color** dialog box will be displayed.

## Format Fill Color Dialog Box

The **Format Fill Color** dialog box allows you to select the fill color type (solid or gradient) and you can create your own fill color by configuring the transparency, gradient style and colors.

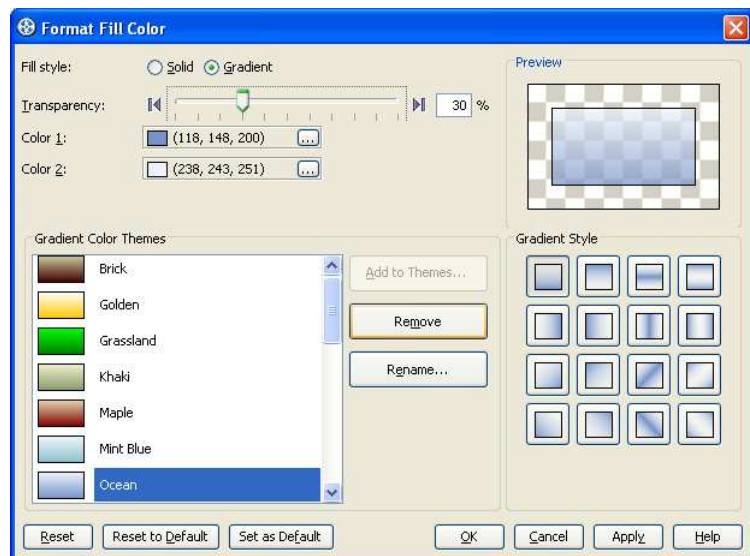


Figure 2.44 - The Format Fill Color dialog box



Field	Description
Fill style	Select the fill style of the fill color. It can either be <b>Solid</b> (a single color) or <b>Gradient</b> (a fill color that is mixed by two colors).
Transparency	Specify the transparency of the fill color. The greater the value, the more transparent is the shape. A transparency of 0 (zero) makes the fill color completely opaque, while a transparency of 100 makes the fill color completely transparent. You can adjust the transparency by dragging the slider, or by typing the value in the text field. Alternatively, you can click the Opaque button  to set the fill color to opaque, or click the Transparent button  to set the fill color to transparent.
Preview	The Preview pane displays a rectangle that is filled with the editing fill color. The background is filled with checkers so that you can preview the transparency of the fill color as well.
Set as Default	Save the current fill color as the default fill color for new shapes.

Table 2.1

## Formatting a Solid Fill Color

Upon selecting **Solid** from the **Fill style** field, you will see the detail pane for formatting a solid fill color.

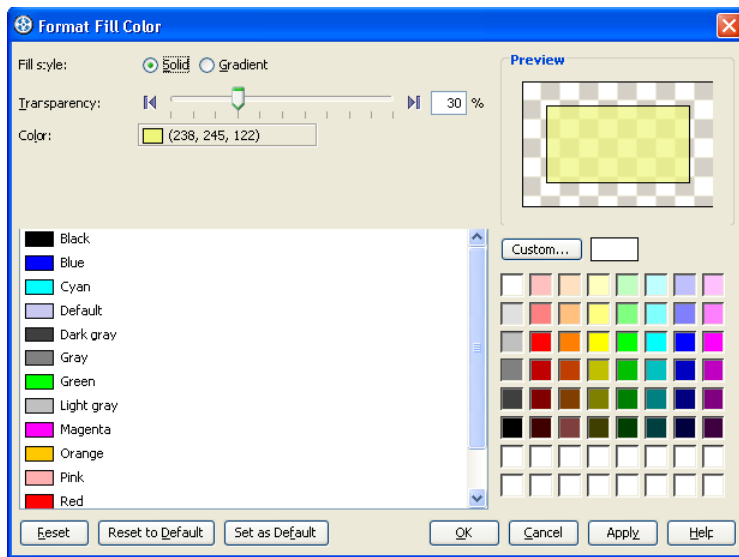


Figure 2.45 - Formatting a solid fill color

Field	Description
Color	This field displays the currently selected color. It will display the color name if the selected color is a default color (Black, White, Yellow, etc); otherwise the RGB value of the selected color will be displayed.
Default Color List	The default color list displays a list of pre-defined colors. Each color is displayed with a color preview and a color name. You can view the RGB value of a color by moving the mouse pointer over the color.
Custom Color Pane	The custom color pane display a wider range of colors that you can select from. And you can define a new custom color by clicking on the <b>Custom...</b> button. The newly defined color will be added to the recent color list (located at the bottom two rows of the custom color pane) for later reuse.

Table 2.2

## Formatting a Gradient Fill Color

Upon selecting **Gradient** from the **Fill style** field you will see the detail pane for formatting a gradient fill color.

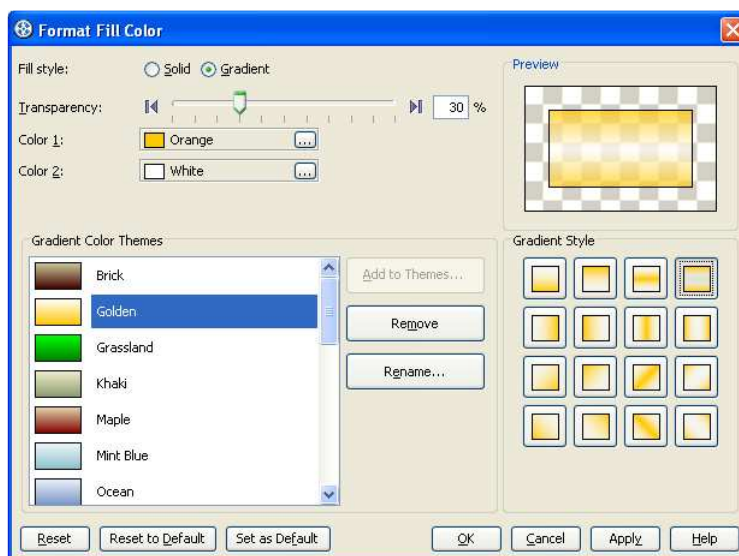


Figure 2.46 - Formatting a gradient fill color

Field	Description
Color 1	You can select the first color of the gradient from the <b>Color 1</b> field. To select a color click the ...button or double-click on the color editor. A color chooser will appear for you to select a color.
Color 2	You can select the second color of the gradient from the <b>Color 2</b> field. To select a color click on the ...button or double-click on the color editor. A color chooser will appear for you to select a color.

Gradient Color Themes	<p>The Gradient Color Themes pane displays a list of pre-defined gradient color themes.</p> <p>To add a new color theme select <b>Color 1</b> and <b>Color 2</b> then click the <b>Add to Themes...</b> button. Please note that you must select a combination of colors that does not already exist in the color themes.</p> <p>To rename a theme click on the <b>Rename...</b> button or double-click on the desired theme. An input dialog box will appear for you to enter a new name.</p> <p>To remove a theme select the theme and click on the <b>Remove</b> button, or press the Delete key.</p>
Gradient Style	<p>The Gradient Style pane allows you to select the gradient style of the gradient fill color (the angle of how the gradient color is drawn). There are sixteen pre-defined gradient styles, which are shown as toggle buttons in the Gradient Style pane. To select a gradient style to use click on one of the styles.</p>

Table 2.3

## Shape Line Format

You can format the line of a shape so that you can adjust its stroke style, weight (thickness), color and transparency.

To format the line of a shape, select the desired shapes and perform one of the following actions:

- Right-click on the selection and choose **Format > Line...** from the context menu.
- From the Property pane, click on the ... button of the **Line** property to invoke the **Format Line** dialog box.

In both cases, the **Format Line** dialog box will be displayed.

## Format Line Dialog Box

The **Format Line** dialog box allows you to format the line of a shape.

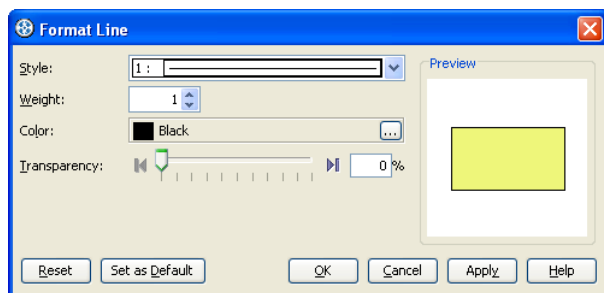




Figure 2.47 - The Format Line dialog box

Field	Description
Style	Select the style (stroke) of the line. You can select from one of the 23 styles (including "None" , which means no line) to apply in the combo box, a preview will be shown for each of the style item.
Weight	<p>Adjust the weight (thickness) of a line. The greater the value, the thicker is the line. You can use the up/down button to increase/decrease the line weight, or you can type directly in the text field. The allowable line weight ranges from 1 to 20.</p> <p><b>Note</b></p> <p>Only integer values can be used for line weight. If you type 2.8 in the text field, 2 will be applied instead.</p>
Color	Specify the line color. Just click on the ...button beside the <b>Color</b> field to select a color either from the <b>Default</b> page (which shows predefined colors) or from the <b>Custom</b> page (which shows a larger variety of colors, and allows you to define any custom colors).
Transparency	<p>Specify the transparency of the line. The greater the value, the more transparent is the shape. A transparency of 0 (zero) makes the fill color completely opaque, while a transparency of 100 makes the fill color completely transparent.</p> <p>You can adjust the transparency either by dragging the slider, or by typing the value in the text field. Alternatively you can click on the Opaque button  to set the line color to opaque, or click on the Transparent button  to set the line color to transparent.</p>
Preview	The Preview pane displays a rectangle that is surrounded by the line with the selected line format applied.



Set as Default	Save the current line format as the default line format for new shapes.
----------------	---

Table 2.4

Connector Line Format

You can format the line of a connector so that you can adjust its weight (thickness), color and transparency.

To format the line of a connector, select the desired connector, right-click on the selection and choose **Format > Line...** from the context menu. The **Format Line** dialog box will be displayed.

Format Line Dialog Box

The **Format Line** dialog box allows you to format the line of a connector.

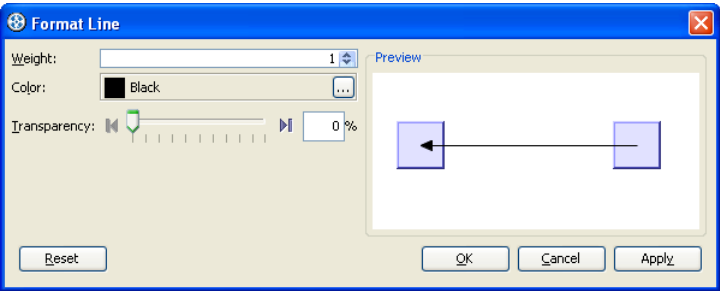


Figure 2.48 - The Format Line dialog box




Field	Description
Weight	<p>Adjust the weight (thickness) of a line. The greater the value, the thicker is the line. You can use the up/down button to increase/decrease the line weight, or you can type directly in the text field. The allowable line weight ranges from 1 to 20.</p> <div><b>Note</b>  Only integer values can be used for line weight. If you type 2.8 in the text field, 2 will be applied instead.</div>
Color	<p>Specify the line color. Just click on the ...button beside the <b>Color</b> field to select a color either from the <b>Default</b> page (which shows predefined colors) or from the <b>Custom</b> page (which shows a larger variety of colors, and allows you to define any custom colors).</p>
Transparency	<p>Specify the transparency of the line. The greater the value, the more transparent is the shape. A transparency of 0 (zero) makes the line completely opaque, while a transparency of 100 makes the line completely transparent.</p> <p>You can adjust the transparency either by dragging the slider, or by typing the value in the text field. Alternatively you can click on the Opaque button  to set the line color to opaque, or click on the Transparent button  to set the line color to transparent.</p>
Preview	<p>The Preview pane displays how the connector will look like with the selected line format applied.</p>

Table 2.5

## Incorporating User-Defined Images

Image Shape is a utility for displaying an image on any diagrams, and it can also act as a link to a file. With Image Shape, you can easily add images to document and annotate important ideas in the diagram.

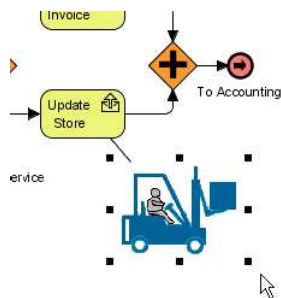


Figure 2.49 - Image Shape

Like standard shapes in BP-VA, an Image Shape can be connected to other shapes (via Generic Connector) and can have a caption.

### Note



- The caption of Image Shape is empty by default; just double-click on it to edit the caption.
- The caption of Image Shape is freely movable.

## Creating Image Shapes

You can either create an Image Shape using the diagram toolbar, by copy and paste, or by drag and drop.

### Creating Image Shapes using Diagram Toolbar

1. Click on the **Image Shape** button on the diagram toolbar.



Figure 2.50 - The Image Shape button

2. Click on the diagram, an Image Shape is created and a file dialog shows for selecting an image. Upon selecting an image, its preview is shown on the right of the dialog box.

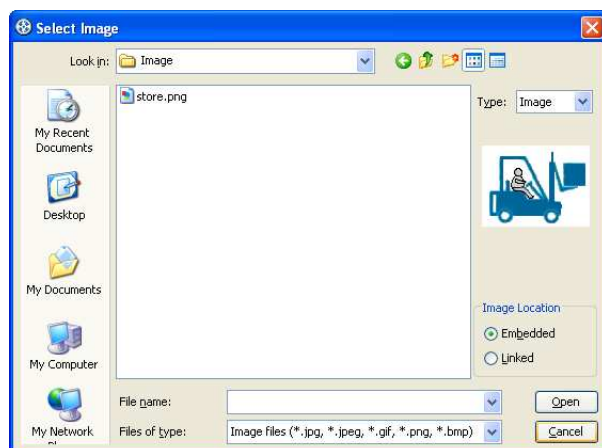


Figure 2.51 - Selecting image for an Image Shape

3. In the **Image Location** group, select an option:

**Embedded** - The source image will be copied and embedded into the project, which means any modification to or removal of the source image will not affect the image in this Image Shape.

The advantage of using embedded image is the image remains even when the source image no longer exists; while the disadvantage is the project file size will grow since images are copied to the project, and the embedded image cannot update when the source image is updated.

**Linked** - The Image Shape links the source image for display, which means any modification to or removal of the source image will also be reflected in this Image Shape.

The advantage of using linked image is the project file size will not grow since images are just linked but not copied to the project, and the image in the Image Shape will update when the source image is updated; while the disadvantage is the image will lost when the source image no longer exists.

4. After selecting the image location option, click **Open** to confirm.

## Creating Image Shapes by Copy and Paste

1. Copy an image to the clipboard

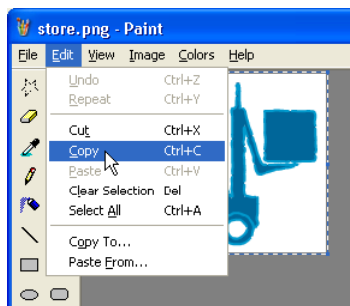


Figure 2.52 - Copying an image to the clipboard

2. Switch to BP-VA, open a diagram, select menu **Edit > Paste** or use hotkey **Ctrl+V**. An image shape is created with the copied content.

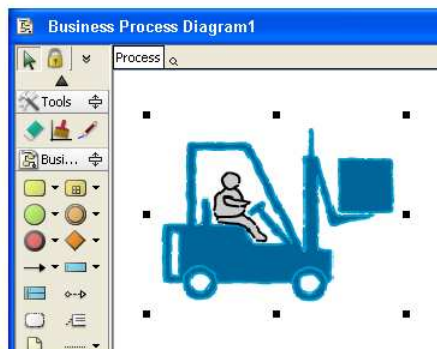


Figure 2.53 - Image Shape created by paste from clipboard

### Note



The image location of the Image Shape created by copy and paste will be set to Embedded.

## Creating Image Shapes by Drag and Drop

1. Drag one or more files from your computer and drop to a diagram in BP-VA

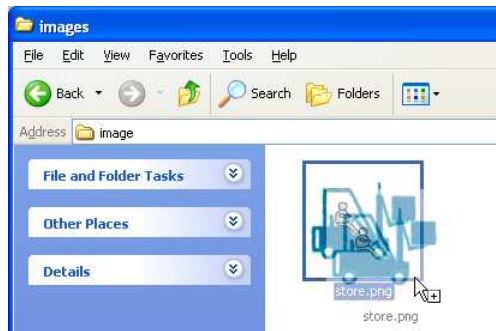


Figure 2.54 - Dragging an image from the file explorer

2. An image shape will be created for each dropped file.
3. If you dropped an image file to the diagram, an image shape will be created that embed the dropped image.
4. If you dropped a non-image file to the diagram, an image shape will be created that links to this file. And it shows the system icon of the file for indication. Refer to [Selecting Linked File](#) for more information on how to link the image shape to file.

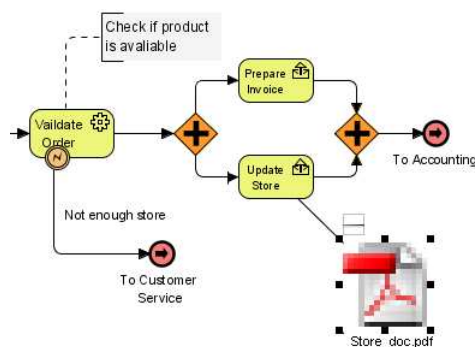


Figure 2.55 - Image Shape created by dragging non-image file to diagram

## Selecting Image

No matter what method you used to create an Image Shape, you can change its source image later on. To selecting an image, right-click on an Image Shape and select **Select Image...** from the context menu.

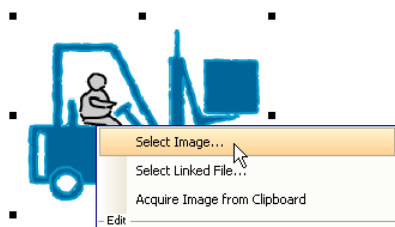


Figure 2.56 - Selecting image

A file dialog shows for selecting an image. For details on the options in selecting an image, please refer to [Creating Image Shapes using Diagram Toolbar](#) earlier in this chapter.

## Selecting Linked File

An Image Shape can act as a link to a file. To select the linked file, perform one of the following actions:

1. Right-click on an Image Shape and select **Select Linked File...** from the context menu.
2. Select an Image Shape, click on the button next to the **Linked File** property in the Property pane.

A file dialog shows for selecting a linked file. Once an Image Shape is linked to a file, you can double-click it to open the linked file.

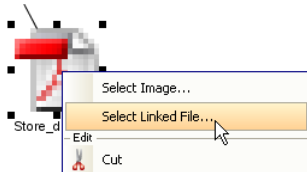


Figure 2.57 - Selecting linked file

## Image Scaling Option

Image Shape has two image scaling options which determine how an image will be displayed when the Image Shape changes its size.

1. To select an image scaling option, right-click on the Image Shape and select **Scaling** from the context menu.

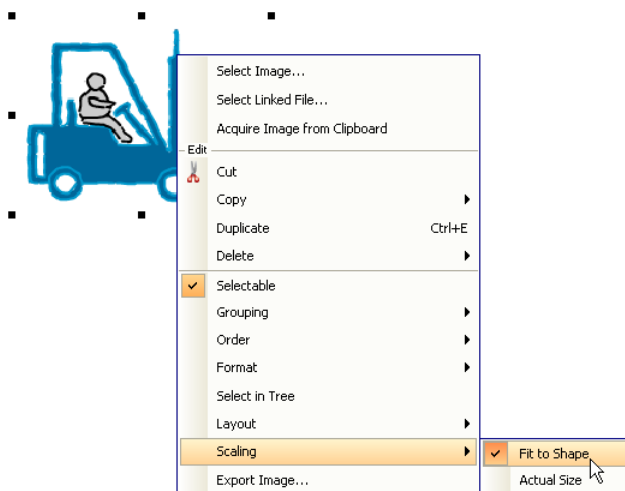


Figure 2.58 - Image scaling options

**Fit to Shape** - The image will be expanded or shrunk to fit the shape when the Image Shape changes its size.



Figure 2.59 - Fit to shape

**Actual Size** - The image will always be displayed in its actual size no matter how large the Image Shape is.



Figure 2.60 - Actual size

## Exporting Image

To export image from an Image Shape, right-click on it and select **Export Image...** from the context menu. A file dialog will show for selecting the path of the exported image. You may also choose the exported image format as either JPG or PNG.

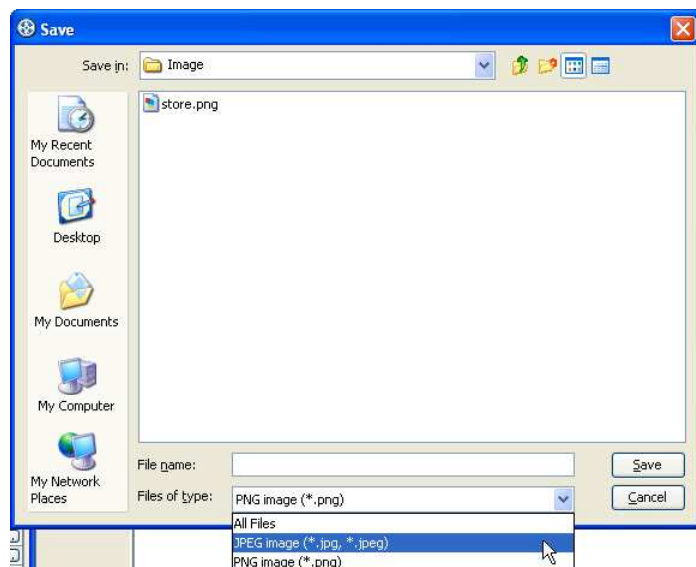


Figure 2.61 - Exporting image

## Exporting Linked File

To export the linked file from an Image Shape, right-click on it and select **Export Linked File...** from the context menu. A file dialog will show for selecting the path of the exported file.

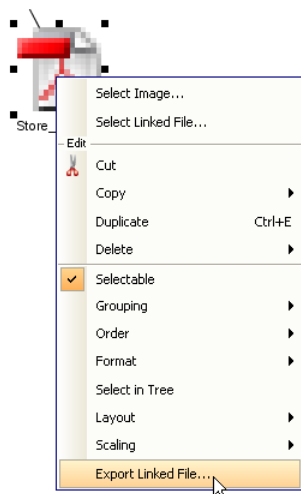


Figure 2.62 - Exporting linked file

# 3

## Drawing Data Flow Diagram

In this chapter, you will first learn the basic skills to draw data flow diagrams in BP-VA. Then you will move on to a more advanced level to get the most of BP-VA to streamline and accelerate your business modeling routine.

In this chapter:

- ◆ Creating Business Process Diagram
- ◆ Data Flow Diagram Element
- ◆ Decomposing a Process

# Chapter 3 - Drawing Data Flow Diagram

## Creating Data Flow Diagram

To create a Data Flow Diagram, perform one of the following actions:

- Select menu **File > New Diagram > Others > Data Flow Diagram**

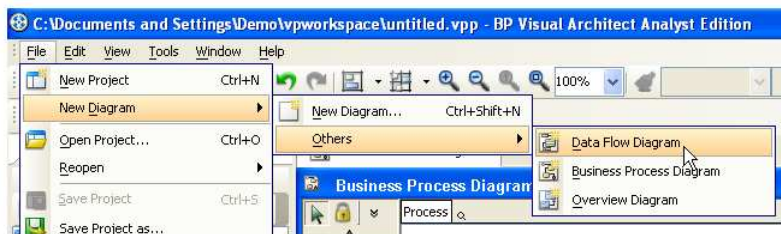


Figure 3.1 - Creating Data Flow Diagram from menu

- Click on the **New Data Flow Diagram** button on the toolbar.



Figure 3.2 - Creating Data Flow Diagram from toolbar

- In the **Diagram Navigator**, right-click **Data Flow Diagram** and select **Create Data Flow Diagram** from the context menu.

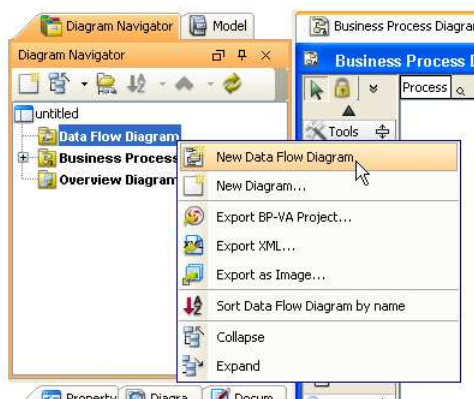


Figure 3.3 - Creating Data Flow Diagram in Diagram Navigator

A blank Data Flow Diagram will be created and opened in the Diagram Pane.



## Data Flow Diagram Elements

This section describes the elements in Data Flow Diagram of BP-VA.

### Note



For basic diagramming techniques, please refer to Chapter 2 - Drawing Business Process Diagram.

## Process

A Process manipulates the input data.



Figure 3.4 - Process

To create a Process, click on the **Process** button on the toolbar and then click on the diagram.

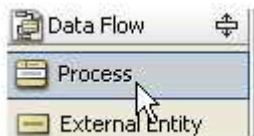


Figure 3.5 - Creating a Process

The Process symbol comprises of:

**ID** - The unique identifier, located at top-left of the symbol

**Location** - Where/by whom the process is done, located at top-right of the symbol

**Name** - The name of the Process, located at the center of the symbol

To edit these properties, open the specification dialog box of the Process. The name of the Process can also be edited in-place in the diagram.

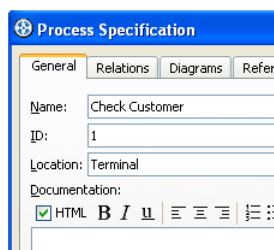


Figure 3.6 - Process Specification

## External Entity

An External Entity provides data/information to the system, or receive data/information from it.

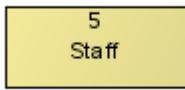


Figure 3.7 - External Entity

To create an External Entity, click on the **External Entity** button on the toolbar and then click on the diagram.

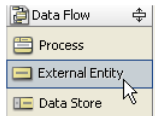


Figure 3.8 - Creating an External Entity

The External Entity symbol comprises of:

**ID** - The unique identifier, located at the top of the symbol

**Name** - The name of the External Entity, located at the center of the symbol

To edit these properties, open the specification dialog box of the External Entity. The name of the External Entity can also be edited in-place in the diagram.

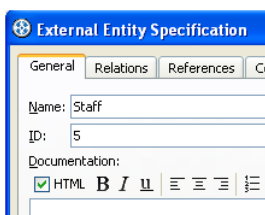


Figure 3.9 - External Entity Specification

## Data Store

A Data Store is the location where data is held temporarily or permanently.

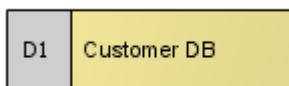


Figure 3.10 - Data Store

To create a Data Store, click on the **Data Store** button on the toolbar and then click on the diagram.

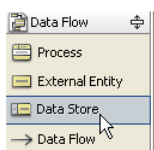


Figure 3.11 - Creating a Data Store

The Data Store symbol comprises of:

**Type + ID** - The type and the unique identifier of the Data Store, both located at the left of the symbol

**Name** - The name of the Data Store, located at the center of the symbol

To edit these properties, open the specification dialog box of the Data Store. The name of the Data Store can also be edited in-place in the diagram.

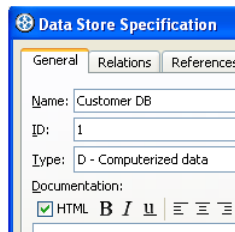


Figure 3.12 - Data Store Specification

## Data Flow

A Data Flow represents the data/information that flows to/from a Process.

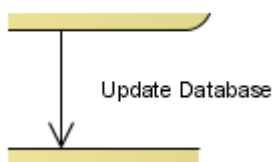


Figure 3.13 - Data Flow

To create a Data Flow, click on the **Data Flow** button on the toolbar, and then drag from the source shape to the destination shape.

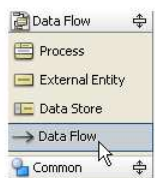


Figure 3.14 - Creating a Data Flow

## Decomposing a Process

To decompose a Process, right-click on it and select **Decompose** from the context menu.

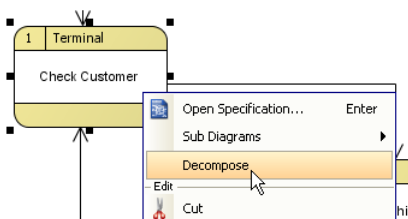


Figure 3.15 - Decomposing a Process

If the Process connects with Data Stores and External Entities, you will be asked whether to add those shapes to the decomposed diagram.

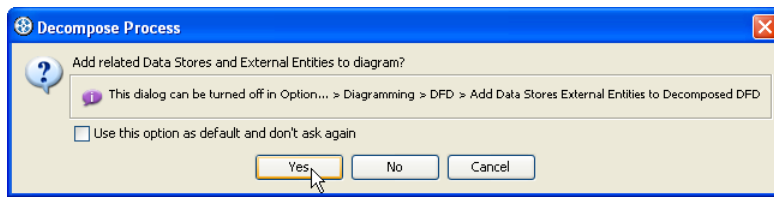


Figure 3.16 - Prompt for adding related shapes to decomposed diagram

If you selected Yes, the related shapes will be added to the decomposed diagram. Otherwise the diagram will be blank.

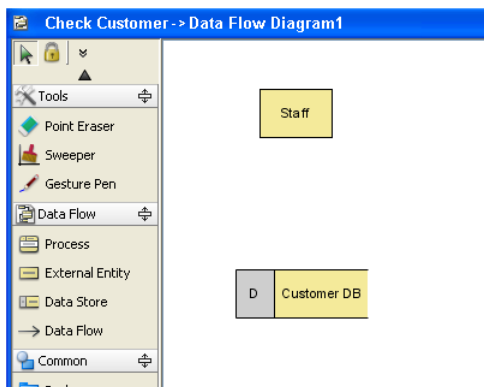


Figure 3.17 - Data Flow Diagram of a decomposed Process

# 4

## Print Diagrams

BP-VA provides a sophisticated yet user-friendly printing facility that you can use to create professional and highly customizable printouts for your Business Process Diagrams.


In this chapter:

- ◆ **Print Preview**
- ◆ **Printing Diagrams with Preview**
- ◆ **Printing Diagrams with Quick Print**

# Chapter 4 - Printing Diagram

## Print Preview

The **Print Preview** pane allows you to preview the printouts and provides a set of options for changing the printout style. To display the print preview, perform one of the following actions:

- Select **File > Print...** from main menu.
- Click on the **Print** button  on the toolbar.

In both cases, the **Print Preview** pane will be displayed.

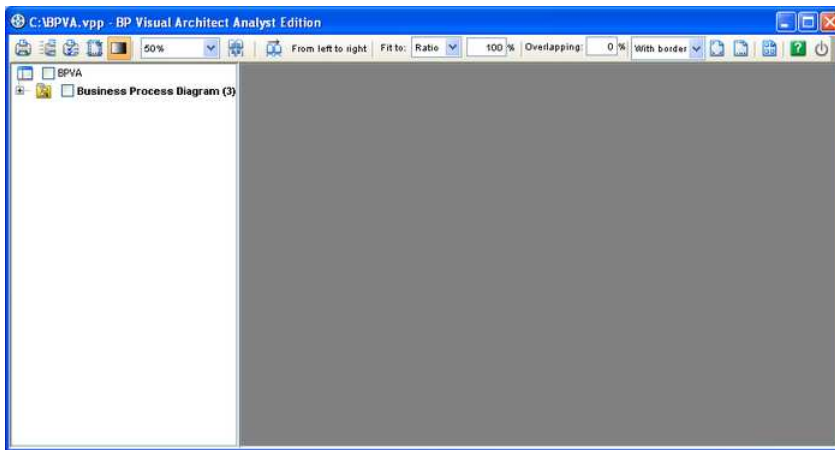











Figure 4.1 Print preview

The toolbar of the print preview pane allows you to configure the print settings. The buttons and their descriptions are shown in the table below:

Icon	Button	Function
	Print	Print the diagram(s). The <b>Print</b> dialog box will be opened.
	Quick Print	Print diagrams without previewing them. The <b>Quick Print</b> dialog box will be opened.
	Page Setup	Set up the page properties for the diagrams to be printed such as paper size and orientation.
	Adjust Margins	Adjust the margins of the pages to be printed.
	Use Gradient Color	Select to use gradient color in printout. Since printing gradient color will use up lots of memory, it is recommended to turn this option off for better performance.
	Zoom	Select the percentage to reduce/enlarge the print preview of diagrams.
	Paper Base Layout/Diagram Base Layout	If the <b>Fit to Pages</b> option is selected, and there are multiple pages in the printout, selecting <b>Paper Base Layout</b> will cause the distribution of pages to be paper-oriented (the diagram size is ignored in arranging the preview); while selecting <b>Diagram Base Layout</b> will cause the distribution of pages to be diagram-oriented. Note that this option affects the preview only; the order of the printout remains unchanged.
	Paper Place Style	To change the order of the printout. Consider a large diagram is divided into many pages, selecting <b>From left to right</b> will arrange the printout order from the pages on the left to the pages on the right, while selecting <b>From top to bottom</b> will arrange the print order from the pages on the top to the pages on the bottom.
	Fit to Ratio	Set the diagram size to fit to the specified ratio.








Fit to: <span>Pages</span>  1 x 1	Fit to Pages	Set the diagram to be printed on the number of pages specified.
Overlapping: <input type="text" value="0"/> %	Overlapping	Set the percentage of the margins to overlap among adjacent pages.
<span>With border</span> 	Border Option	Select to print the diagrams with or without borders.
	Show/Hide Clip Marks on Page	Select/deselect to show/hide the clip marks on the printout.
	Edit Header/Footer	Edit the header and the footer of the printout.
	Multiple Page Mode	Switch to the Multiple Page Mode to set the multiple page options.
	Help	Open the BP-VA help.
	Close Print Preview	Close the print preview pane and return to the design area.

Table 4.1

## Printing Diagrams with Preview

You can use the Print command to select the printer, set the range of pages and number of copies to be printed. The Print command is available once a project is open.

1. Select the desired diagrams for printing. The selected diagrams will be shown at the preview area.

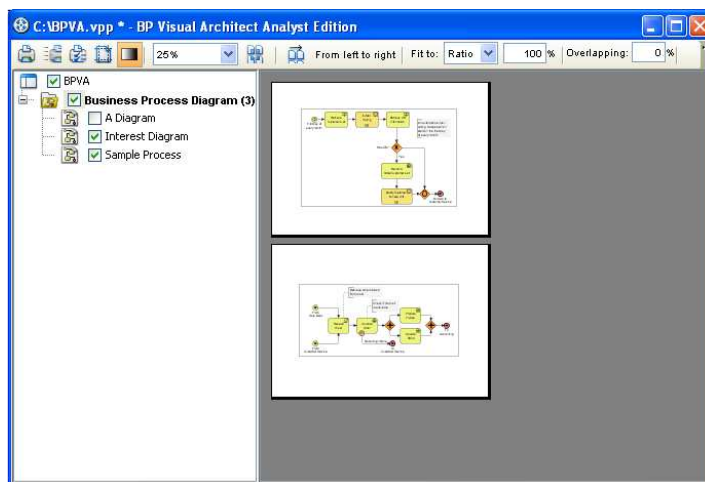


Figure 4.2 - Printing diagrams with preview

2. Click on the **Print** button  on the Print Preview toolbar. The **Print** dialog box appears.

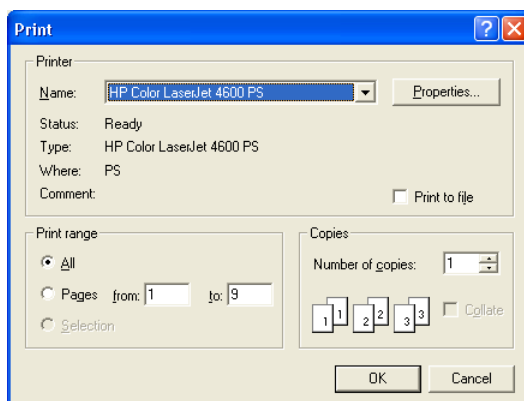


Figure 4.3 - The Print dialog box

3. Select the printer to use, the page range and the number of copies to be printed. You may click on the **Properties...** button to configure the printer-specific properties as well.
4. Click **OK** to start printing.

## Page Setup

Page Setup allows user to specify the page size, the orientation as well as the margins of the pages.

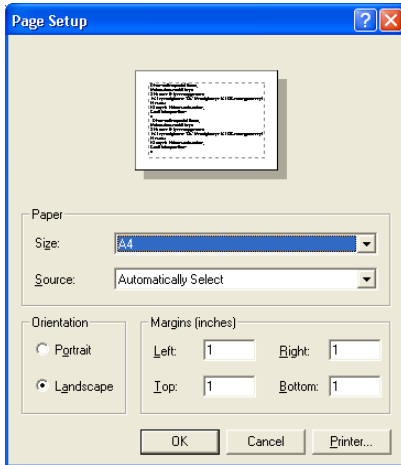



Figure 4.4 - The Page Setup dialog box

1. Click on the **Page Setup** button  on the toolbar. The **Page Setup** dialog box appears.
2. You can click on the **Size** drop-down menu to select the paper size to use.
3. You can select the orientation for the page(s) to be printed (either Portrait or Landscape) in the **Orientation** field.
4. You can enter the value into the **Left**, **Right**, **Top** and **Bottom** text fields to adjust the size of the corresponding margin.
5. Click **OK** to apply the settings.

## Adjusting Margins

The Margins pane allows user to specify the margins of the pages, header and footer.

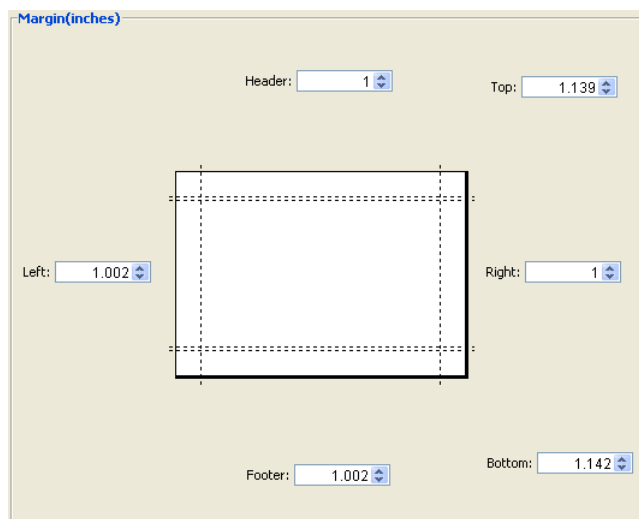




Figure 4.5 - Adjusting margins

1. Click on the **Adjust Margins** button  on the toolbar. The preview area shows the margin setting page.
2. You can edit the margins sizes by entering the sizes into the text fields. Alternatively, click on the spinner buttons to increase/decrease the margin sizes.
3. Click the **Finish Adjust Margin** button  when you have finished configuring the margin settings. The margin sizes will then be updated.



## Zooming Pages

Diagrams can be zoomed in or zoomed out according to user preference.

Click on the **Zoom** drop-down menu to select the desired zoom ratio.

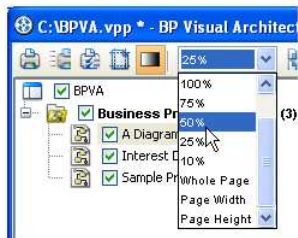


Figure 4.6 - Selecting the zoom ratio

The preview area will show the diagrams in the zoom ratio that you have selected.

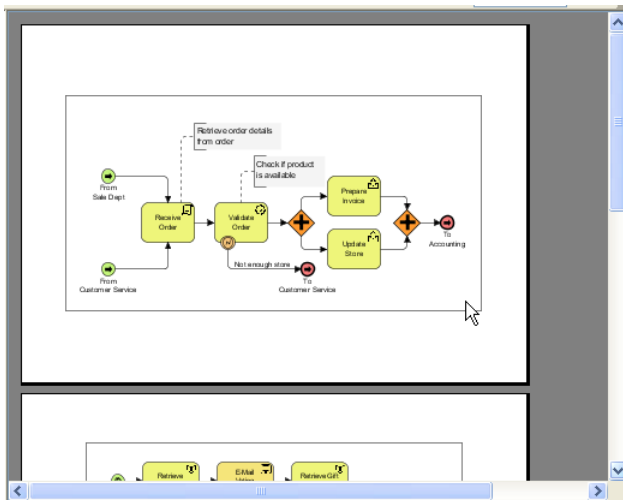




Figure 4.7 - The zoomed print preview

## Selecting the Preview Layout

There are two layouts that you can select for the print preview, the **Paper Base Layout** and the **Diagram Base Layout**.

If the **Fit to Pages** option is selected, and there are multiple pages in the printout, selecting **Paper Base Layout** will cause the distribution of pages to be paper-oriented (the diagram size is ignored in arranging the preview); while selecting **Diagram Base Layout** will cause the distribution of pages to be diagram-oriented.

Note that this option affects the preview only; the order of the printout remains unchanged

To select a layout of the preview, click on the **Paper Base Layout** button  or **Diagram Base Layout** button  on the toolbar, a popup menu appears where you can select the layout to use.

The preview after applying the Paper Base Layout:



Figure 4.8 - Paper Base Layout

The preview after applying the Diagram Base Layout:

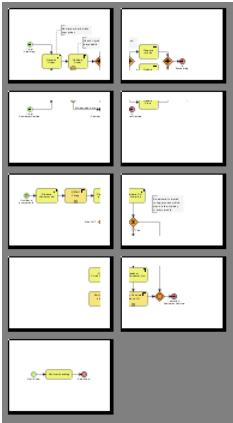


Figure 4.9 - Diagram Base Layout

## Setting Paper Place Style

You can select the paper place style to change the order of the printout. To select the paper place style, click on the **Paper Place Style** button on the toolbar. A popup menu appears where you can select a paper place style.

Consider a large diagram is divided into many pages, selecting **From left to right** will arrange the printout order from the pages on the left to the pages on the right, while selecting **From top to bottom** will arrange the print order from the pages on the top to the pages on the bottom.

The order of the printout after selecting **From left to right**.

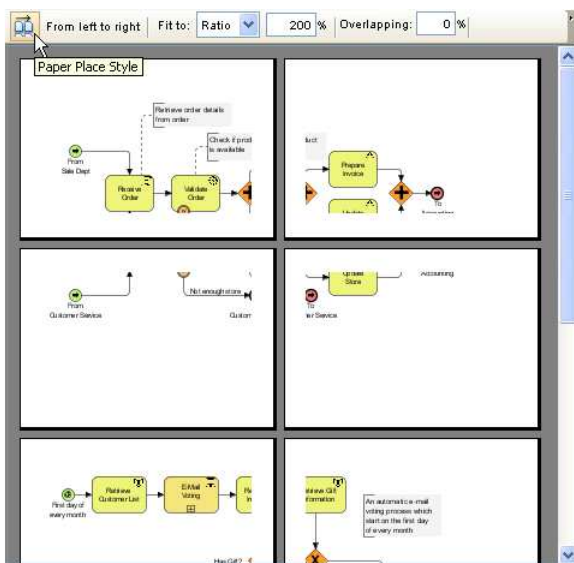


Figure 4.10 - Selecting the Paper Place Style

## Fit to Ratio

Fit to Ratio is used to resize the diagrams in the printout to a specific ratio.

Click on the **Fit to** drop-down menu and select **Ratio**.

You can enter the ratio into the textbox. For example, enter 150 to set the ratio to 150%. After you have edited the ratio, the diagrams in the printout will be resized to the new ratio.

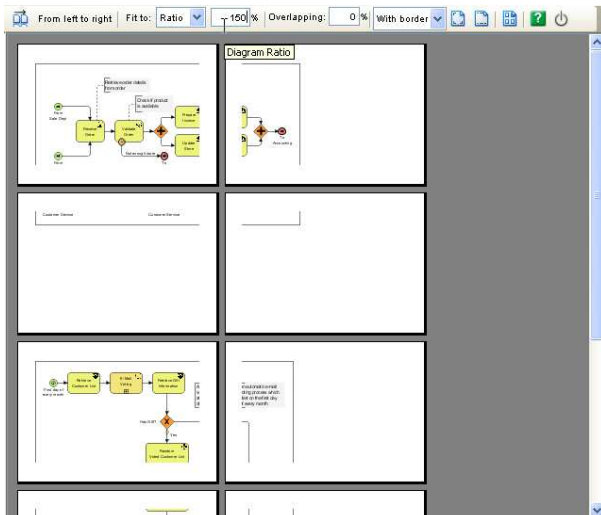



Figure 4.11 - Fit to ratio

## Fit to Pages

Fit to Pages is used to split the diagram to desired number of pages when printing.

1. Click on the **Fit to** drop-down menu and select **Pages**.
2. Click on the **Multiple Pages** button  on the toolbar. The page selector appears.

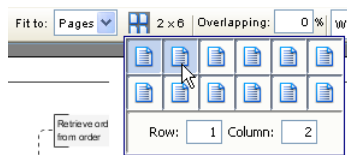


Figure 4.12 - Fit to Pages

3. Click on the row-column combination to select it (note that you can click and drag on the page selector to extend the selection). The diagram will be split into multiple pages by the rows and columns that you have selected.

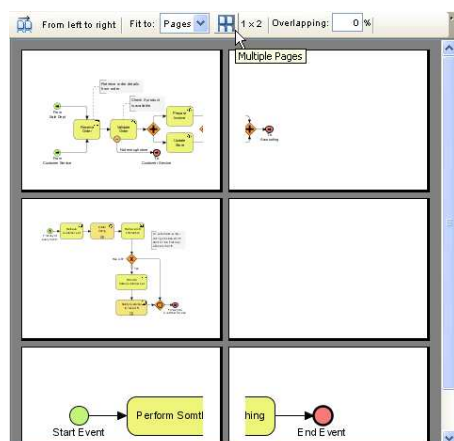


Figure 4.13 - Printing to fit multiple pages

## Setting the Diagram Overlap Percentage

Overlapping is used when users want the diagrams to have overlapping at the boundaries between pages. This is particularly useful when you have a large diagram that span multiple pages and you want to stick the pages of the printout together; the overlapping area can then be used as a hint when sticking the pages together.

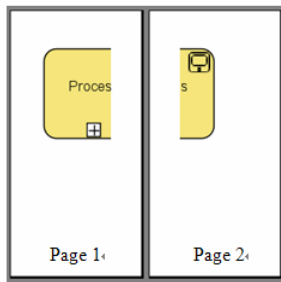


Figure 4.14 - Printing with no overlapping between pages

1. Click on the Overlapping textbox to input the overlapping percentage and press the Enter key.
2. The printing area near the boundaries of the pages will be duplicated by the overlapping percentage inputted.

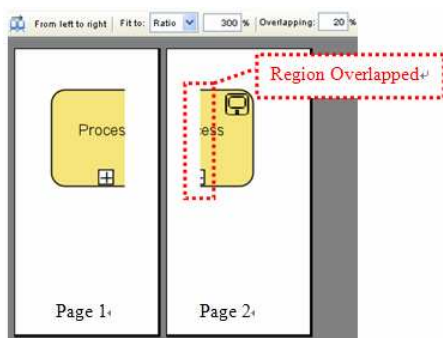


Figure 4.15 - Printing with overlapping percentage specified

## Showing/Hiding Clip Marks on Page

Clip marks act as an indication of the boundary of a page.

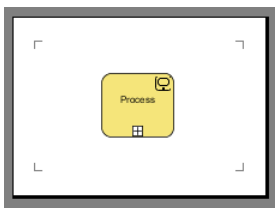


Figure 4.16 - Showing clip marks on pages

To show clip marks on the printout click on the **Show Clip Marks on Page** button . You will see the boundaries of the pages are surrounded by clip marks. To hide the clip marks click on the **Hide Clip Marks on Page** button  again.

## Editing Header/Footer of the Pages

To edit the header/footer of the printout click on the **Edit Header/Footer** button  on the toolbar. It will then switch to the edit header/footer pane.

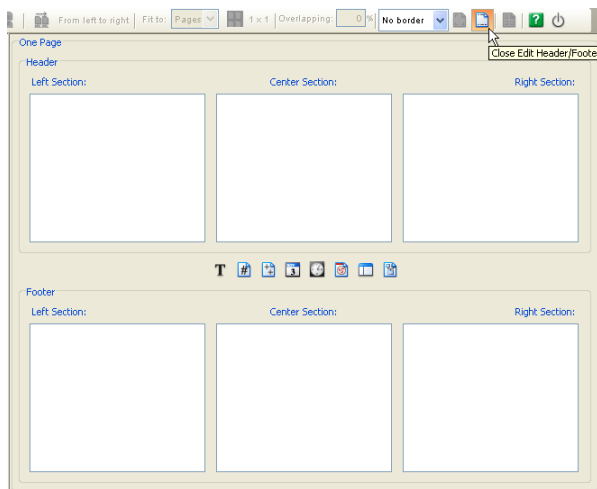


Figure 4.17 - Editing header/footer of pages

You can edit the header and the footer in the **Header** panel and the **Footer** panel respectively. Each of the panel consists of the **Left Section**, **Center Section** and the **Right Section**, which represents the position that the content will be located in the header/footer.

There is a toolbar between the **Header** panel and the **Footer** panel, which facilitates the editing of header/footer. The description of the buttons in the toolbar can be found in the following table:










Icon	Name	Description
	Select Font	Select the font to use for the selected section. Note that the section must be active (focused) in order to select font for it
	Insert Page Number	Insert the page number in the selected section
	Insert Number of Pages	Insert the total number of pages in the selected section
	Insert Date	Insert the date that the printing starts in the selected section
	Insert Time	Insert the time that the printing starts in the selected section
	Insert File Name	Insert the file name of the BP-VA project in the selected section
	Insert Project Name	Insert the name of the BP-VA project in the selected section
	Insert Diagram Name	Insert the diagram name in the selected section

Table 4.2

After you have finished editing the header/footer, click on the **Close Edit Header/Footer** button  to switch to the print preview mode. A sample page that has the header and footer formatted is shown in the picture below:

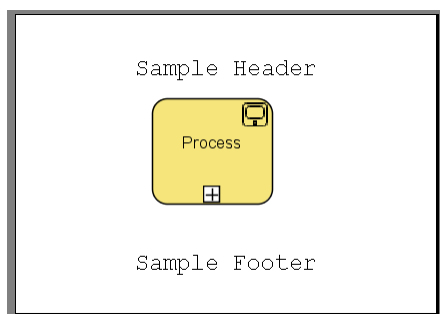



Figure 4.18 - Preview with header/footer

## The Multiple Page Mode

The Multiple Page Mode allows users to configure how the diagrams should be distributed in multiple pages. To switch to the Multiple Page Mode click on the **Multiple Page Mode** button  on the toolbar.

Click on the button beside the **Multiple Pages** field will invoke the page selector, where you can select the row-column combination for the printout. Alternatively, you can type in the **Row** and **Column** text field directly.

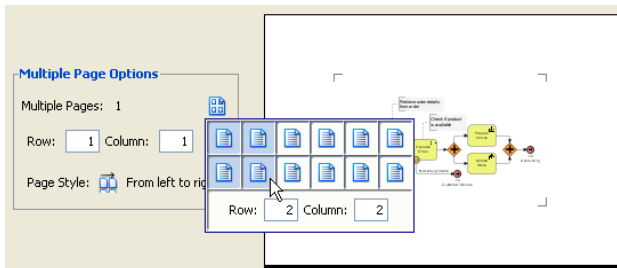


Figure 4.19 - Multiple page options

Click on the button beside the **Page Style** field to change the printout order. Consider a large diagram is divided into many pages, selecting **From left to right** will arrange the printout order from the pages on the left to the pages on the right, while selecting **From top to bottom** will arrange the print order from the pages on the top to the pages on the bottom.

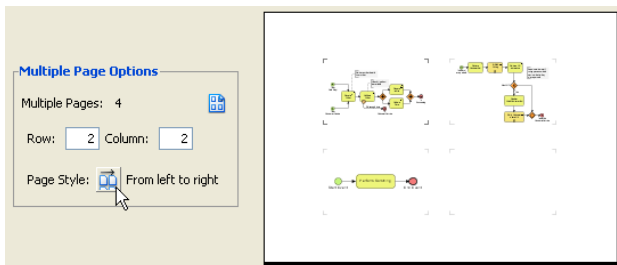



Figure 4.20 - Selecting page style

After you have finished configuring the multiple page settings click on the **Close Multiple Page Mode** button to close the Multiple Page Mode.

## Printing Diagrams with Quick Print

The Quick Print feature allows you to print diagrams without previewing them, hence speed up the print job. To perform quick print, perform one of the following actions:

- Select **File > Quick Print...** from main menu
- Select **File > Print...** from main menu. This displays the Print Preview pane. Click  on the toolbar of the Print Preview pane.

In both cases, the **Quick Print** dialog box will appear. Configure the options and click **OK** to start printing.

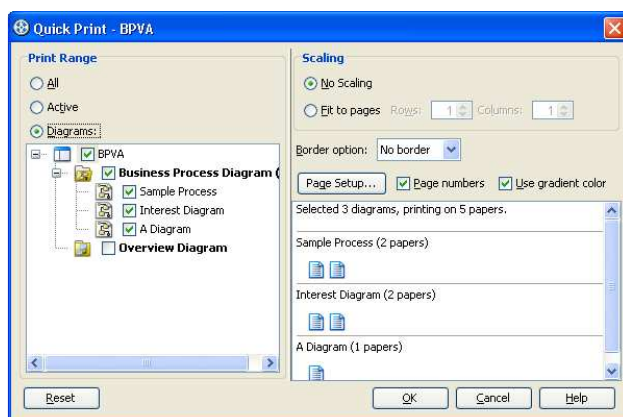


Figure 4.21 - The Quick Print dialog box

Field	Description
Print Range	Click on either of the options below to specify the print range. All - Print all the diagrams within the current project Active - Print only the active diagram Diagrams - Check from the diagram tree to select the diagram(s) for printing
Scaling	Select <b>No scaling</b> to print with diagram's original size. Number of pages used on each diagram is subject to the scale of diagrams. Select <b>Fit to pages</b> to print with specified number of pages per diagram with respect to the specified number of rows and columns.
Border option	Select to print the diagrams with or without borders.
Page Setup...	Page Setup allows you to specify the page size, the orientation as well as the margins of the pages.
Page numbers	Check to print diagrams with page number on it.
Use gradient color	Select to use gradient color in printout. Since printing gradient color will use up lots of memory, it is recommended to turn this option off for better performance.

Table 4.3





# 5

## Copying and Export Diagrams

Beside standard diagramming and modeling features, BP-VA supports the copying of diagrams within the tool, or as images or OLE to other applications including Microsoft® Office. You may also make use of BP-VA export function to export diagrams as images of as another BP-VA project.

In this chapter:

- ◆ Copy
- ◆ Paste
- ◆ Exporting Diagram as Images

# Chapter 5 - Copying and Exporting Diagrams

## Copy

You can select and copy diagram element(s) and reuse it later on. There are five kinds of copy available in BP-VA.

- Default Copy
- Copying within BPVA
- Copying to Clipboard as OLE
- Copying to Clipboard as Image (JPG)
- Copying to Clipboard as Image (EMF)

## Default Copy

The default copy is triggered when the hotkey **Ctrl + C** is pressed. The actual action performed by default copy follows the BP-VA application option (as configured in the Options dialog box - > Diagramming category - > Environment page). The default copy action can be set to one of the following:

- Copying within BPVA
- Copying to Clipboard as OLE
- Copying to Clipboard as Image (JPG)
- Copying to Clipboard as Image (EMF)

The default "default copy" action is Copying with BPVA.

## Copying within BPVA


Copying diagram elements within BPVA allows you to copy selected diagram elements to the application clipboard. You can paste the diagram elements to diagrams of the current project or to those of a different project.

### Note



You cannot paste the selected content to other applications.

To copy selected diagram elements within BPVA, perform one of the following actions:

- Select **Edit > Copy > Within BPVA** from main menu.
- Click on the **Copy** drop down button on the toolbar and select **Copy within BPVA**  from the drop down menu.
- Right-click on the selected diagram elements and choose **Copy > Copy within BPVA** from the context menu.

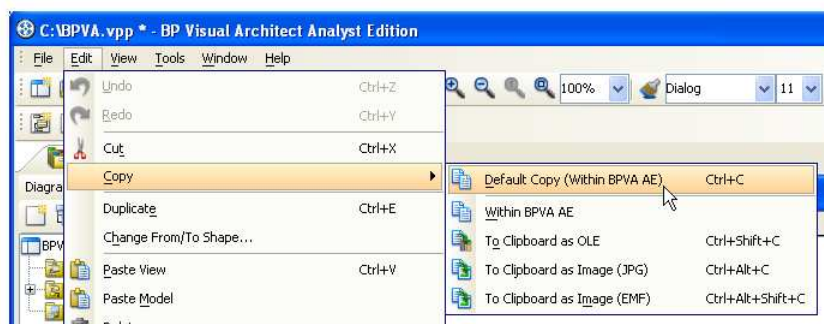


Figure 5.1 - Copying within BP-VA

## Copying to the Clipboard as OLE


Copying diagram elements to the system clipboard as OLE will copy the content as an OLE object, which can be pasted to any OLE containers like Microsoft® Word, Excel and PowerPoint. You can edit the copied content directly within the document.

### Note



The copy to system clipboard as OLE feature is available on Windows platforms only.


To copy selected diagram elements to the system clipboard as OLE, perform one of the following actions:

- Select **Edit > Copy > To Clipboard as OLE** from main menu.
- Click on the **Copy** drop down button on the toolbar and select **Copy to Clipboard as OLE**  from the drop down menu.
- Right-click on the selected diagram elements and choose **Copy > Copy to Clipboard as OLE** from the context menu.
- Press **Ctrl-Shift-C**.

## Copying to the Clipboard as Image (JPG)

Copying diagram elements as JPG image will copy the selected diagram element as a JPG image to the system clipboard. This feature is available on any platforms.


To copy selected diagram elements to the system clipboard as JPG image, perform one of the following actions:

- Select **Edit > Copy > To Clipboard as Image (JPG)** from main menu.
- Click on the **Copy** drop down button on the toolbar and select **Copy to Clipboard as Image (JPG)**  from the drop down menu.
- Right-click on the selection and choose **Copy > Copy to Clipboard as Image (JPG)** from the context menu.
- Press **Ctrl-Alt-C**.

## Copying to the Clipboard as Image (EMF)

Copying diagram elements as EMF image will copy the selected diagram element as an EMF image to the system clipboard. Unlike copy as JPG image, the copied content is in EMF (Enhanced Metafile) format, which is a more scalable format that image quality can remain even being resized/zoomed.

To copy selected diagram elements to the system clipboard as EMF image, perform one of the following actions:

- Select **Edit > Copy > To Clipboard as Image (EMF)** from main menu.
- Click on the **Copy** drop down button on the toolbar and select **Copy to Clipboard as Image (EMF)**  from the drop down menu.
- Right-click on the selection and choose **Copy > Copy to Clipboard as Image (EMF)** from the context menu.
- Press **Ctrl-Alt-Shift-C**.

## Paste

You can select different paste methods according to what you have copied.

- Most commonly you will paste copied diagram elements obtained using the "Copy within BPVA" command, in that case you can choose whether the pasted diagram elements will share the same model as the source elements.
- If you have copied an image to the clipboard, either within BP-VA or using external applications, you can paste the copied content as an image shape in the diagram.

## Pasting Copied Diagram Elements

You can paste the copied diagram elements to the current diagram or another one. There are two ways in pasting diagram elements. One is to paste with model sharing and another one is to paste without model sharing.

### Note




You can only paste the content that is copied using the "**Copy within BPVA**" command.

## Pasting with Model Sharing

The pasted diagram elements share the same model of the copied diagram elements. Any changes made on the model of pasted elements will result in the same changes appearing on the model of the elements copied.


To paste diagram element with model sharing, perform one of the following actions:

- Select **Edit > Paste** from main menu.
- Click on the **Paste** drop down button on the toolbar and select **Paste**  from the drop down menu.
- Right-click on the target diagram and choose **Paste** from the context menu.
- Press **Ctrl-V**

## Pasting without Model Sharing

It clones a copy of the copied diagram elements, including their model, and pastes them to the diagram.

To paste diagram elements without model sharing, perform one of the following actions:

- Select **Edit > Paste (not Share Model)** from main menu.
- Click on the **Paste** drop down button on the toolbar and select **Paste (not Share Model)**  from the drop down menu.
- Right-click on the target diagram and choose **Paste (not Share Model)** from the context menu.

## Pasting as Image Shape

With image shape, you can easily annotate and document your diagrams with related images. Instead of creating an image shape manually, you can copy an image from any application to the clipboard and then paste it to the diagram as a new shape.

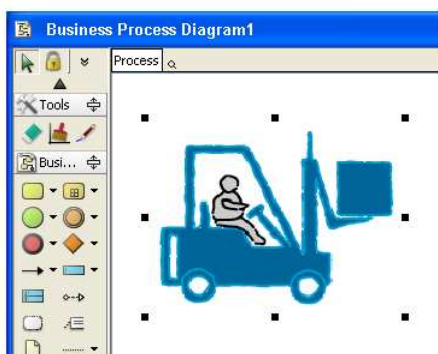



Figure 5.2 - Image Shape

To paste an image shape, perform one of the following actions:

- Select **Edit > Paste** from main menu.
- Click on the **Paste** drop down button on the toolbar and select **Paste**  from the drop down menu.
- Right-click on the target diagram and choose **Paste** from the context menu.
- Press **Ctrl-V**

## Exporting Diagram as Images

### Exporting the Active Diagram as an Image

This feature is to export the active diagram as image file. To export the active diagram as image file, perform one of the following actions:

- Select **File > Export > Active Diagram as Image...** from main menu.
- Click on the **Export Image** drop down button on the toolbar and select **Export Active Diagram as Image** from the drop down menu.

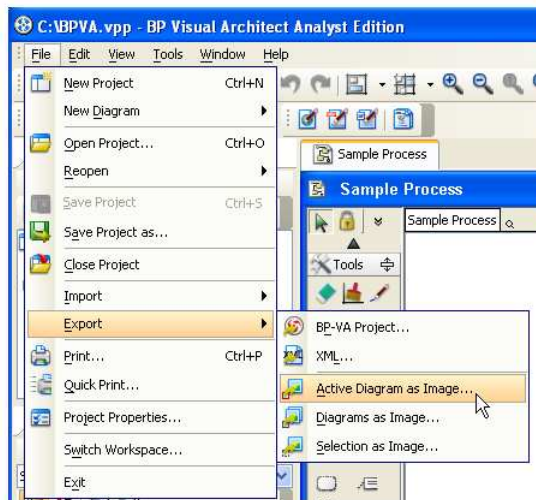


Figure 5.3 - Exporting the active diagram as image

In both cases, a file chooser dialog box will appear where you can specify the destination file path of the image, and you can select the image format of the exported image.

### Exporting Diagrams as Images

This feature is to export one or more diagrams as images. To export the active diagram as image file, perform one of the following actions:

- Select **File > Export > Diagrams as Image...** from main menu.
- Click on the **Export Image** drop down button on the toolbar and select **Export Diagram as Image** from the drop down menu.

In both cases, the **Diagram Exporter** dialog box will be displayed. You can specify the diagrams to export, and preview the exported image. After you have configured the export settings click **Export** to export the diagrams.

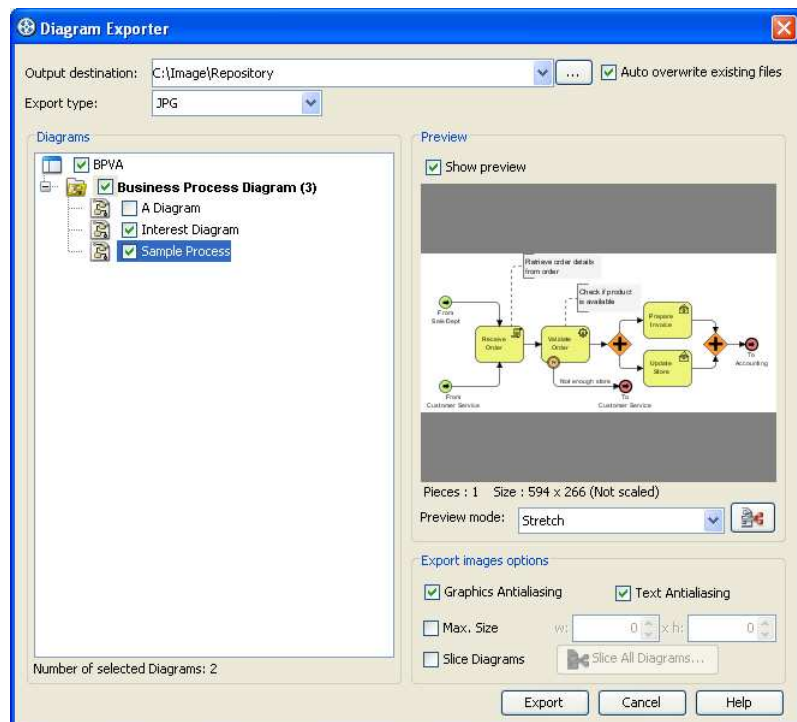


Figure 5.4 - Diagram Exporter

Field	Description
Output destination	The Output destination is the directory where all the exported images are saved to. You can enter the path in the text field directly, or you can click on the ... button to browse for the directory.
Auto overwrite existing files	You can check the <b>Auto overwrite existing files</b> checkbox to allow overwrite of files in the export process.
Export type	To select the image format of the exported image click on the pull-down box beside the <b>Export type</b> field and select the format you want to use.
Diagrams	The <b>Diagrams</b> pane shows the diagrams in the current project. Check the checkbox beside the diagram that you want to export. The number of selected diagrams is displayed at the bottom of the Diagrams pane. Besides, the <b>Preview</b> pane allows you to preview the exported image of the selected diagram.
Preview	The <b>Preview</b> pane shows the preview of the exported image of the selected diagram in the Diagrams pane. You can check/uncheck the <b>Show preview</b> checkbox to enable/disable the preview. You can select the size of the preview image by selecting from the pull-down box beside the <b>Preview mode</b> field. Selecting <b>Stretch</b> will show the image in scaled size that fits to the preview area, while selecting <b>Real size</b> will show the image in its actual size.
Anti-aliasing	Anti-aliasing is a method which handles the staircase pixels of slanted lines and curves to make them look smoother. You can apply anti-aliasing to the exported images. To apply anti-aliasing to graphics, check the Graphics Antialiasing checkbox. Likewise, you can check the Text Antialiasing checkbox to apply anti-aliasing to text.
Max. Size	Specify the maximum size of the exported images.
Slice Diagram	Split exported images as slices.

Table 5.1

## Exporting and Importing (Merging) of Project

If you are maintaining a large BP-VA project that contains many diagrams, you can use the export project facility to split it into smaller projects by selecting the desired diagrams. Each exported project is self-contained, which means it has all the diagrams and model elements of the selected diagrams, and the modification of the project does not affect the original project that it is derived from.

After you have modified the exported project, you can merge the changes to the original project using the merge project facility. The project export and merge facilities together facilitate the sharing of a project among collaborative workers.

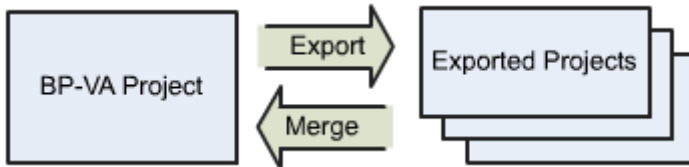


Figure 5.5 - Export/Import projects

## Exporting Project

To export the current project into a new project, choose **File > Export > BP-VA Project...** from main menu. This displays the **Export Project** dialog box. Specify all the relevant information and click **Export**.

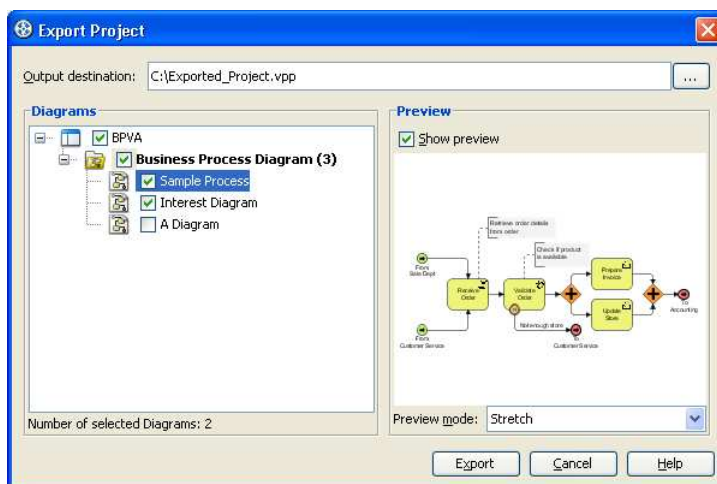


Figure 5.6 - The Export Project dialog box

Field	Description
Output destination	The <b>Output destination</b> is the file path where the exported project is saved to. You can enter the path in the text field directly, or you can click on the ... button to browse for a BP-VA project file.
Diagrams	Check the diagrams for exporting. Models inside those diagrams will also be exported.
Preview	The <b>Preview</b> pane shows the preview of the exported image of the selected diagram in the <b>Diagrams</b> pane. You can check/uncheck the <b>Show preview</b> checkbox to enable/disable the preview. You can select the size of the preview image by selecting from the pull-down box beside the <b>Preview mode</b> field. Selecting <b>Stretch</b> will show the image in scaled size that fits to the preview area, while selecting <b>Real size</b> will show the image in its actual size.

Table 5.2

## Importing (Merging) a BP-VA Project

To import a project, open the master project in BP-VA (the project where the exported projects are derived from). After that, select **File > Import > BP-VA Project...** from main menu. This displays the **Open** dialog box. In the dialog, locate the BP-VA project file (with extension .vpp) and click **Open** to open the project file. The changes in the selected project will be merged to the master project.

### Note



You can select a project to be imported even it is not created using project export. However, the merging process will update every model elements in the project, instead of only the modified elements.



# 6

## Business Process Diagram Samples

To have better understanding of modeling business process from problem statement to business process diagram. We are providing some samples:

In this chapter:

- ◆ Retail Sales
- ◆ Car Rental
- ◆ Software Helpdesk
- ◆ Online Store

# Chapter 6 - Business Process Diagram Samples

## Retail Company

ABC is a retail company. The following problem statement and business process diagram describe the flow of sales order with delivery and payment arrangement. In addition, it mentions some of exception handling within the process.

### Problem Statement

ABC retail sales company wants to keep track of its sale. Purchase requests from customer will automatic generate a sale order with a generated unique number and a calculated total amount. Each sale order contains a unique number, a set of ordered products, a total amount, a payment arrange, a state and an invoice. Each order product contains order product identify and order quantity. If one or more purchasing product is not containing enough quantity for the sales order, the sales order then will hand over to customer service for notify customer about the particular situation. Otherwise, the sales order is approved and continue with delivery part.

In the situation of not enough quantity, customer service will ask customer to choose one of possible solution which are wait, order less and cancel order. If wait is chosen, an urgent production request is sent to factory. If order less is chosen, the sale order will be updated. Otherwise, cancel order is default chosen. Customer service will try to give special offer to customer. Sales order will be update is customer accept the offer or the sales order will be cancelled. After customer choosing wait or order less solution and performed the relative actions, the sales order is approved and continue with delivery part.

In delivery part, an invoice will be prepared and sent for the approved sales order. Then the ordered products will wait for payment and delivery. There are two kinds of receiving payment arrange, POD and credit period. By default, sales orders are POD (Pay on delivery) ignores special offer aspects. In case of POD, the payment must receive on or before the ordered products delivery or the delivery will be terminated and the sales order will forward to customer service with follow up action. In the other arrange credit period, ordered products will delivery first and the payment is accepted for delay within a period. If the period is past and the payment is not yet received, the sales order will forward to customer service with follow up action. In addition, when a payment is received no matter which kind of receiving payment arrange, the invoice will be updated and the sales order will be completed.

### Business Process Diagram

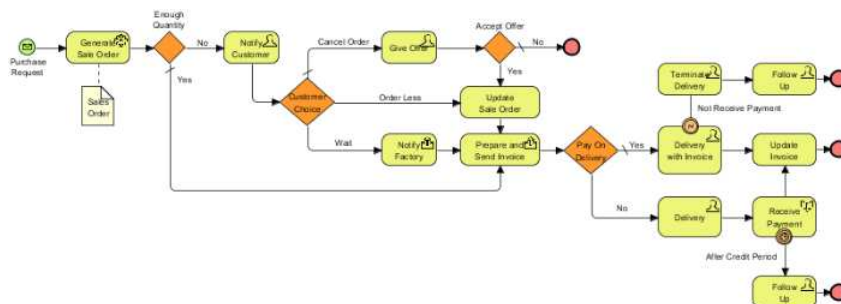


Figure 6.1 - Business Process Diagram (Retail Company)

## Car Rental Process

Car rental Process is a business process about the flow of renting car to public of a car rental agency. It describes the main flow of rent car contract with some business constraints.

### Problem Statement

A car rental agency rents cars to the public. A customer can rent a car if they have a valid driver's license and can pay for the rental. A rental contract is drawn up to reflect the details. There are 3 classifications of cars based on size. Within each classification, both wagons and sedans and both automatic and manual transmission versions are maintained. A contract is terminated once the rental is complete. Rental of trucks is being considered.

## Business Process Diagram

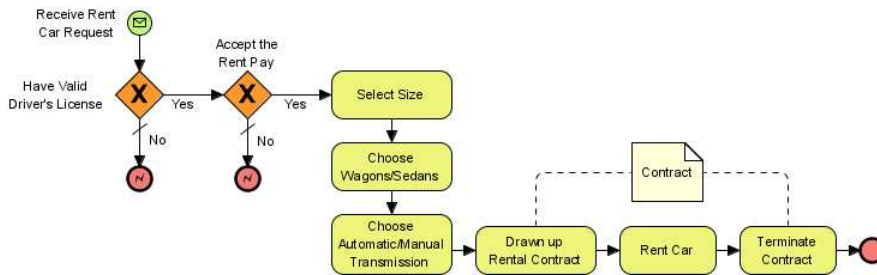


Figure 6.2 - Business Process Diagram (Car Rental Process)

## Software Helpdesk

Software Helpdesk is a process about technical support of ABC Software Helpdesk. It describes the flow of customers' queries with the follow up actions.

### Problem Statement

ABC Software Helpdesk received customers' queries related to the software products they supported. If the helpdesk staff can resolve the queries, they do so and give the customer a solution; otherwise they identify a problem and refer this to Second-line Support. Second-line Support then reproduces and investigates the problem. If it can be solved by advice, they refer it back to Helpdesk staff; otherwise, if there is a software defect which required a change to the software, they raise a software change request to the Software Development Team. After the software is coded and tested, the hot fix will be released and hand over to Second-line Support to follow the outstanding case. Whatever the software has changed or not, Second-line Staff will issue the knowledge for the Helpdesk staff to inform the customers. The Customer will then receive the knowledge and the hot fix software for installation if exist.

## Business Process Diagram

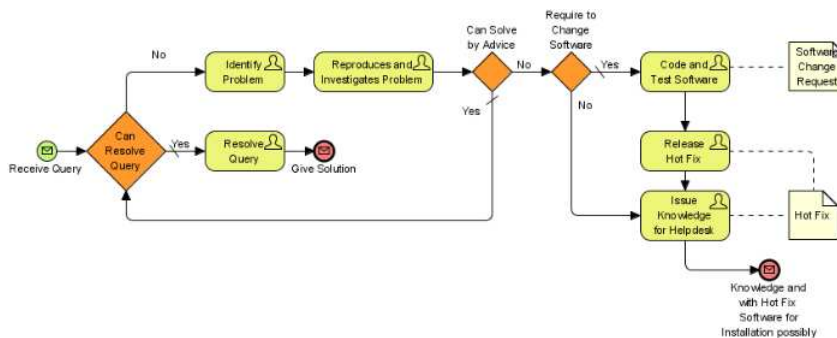


Figure 6.3 - Business Process Diagram (Software Helpdesk)

## Online Store

Online Store is a process about sales of an online store. It describes the flow of sales order with its creation and payment arrangement. In addition, it includes some business rule within the process.

### Problem Statement

A customer can place one or more orders from an online store. Each customer has a credit rating. If the credit rating is good, the customer can make the payment either with a credit card or a bank check. However, if the credit rating is poor, the customer has to pay in cash. Each order is an aggregate of different order items. A customer's order can have multiple items with varying quantities. Draw a Business Process Diagram for the above online store transaction.

## Business Process Diagram

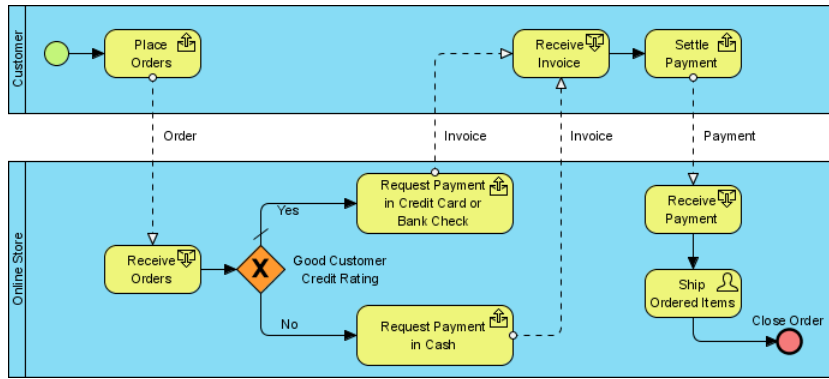


Figure 6.4 - Business Process Diagram (Online Store)