



Developer Fast Start

PegaRULES Process Commander V5.5

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PegaRULES Process Commander v5.5

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Chapter 1:

Overview

Welcome to the *Developer Fast Start*. This book introduces PegaRULES Process Commander and provides hands-on instructions for modifying an application built on PegaRULES Process Commander. It also introduces terms and skills for application developers. (For brevity, the product is hereafter called Process Commander.)

The hands-on tasks involve working with a small application called the Order Entry System. The application allows employees of AlphaCorp to submit purchase order requests using their Web browser and it automates the process of entering, routing, and approving purchase orders.

The Order Entry System application is intentionally incomplete and simplified. Your assignment is to make changes and enhancements to it. The tasks presented in this book show you how to extend the application by adding and modifying rules to meet the needs of AlphaCorp. By following these exercises, you will learn to:

- Navigate within the Developer portal
- Change the rules to reflect new steps in a business process
- Create rules that enhance the application user interface and behavior
- Produce a Microsoft Word document that describes the application and lists its files, functions, and features.

You make the modifications on your Process Commander system in a RuleSet designated for your development. This book takes you step-by-step through each modification.

Business Process Management

According to the Business Process Management Group (at www.bpmg.org), **Business Process Management** (BPM) is the organizational activity "that incorporates: Planning, Designing, Building, Operating, Maintaining, and Improving the business processes and their enabling capabilities forever and for everyone. Business processes are capabilities, as important as facilities, people, and technology. Like all assets they must be managed from inception to retirement."

Process Commander supports **Simply Smart Business Process Management** through rules covering flows, assignments, routing, decisions, and automated processing. Process Commander applications provide process management and automation through six functional capabilities, informally known as the **Six R's**:

- **Receiving** — Accepting and capturing the essential data describing work from multiple sources, including keyboards, scanners, and external systems, in a wide range of media and formats.
- **Routing** — Using characteristics of the work together with knowledge about the workforce to make intelligent matches and assignments.
- **Reporting** — Providing real-time visibility of work in progress, work completed, productivity, bottlenecks, and quality.
- **Responding** — Communicating status, requests for information, and progress to the work originator and to other people involved in the work, by e-mail, fax, written mail, and other means.
- **Researching** — Accessing external systems and databases through connectors to support analysis and decision-making.
- **Resolving** — Completing the work and updating downstream systems promptly through automated processing and automated support of users,

Process Commander is the only BPM solution that automates both the business rules and the business processes that drive work to completion.

Additionally, Process Commander employs a sophisticated common object model to deliver the power of process and practice integration. This integration is achieved without the expense and resources associated with maintaining separate business process and rules databases, user interfaces, test environments, and production environments.

Structure of This Document

This book includes the following chapters and appendices:

- Chapter 2 describes how to use Order Entry System application.
- Chapter 3 describes how to improve the application by changing the purchase order request process.
- Chapter 4 describes how to update the user interface.
- Chapter 5 reviews all tasks you completed in the previous chapters.
- Chapter 6 describes how to document your application using Process Commander.
- Appendix A provides a description of the icons and buttons found on the Process Commander toolbar.
- Appendix B provides additional information that might be useful when setting up your workstation.

Tip: Print Appendix A and have it available to help you learn about the toolbar buttons.

Support Knowledgebase

The Pega Developer Network (PDN), located at <http://pdn.pegacom>, is the primary technical resource area for the PegaRULES Process Commander developer community. The PDN contains a broad range of technical articles including troubleshooting and “how-to” information as well as a comprehensive and searchable knowledgebase to help speed application development.

The PDN also links directly to the customer support section of the Pegasystems website located at <http://pdn.pegacom/ProductSupport/ProductSupport.asp> where customers and partners submit support and product enhancement requests.

Prerequisites

To follow the steps in this book, verify the following:

- Process Commander Version 5.5 is installed and all error conditions are resolved. This specific software version is required to accommodate the Order Entry System application that you will use in this Developer Fast Start tutorial.
- The installed Process Commander RuleSet versions are not lower than those listed below:

Pega-IntSvcs:05-05

Pega-ProCom:05-05

Pega-Rules:05-05

Pega-WB:05-05

- A Windows VISTA or Windows XP workstation with Microsoft Visio 2002, 2003 or 2007 (any edition) is installed.
- Microsoft Word 2002 or later is installed.
- Microsoft Internet Explorer (IE) version 6.01 or version 7 with current Microsoft security patches is installed. All pop-up blockers (such as those provided by Yahoo! or Google toolbars) must be disabled.

Appendix B also describes Internet Explorer and Microsoft Visio settings appropriate for Process Commander developers.

Chapter 2:

Using the Application

This chapter shows you how to use the application to experience it from the worker and manager points of view by:

- Creating a purchase order request
- Approving the purchase order request

In Chapters 3 and 4, you assume the role of developer and change the business process, appearance, and functions supported by the application.

Creating a Purchase Order

1. Log in as WorkUser@AlphaCorp.com with the password **rules** to access the Order Entry System application. The Work User portal appears (Figure 2-1).

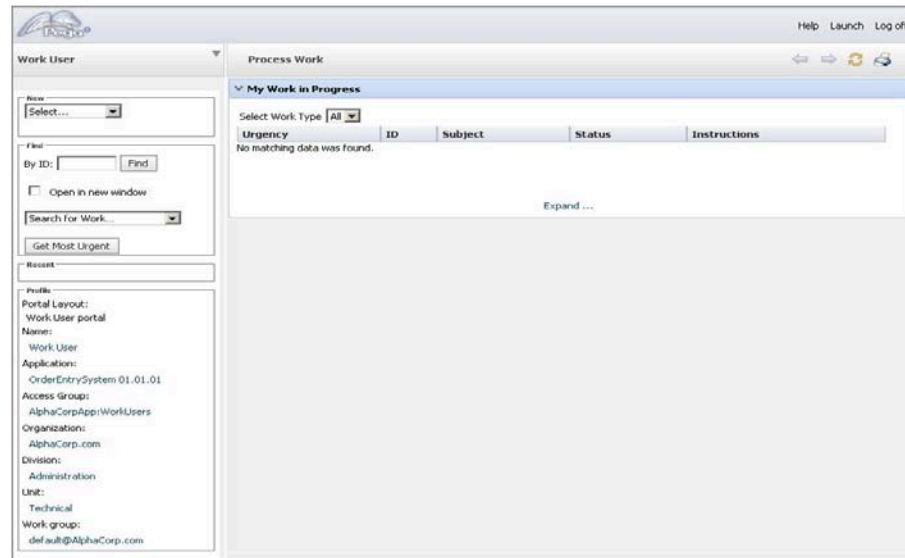


Figure 2-1. User Portal

If prompted with a Windows Security warning, click Install (Figure 2-2). This may occur a few more times as Windows downloads each needed ActiveX control.

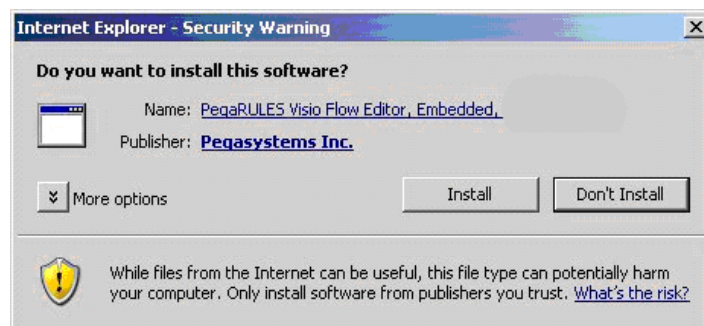



Figure 2-2. Windows Security Warning

Figure 2-1 shows the portal layout typical for application users who are not managers. It provides access to work, status information, and facilities for searching through both incomplete and completed work. The colors, fonts, and logo used in this layout are Process Commander defaults; you can build applications using your company's standards and formats.

The area to the right labeled My Work in Progress shows any purchase orders you previously entered that are not completely processed. In the

above example, this area, known as your **worklist**, is empty. Each user's worklist contains a prioritized list of work items.

Note: You can exit from the application at any time by clicking the Log Off link at the upper right of this window. Do this before closing the window.

Do not use the Internet Explorer Back button when using Process Commander. Instead, use the Back button at the upper right corner of the window () when it is enabled.

2. Select Purchase Order from the New selection box (Figure 2-3).



Figure 2-3. New Selection Box — Purchase Order

3. On the New Purchase Order form, select IT from the Department Name selection box. Enter a Department Number consisting only of numeric digits (Figure 2-4).

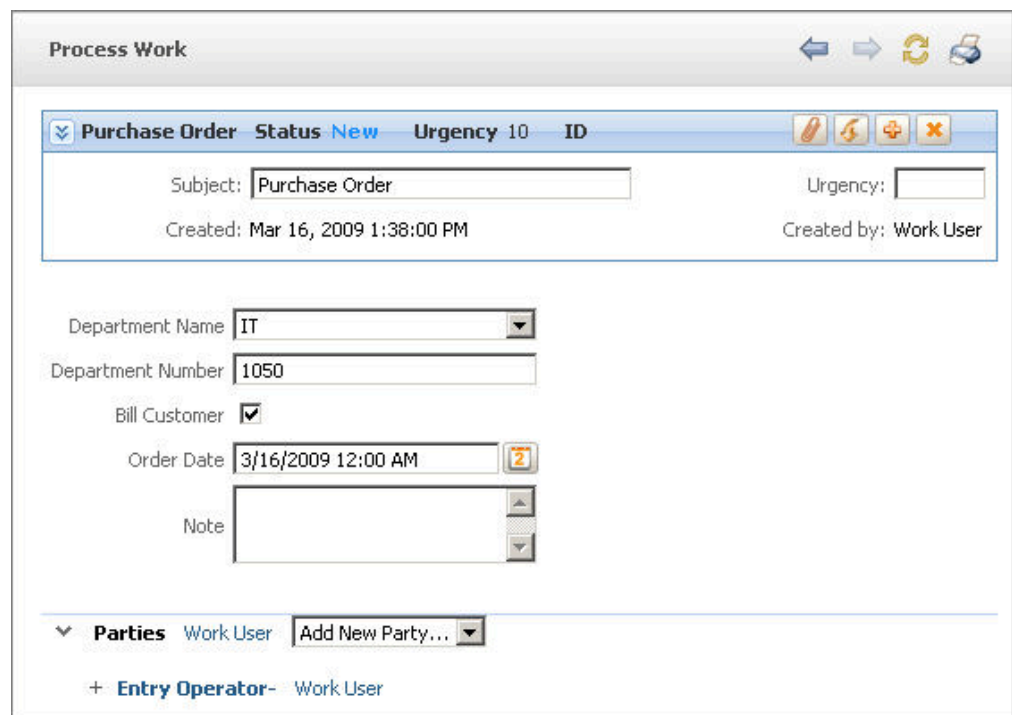


Figure 2-4. New Order Entry Form

- Click Create (located at the bottom of the form) to transmit your input to the Process Commander server. The application creates a purchase order request (also known as a **work object** or work item) and assigns a sequential identifier to it known as the **work object ID**, visible in the top bar (Figure 2-5). In this application, the work object IDs begin with the prefix “PO” to identify purchase orders.

Process Work

Purchase Order Status: New Urgency: 10 **ID: PO-1**

Subject: Purchase Order Urgency:
 Created: Mar 16, 2009 1:38:00 PM Created by: Work User

Enter Order Items OR --select a different action--


Item	*Quantity	Price	Item Total
<input type="text"/>	<input type="text"/>	\$0.00	\$0.00

Submit

Department Name IT
 Department Number 1050
 Bill Customer ☒
 Order Date 3/16/2009 12:00 AM
 Note

Parties Work User
 + Entry Operator- Work User

Figure 2-5. Purchase Order Request PO-1

- Click the  (close) icon in the upper right corner of the form to close the work object. An assignment row for this work object appears on your worklist because additional steps are needed. Figure 2-6 shows a worklist containing one assignment row, for the purchase order.

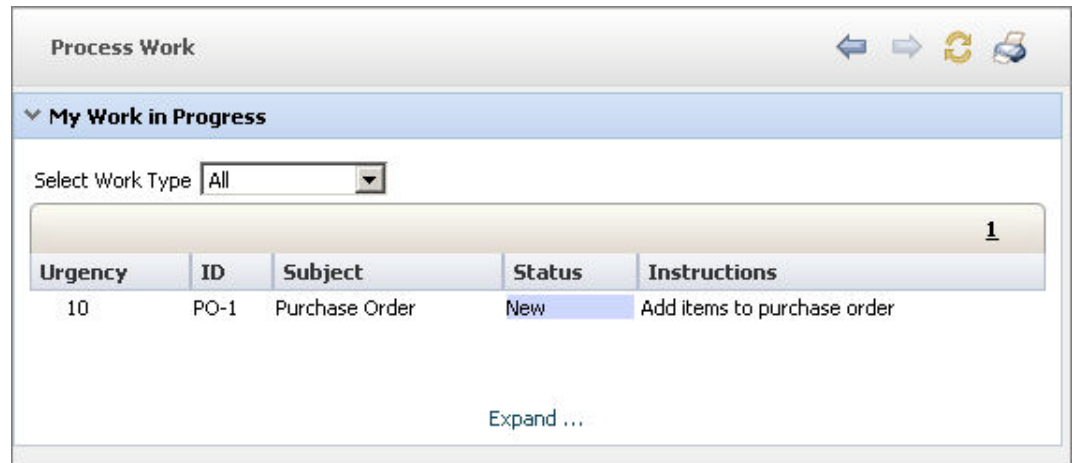

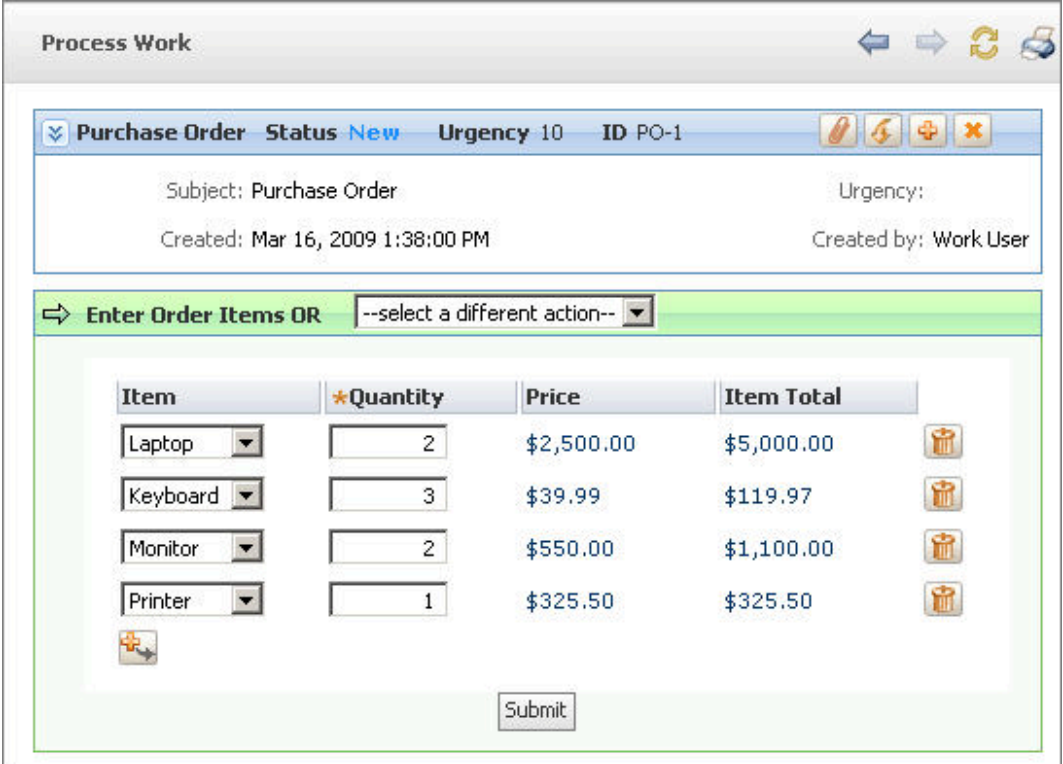


Figure 2-6. Purchase Order in the Worklist

Adding Items to Your Purchase Order

1. On your worklist, locate the purchase order you created. Click the ID to reopen the purchase order form for additional processing.
2. Select an item from the item selection box and enter the quantity to be purchased. Click the Add a Row icon  to add rows and enter additional items (Figure 2-7). The application displays the item price for each item and calculates a line item total price (price multiplied by quantity). Select at least one item and enter a quantity. If you want you can enter several rows. Figure 2-7 shows an example.



Process Work

Purchase Order Status **New** Urgency **10** ID **PO-1**

Subject: Purchase Order Urgency:


Created: Mar 16, 2009 1:38:00 PM Created by: Work User

Enter Order Items OR --select a different action--

Item	*Quantity	Price	Item Total
Laptop	2	\$2,500.00	\$5,000.00
Keyboard	3	\$39.99	\$119.97
Monitor	2	\$550.00	\$1,100.00
Printer	1	\$325.50	\$325.50

Submit

Figure 2-7. Line Items

Note: If you make a mistake and want to delete an item, click the garbage can () to the right of the row.

3. Click Submit to move to the next step in the purchase order process (use the right-hand scroll bar to display the Submit button if necessary).
4. The Confirm this order form appears (Figure 2-8).

Process Work

Purchase Order Status **Open** Urgency 10 ID PO-1

Subject: Purchase Order Urgency:

Created: Mar 16, 2009 1:38:00 PM Created by: Work User

Confirm this order

Order Total \$6,545.47

Add Shipping Details ☐

Submit

Department Name IT

Department Number 1050

Bill Customer ☒


Order Date 3/16/2009 12:00 AM

Note

Parties Work User

+ **Entry Operator-** Work User

Figure 2-8. Purchase Order with Add Shipping Details

- Click the Where-Am-I icon  to see the location of this purchase order in the process flow, and the path that this work object has followed so far (Figure 2-9). The check marks indicate steps that are complete; the arrow marks the current step. The shapes in this diagram are types of building blocks in the Process Commander representation of the business process. Common shapes are explained in Chapter 3.

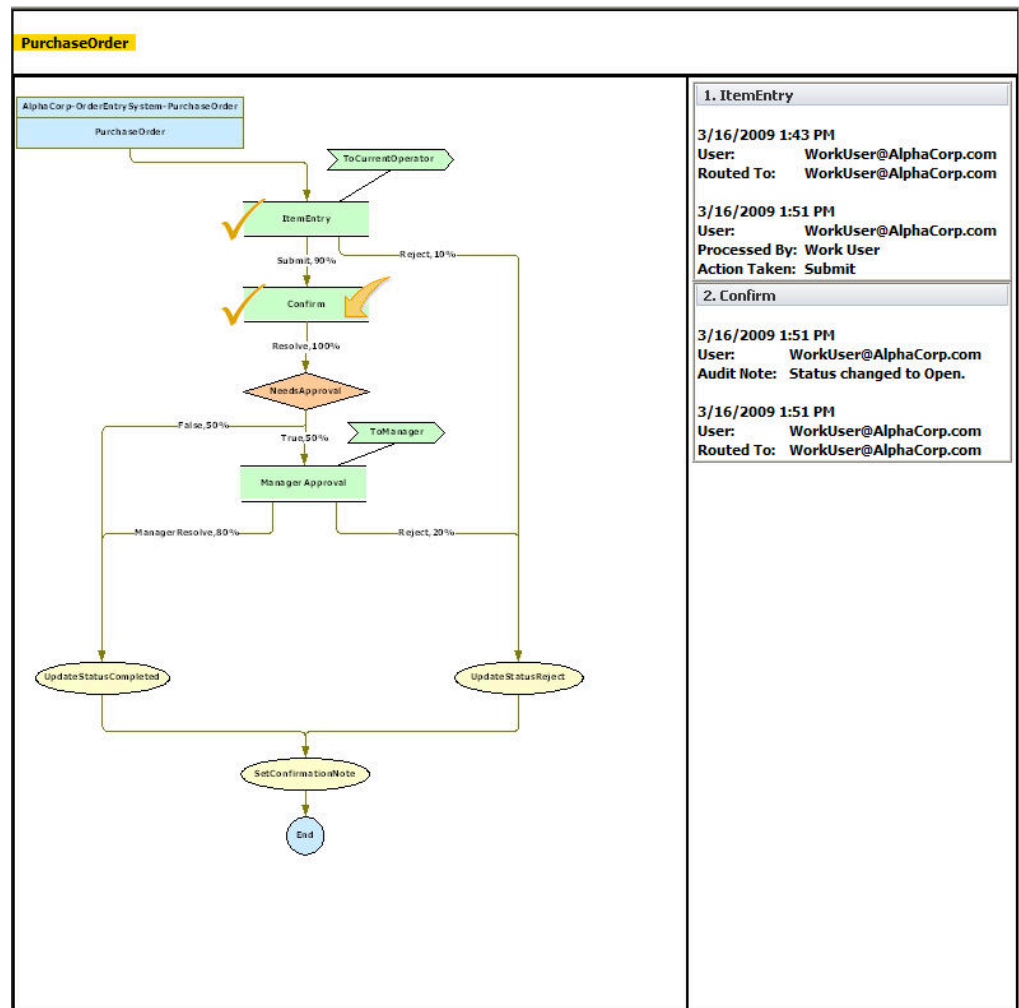


Figure 2-9. Location of Request in Process Flow

The second **assignment** or user action in the Purchase Order process flow corresponds to the rectangle labeled Confirm in the flow diagram. This assignment allows users to confirm the order and add shipping details to a purchase order request.

6. Close the You Are Here window.
7. Select the "Add Shipping Details" check box. The Shipping Information section appears (Figure 2-10).

Process Work

Purchase Order Status **Open** Urgency 10 ID PO-1

Subject: Purchase Order Urgency:
Created: Mar 16, 2009 1:38:00 PM Created by: Work User

➔ **Confirm this order**

Order Total \$6,545.47
Add Shipping Details ☒

Shipping Information

Address Line 1 101 Main St.
Address Line 2 Suite #1200
City Cambridge
State MA
Zip 02142
Multiple Deliveries 0

Submit

Figure 2-10. Shipping Details

8. Enter the shipping information for your purchase order.

Note: Do not press the Enter key to advance from field to field, as this submits the form.

9. Change Multiple Deliveries from 0 to 2. Select a Delivery Method for each of the deliveries and click Submit (Figure 2-11).

Multiple Deliveries 2

Delivery Method

USPS
USPS

Submit

Figure 2-11. Multiple Delivery Selection

10. The purchase order request automatically routes to a manager for approval and is placed on the manager's worklist. Manager approval is required when the order total is greater than \$100. (You can test this by creating a second purchase order request with a total of \$100 or less.)

Approving the Purchase Order Request

Managers or supervisors have access to all the facilities available to application users and more. In this sample application, managers have the ability to approve or reject certain purchase orders.

1. Log in as WorkManager@AlphaCorp.com with the password **rules** to access the WorkManager portal (Figure 2-12).

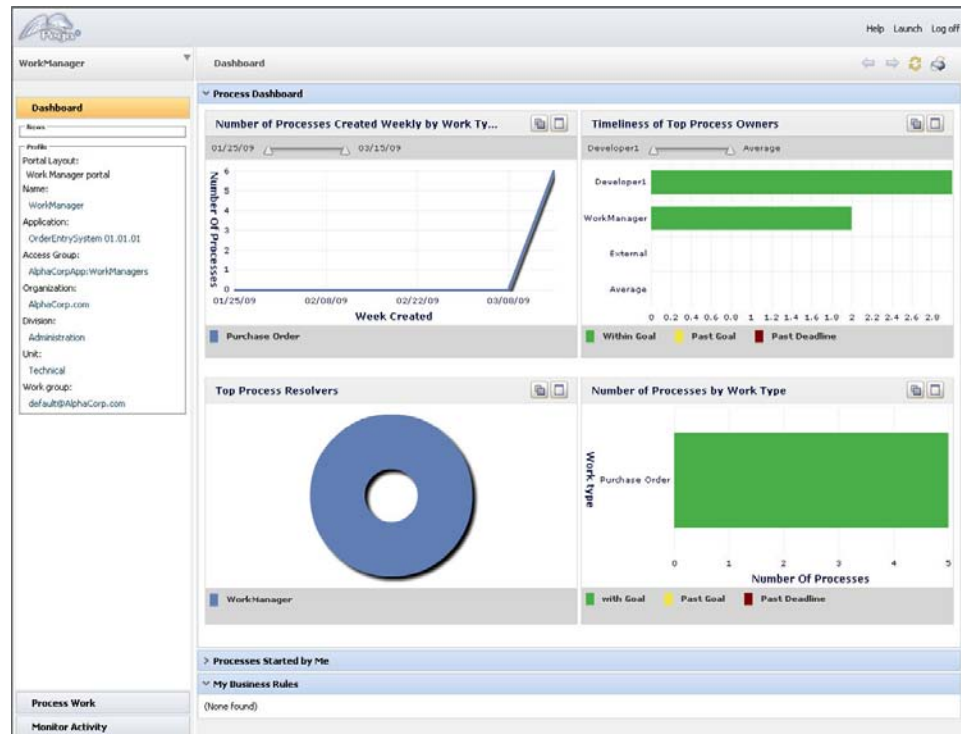


Figure 2-12. WorkManager Portal

Managers use different facilities than their staff. As you are acting as a manager, you may be prompted with a Windows warning regarding one or a few additional ActiveX controls. Click Install each time. Figure 2-13 shows an example.

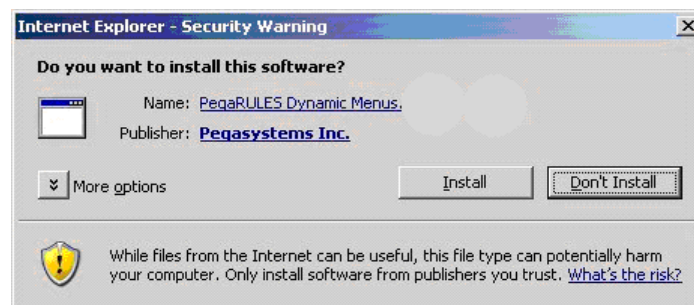


Figure 2-13. ActiveX Control Warning

- Click the Process Work bar (bottom left) to change the work space on the right. The manager's worklist appears.
- Hover the mouse pointer over a row in the worklist to see Smart Info details for that purchase order (Figure 2-14). Find the one you entered most recently as the WorkUser.

Urgency	ID	Subject	Status	Instructions
10	PO-1	Purchase Order	Pending-Approval	Manager Approval Required

Expand ...

Figure 2-14. Worklist Item and Pop-Up Details

- Click the work object ID to open the purchase order form.
- Click Approve to approve the purchase order request (Figure 2-15).

Item	Quantity	Price	Item Total
Laptop	2	\$2,500.00	\$5,000.00
Keyboard	3	\$39.99	\$119.97
Monitor	2	\$550.00	\$1,100.00
Printer	1	\$325.50	\$325.50

Figure 2-15. Take Action Form

Note: After a manager Approves (or Rejects) the purchase order request, the work object becomes **resolved** with a status of Resolved-Completed, or Resolved-Rejected, and the Order Entry application displays a confirmation form (Figure 2-16). The resolved status indicates that the business process is complete.

The screenshot shows a web application window titled "Process Work". At the top right are navigation icons: back, forward, refresh, and print. Below the title bar is a header section with a dropdown menu set to "Confirm Work ObjectStatus", followed by the text "Resolved-Completed", "Urgency 10", and "ID PO-1". To the right of this header are five icons: a folder, a clock, a pencil, a trash can, and a close button. The main content area has a light blue background and contains the following text:

Subject: Purchase Order

Updated 3/16/09 2:23 PM	by WorkManager	Aging since 3/16/09 1:38 PM
Created 3/16/09 1:38 PM	by Work User	Urgency Adjustment

Below this is a section titled "Confirmation" with a blue header. Inside this section, a message reads: "◇ This item has been resolved."

Figure 2-16. Work Object Confirmation

Other facilities on the WorkManager portal allow managers or supervisors to review worklists of staff, transfer work among staff, and review real-time reports about progress, volume, backlogs, and trends.

6. Click Log Off in the upper right-hand corner of your screen.

Chapter 3:

Improving the Application

In this chapter, you will extend the purchase order process to require a second approval to some purchase orders. To make the application more closely match AlphaCorp business practices, you will modify the process flow to require a Vice President's (VP) approval for those purchase order requests that meet **all** the criteria in a row of the following table (Figure 3-1). At least one row must match the criteria for the purchase order to go to the VP for approval

Dept Name	Bill Customer	Order Total
IT		>\$1,000
HR		>\$500
Finance	No	
Finance	Yes	>\$200
Legal	Yes	>\$500
Legal	No	>\$200
IT	No	>\$2,000

Figure 3-1. Purchase Order Criteria

Example: If the Department Name is Finance and the Bill Customer check box is cleared (not checked), the third row of this table indicates that the VP approval is required for this request. If the Department Name is Finance, the Bill Customer check box is checked, and the Order Total is \$199.00, then none of the rows contain criteria that are all met, and therefore no VP approval is required.

When you complete the changes, the revised process diagram will look like Figure 3-2, with three added shapes contained within the dashed red lines.

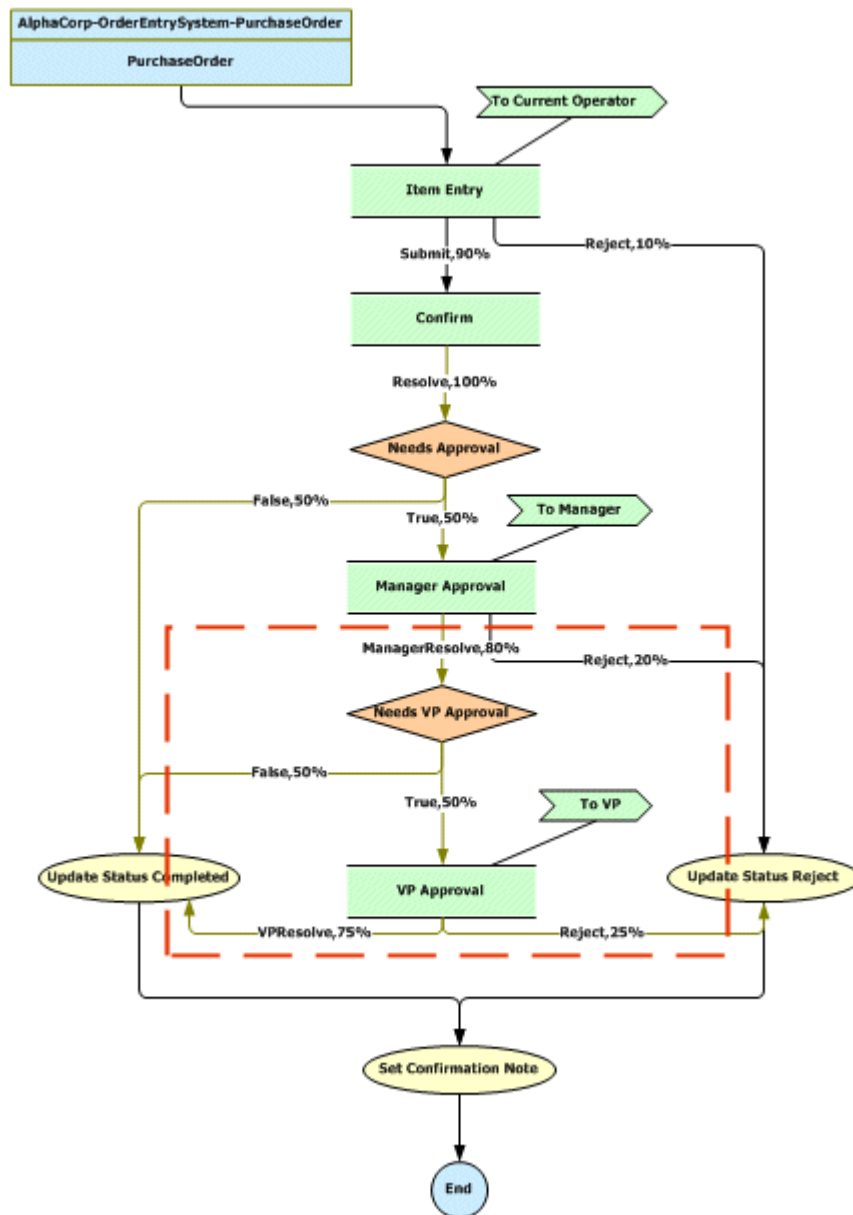


Figure 3-2. Revised Process Flow Diagram

Changing the Purchase Order Request Process

Follow these steps to learn about the Process Commander Developer portal.

1. Log in as Developer@AlphaCorp.com with the password **rules**. The Developer portal appears (Figure 3-3).




Note: If this application is being accessed by multiple users, you may need to log in as Developer1@AlphaCorp.com, Developer2, and so on.



Figure 3-3. Developer Portal

2. The Application Explorer (App Explorer tab) in the left panel provides quick access to the rules in this application. It presents a three-level tree structure. Rules are organized into Process Commander rule categories. For example, the Order Entry System contains the Purchase Order class which contains rules belonging to various rule type categories such as Property, Decision, and Process.

Open the PurchaseOrder flow rule, following the steps below (Figure 3-4).

- a. Click + to expand the PurchaseOrder class  and see the categories it contains.
- b. Click the + to expand the Process category  to see the rule types it contains.
- c. Click the + to expand the Flow rule type .
- d. Click the PurchaseOrder link to open the flow rule. (Each blue dot identifies a single rule.)

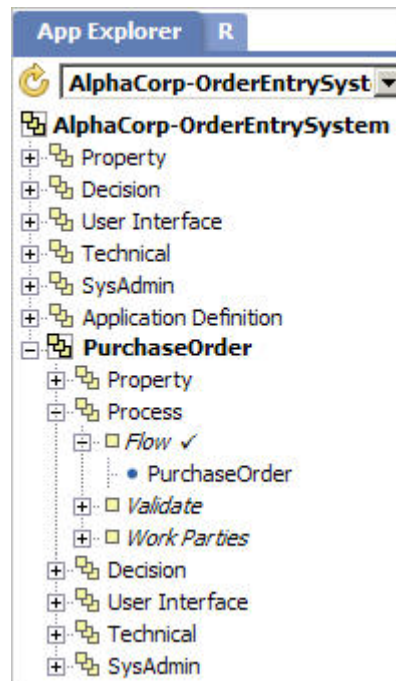


Figure 3-4. Application Explorer

Note: If Windows presents an additional ActiveX warning, click Install to accept.

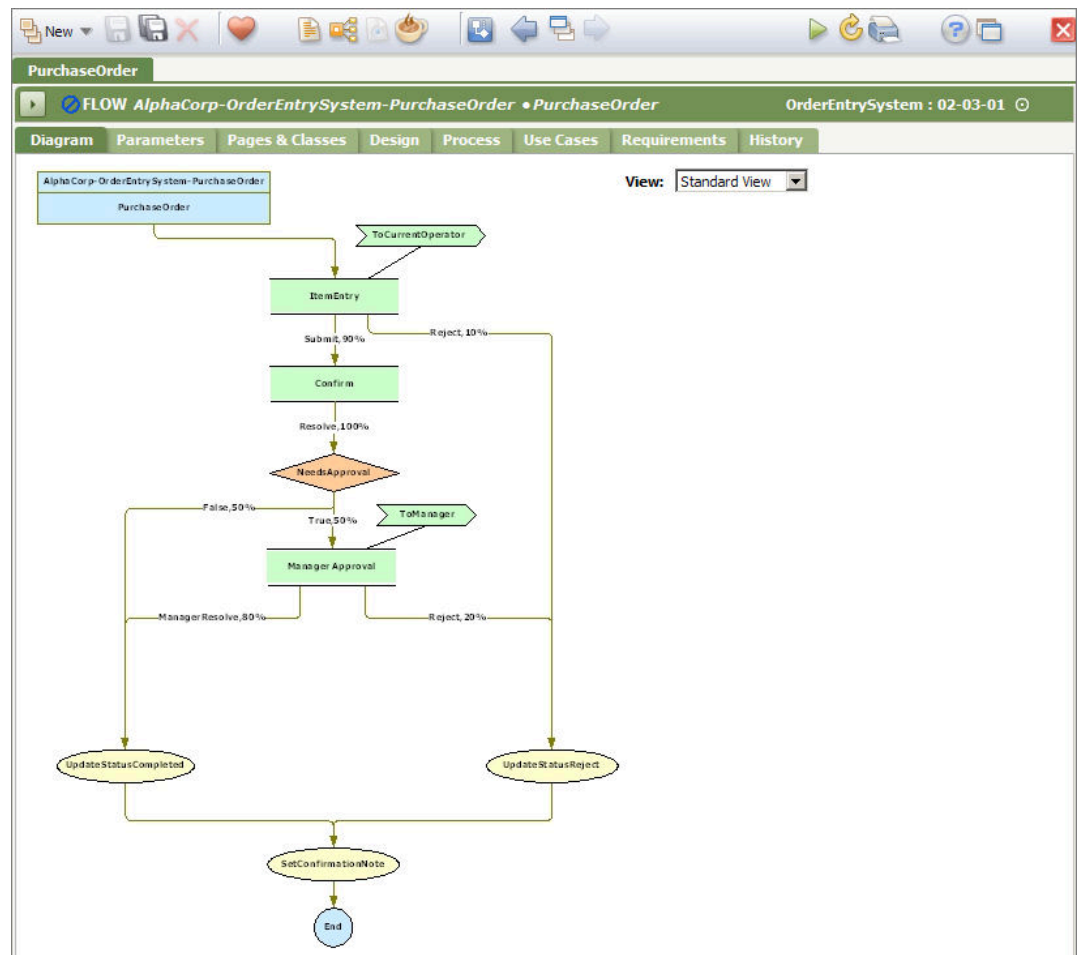



Figure 3-5. Flow Rule and Save As Toolbar Button

The Flow rule form for the PurchaseOrder process appears (Figure 3-5). Process Commander has dozens of rule types; each type is identified in the upper left of a corresponding form (FLOW in this case).

Tabs allow access to individual fields on the form, and tools on the toolbar operate on the rule. The PurchaseOrder flow rule is marked read-only (🔒), so you can't alter it directly. Instead, you will save a copy of that flow rule into your developer RuleSet named OrderEntryDev, and update your copy.

Note: If you have signed on as Developer1, Developer2, Developer3, and so on, your RuleSets will be OrderEntryDev1, OrderEntryDev2, OrderEntryDev3, and so on.

- Click Save As  to save a copy of the process flow rule into your own RuleSet. A Save As Rule Instance dialog appears (Figure 3-6).



The dialog box titled "Flow : SaveAs" contains the following fields and sections:

- Filter By:** Implementation
- Applies To:** AlphaCorp-OrderEntrySystem-PurchaseOrder
- Flow Type:** PurchaseOrder
- RuleSet Version**
 - RuleSet:** OrderEntryDev
 - Version:** 01-01-01
- Availability**
 - Available:** Yes
 - Status:**
- Circumstance**
- Date Range**


At the bottom are "Save As" and "Cancel" buttons.

Figure 3-6. Save Rule Instance Dialog

The two fields labeled Applies To and Flow Type identify the keys of the flow rule. Do not alter the values in these fields; the new flow rule should use the same name as the original you are copying.

Select OrderEntryDev (or OrderEntryDev1, OrderEntryDev2, OrderEntryDev3, and so on) from the RuleSet Name drop-down list. The Version field defaults to 01-01-01.

- Click the Save As button.
- The next steps change the Purchase Order flow to include a **decision shape** that determines whether the VP must approve a purchase order request. A decision shape, represented in the flow diagram by an orange diamond, identifies an automatic step where processing may advance along any one of two or more outcomes. In this case, the decision shape has two outcomes: VP approval is required (True), and VP approval is not required (False).

Click the Flow Editor toolbar icon () as shown in Figure 3-7. This opens the Visio Flow Editor.

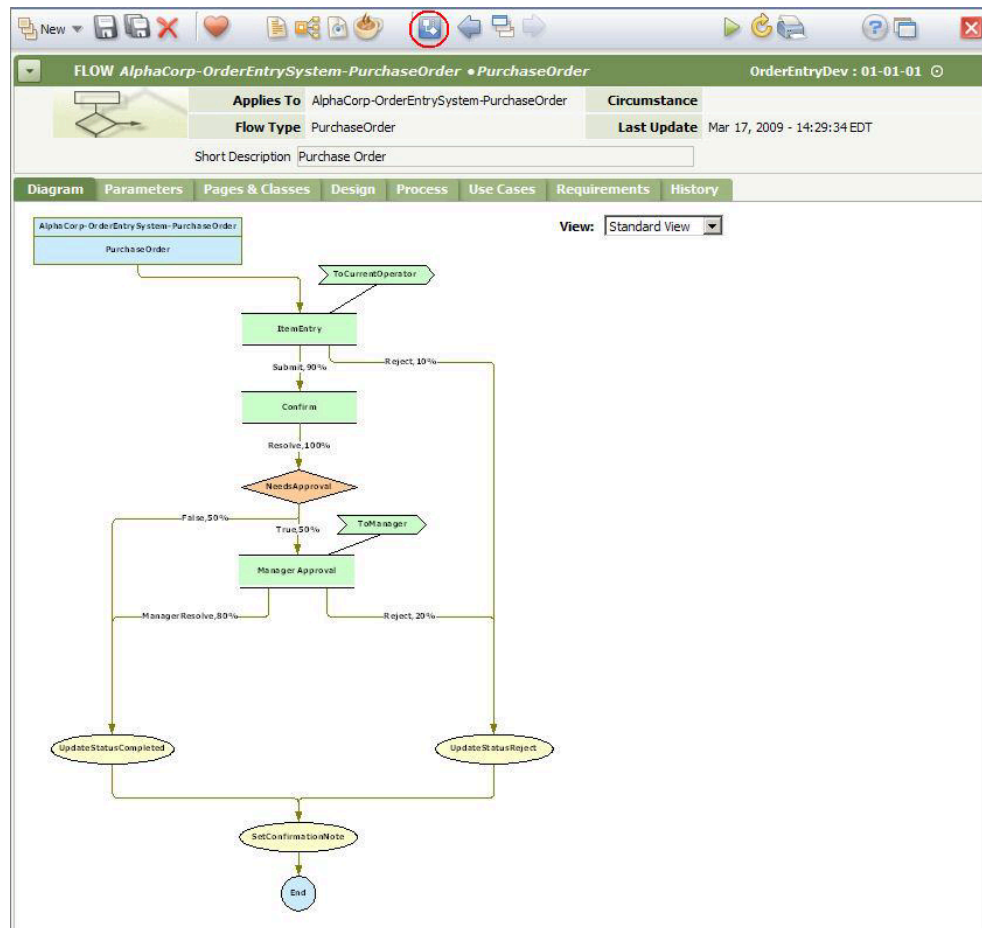


Figure 3-7. Purchase Order Flow Rule

Note: When the Visio Flow Editor opens, it may display a security warning (Figure 3-8). If it does, select “Always trust macros from this publisher” and then click Enable Macros. If the Enable Macros button remains disabled, your Visio security settings are set too high. In that case, close the dialog box. Update Visio as described in Appendix B and try again.



Figure 3-8. Visio Macro Warning

When Visio opens, it displays the flow diagram as shown in Figure 3-9.

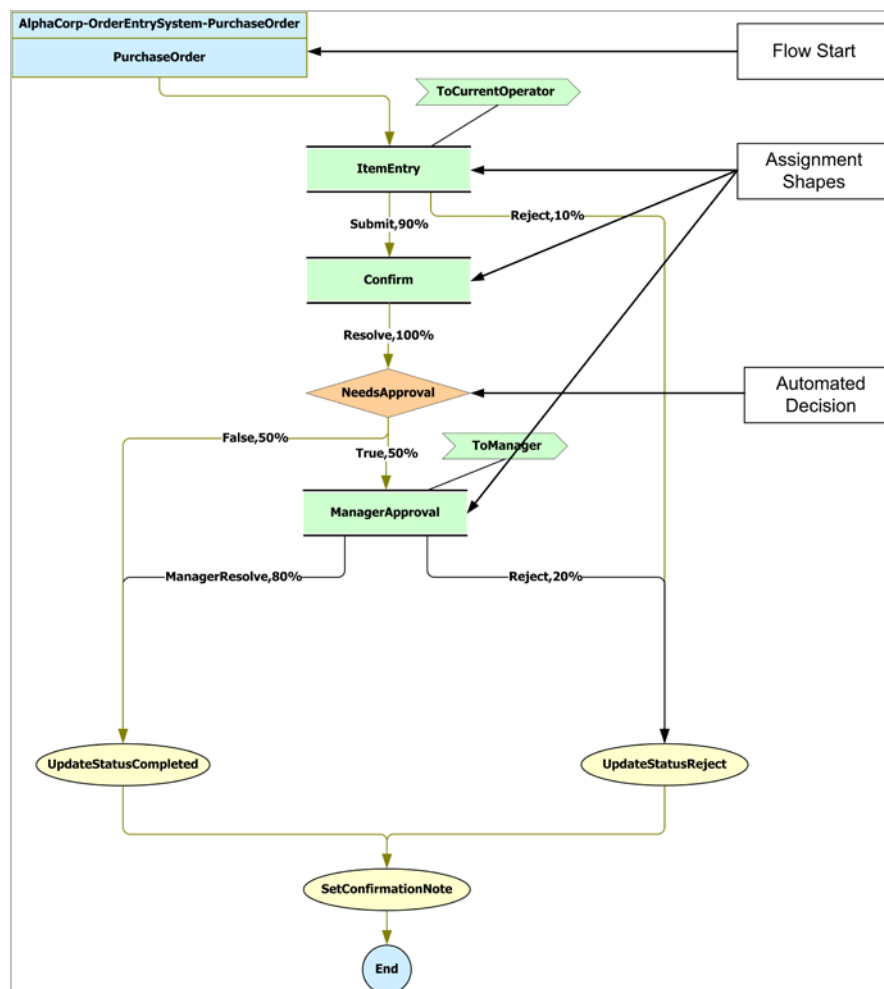


Figure 3-9. Visio Flow Diagram

The blue rectangle at the top of the flow diagram identifies the start of the business process where a new purchase order request is created. Processing of each purchase order proceeds along the connectors from shape to shape. The three green rectangles mark assignment shapes (ItemEntry, Confirm, and ManagerApproval) — the steps in the process that require a user or manager to enter information or record their decisions. The orange diamond shape labeled NeedsApproval identifies an automated decision, in this case with two outcomes: True or False.

The Visio tool also contains a Visio Shapes panel, presenting the 18 Process Flow shapes that Process Commander uses (Figure 3-10). Each has a descriptive ToolTip. (If the names under the icons do not display, right click on the Process Flow heading and select View > Icons and Names).

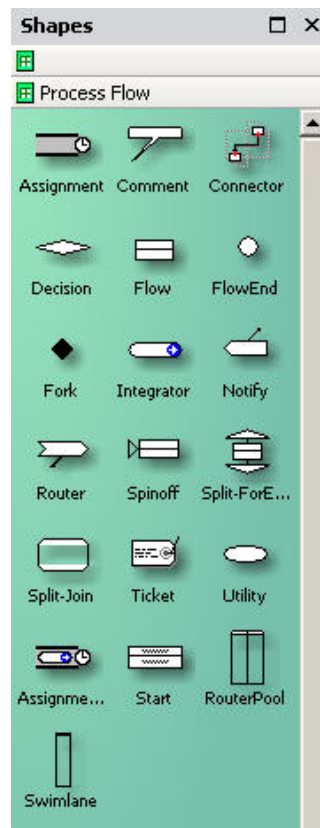



Figure 3-10. Process Flow Shapes

Note: While using Visio, you can click the Undo button (↶) on the toolbar to reverse the most recent action. Do not attempt to log off while Visio is active.

6. Add a Decision shape to the process flow below the existing ManagerApproval assignment shape as follows:
 - a. Click and drag a Decision shape  from the Shapes stencil onto the flow diagram.
 - b. Position the Decision shape below the ManagerApproval assignment shape (Figure 3-11).

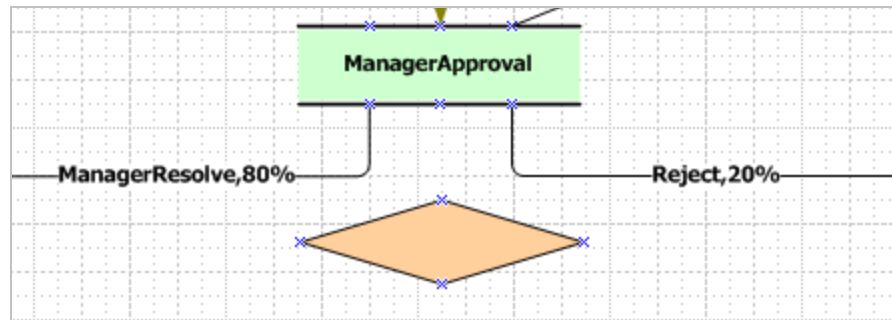
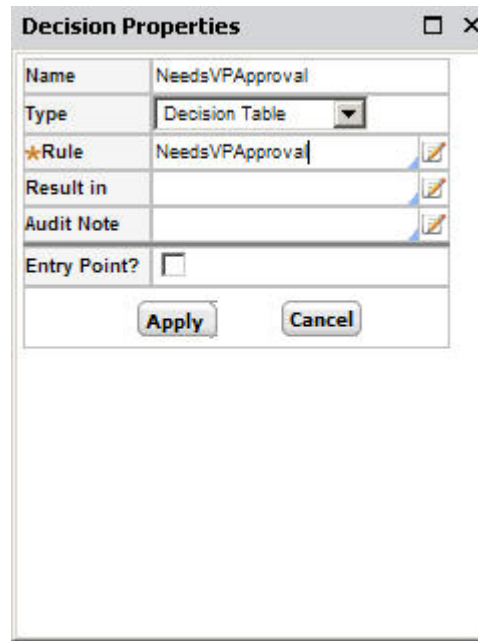


Figure 3-11. Position of Decision Shape

7. Click on the Decision shape to select it and complete the Decision Properties panel that appears to the left of the process flow diagram (Figure 3-12):
 - a. Select Decision Table as the Type.
 - b. Enter NeedsVPApproval (with no spaces) in the Rule field. The orange asterisk identifies required fields.
 - c. The Name field is arbitrary and may contain spaces. Accept the default value (which Process Commander copies from the Rule field) by doing nothing or enter other brief text to identify this task.




The image shows a 'Decision Properties' dialog box with a title bar containing a minimize button and a close button. The dialog contains several fields and controls:

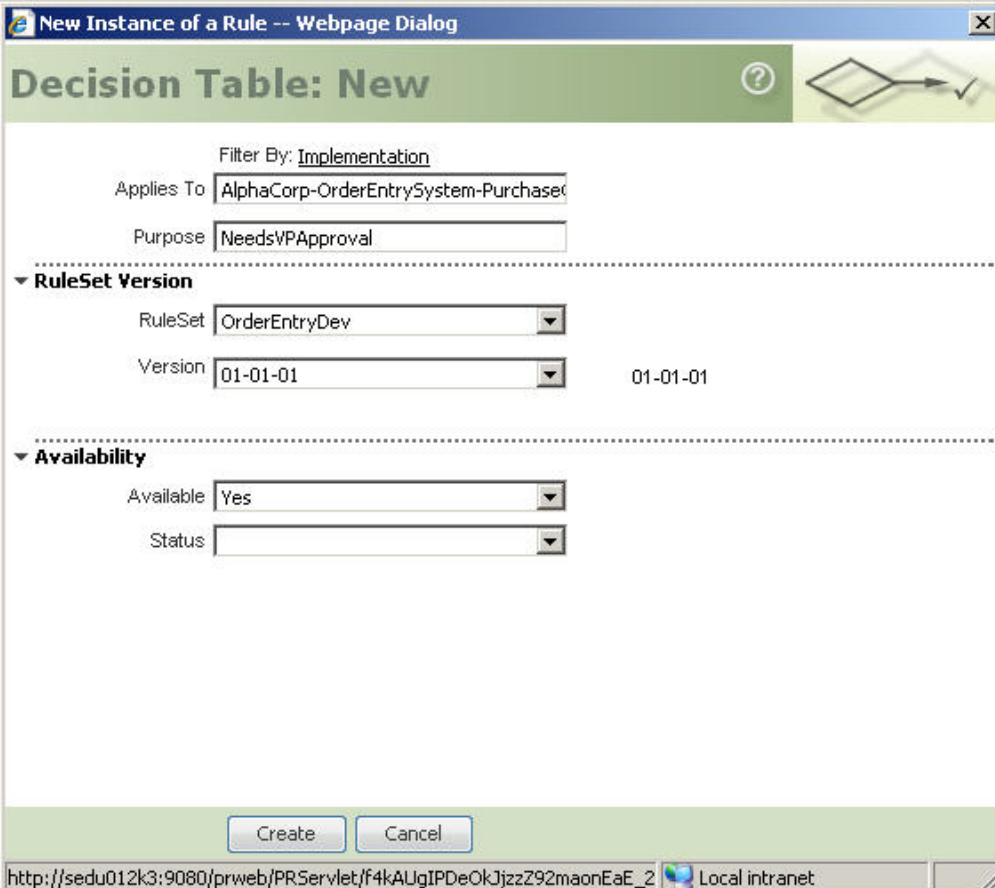
Name	NeedsVPApproval
Type	Decision Table
★Rule	NeedsVPApproval
Result in	
Audit Note	
Entry Point?	<input type="checkbox"/>

At the bottom of the dialog are two buttons: 'Apply' and 'Cancel'.

Figure 3-12. Decision Properties

At this point, the flow rule references a decision table rule, but one that does not yet exist.

8. Click the Open icon () next to the NeedsVPApproval Rule field to create a new decision table rule with that name. A New Rule Instance dialog appears (Figure 3-13).



New Instance of a Rule -- Webpage Dialog

Decision Table: New

Filter By: Implementation

Applies To: AlphaCorp-OrderEntrySystem-Purchased

Purpose: NeedsVPApproval

▼ **RuleSet Version**

RuleSet: OrderEntryDev

Version: 01-01-01 01-01-01

▼ **Availability**

Available: Yes

Status:


Create Cancel

http://sedu012k3:9080/prweb/PRServlet/f4kAUgIPDeOkJzzZ92maonEaE_2 Local intranet

Figure 3-13. New Rule Instance

9. Confirm or enter the following:
- Do not change the Applies To field.
 - The Purpose should be NeedsVPApproval, if not change it
 - The RuleSet should be OrderEntryDev (or OrderEntryDev1, OrderEntryDev 2, OrderEntryDev3, and so on), if not change it
 - The Version should be to 01-01-01, if not change it
10. Click Create. The Decision Table rule form appears (Figure 3-14).

DECISION TABLE AlphaCorp-OrderEntrySystem-PurchaseOrder • NeedsVPApproval OrderEntryDev : 01-01-01



Applies ToAlphaCorp-OrderEntrySystem-PurchaseOrder





PurposeNeedsVPApproval

Short DescriptionNeedsVPApproval

Circumstance

Last Update

TableResultsPages & ClassesHistory



Show Conflicts

Show Completeness

Edit in Excel

ConditionsActions

if

otherwise

→

→

Return

Figure 3-14. Decision Table Rule Form




Defining a New Decision Table Rule

- Click the Results tab to bring it to the front. Complete two rows of the Allowed Results array to identify the allowed results for this decision table (Figure 3-15). In this case, the allowed results are:
 - True: this purchase order requires VP approval
 - False: this purchase order does not require VP approval

The screenshot shows the 'Results' tab of a decision table configuration interface. At the top, there's a header bar with 'DECISION TABLE AlphaCorp-OrderEntrySystem-PurchaseOrder • NeedsVPApproval' and 'OrderEntryDev : 01-01-01'. Below this, a 'Table' icon is shown. The main area is divided into sections: 'Allowed Values Property' (with a dropdown), 'Allowed Results' (a table with two rows: '1. True' and '2. False'), 'Sets Properties?' (checkboxes), 'Options' (checkboxes for 'Evaluate All Rows', 'Allowed to Update Row Layout', 'Allowed to Update Column Layout', 'Allowed to Change Property Sets', 'Allowed to Build Expressions', and 'Allowed to Return Values'), and 'PRESET PROPERTY VALUES' (a table with 'Property' and 'Value' columns).

Figure 3-15. Results Tab

When completing arrays, you can click the:

-  — to add a row at the bottom
-  — to add a row between other rows
-  — to delete a row

Note: No changes are needed to the Set Properties?, Options, and Preset Property Values areas of this tab.

- Click the Table tab to bring it to the front. In this tab, you record the decision table logic presented in Figure 3-1. The decision table in this example has three inputs that are identified by property rules: DeptName, BillCustomer, and OrderTotal. Each column in the decision table (except the Return column) corresponds to a property. Follow the steps below to complete the Table tab.
 - Click the column heading cell (just below Conditions) to label the column in the matrix. A Property Chooser pop-up window displays (Figure 3-16).

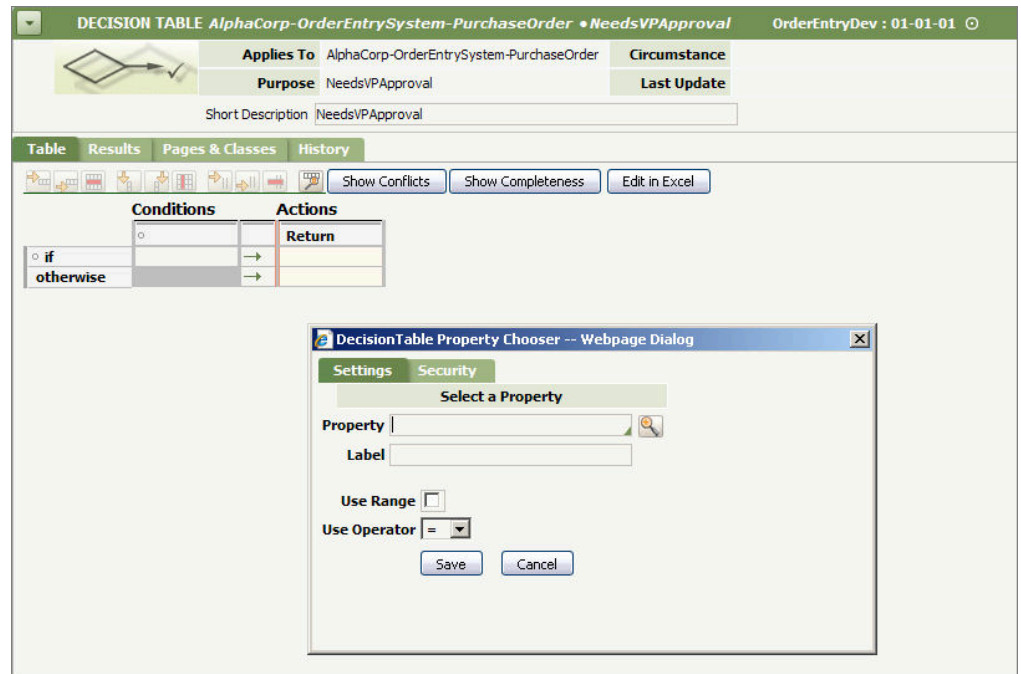


Figure 3-16. Decision Table Rule – Decision Property Chooser

Note: The green triangle at the bottom right corner of the Property input box is a **SmartPrompt** control. SmartPrompts appear on many rule and data forms to make a selection list available for fast entry. To complete a field that contains this control, press the Down Arrow key to access the list. This SmartPrompt control displays a list of property rules from which you can select.

- b. Use the SmartPrompt feature to access a list of all the properties available. Scroll down until you see the DeptName property and press Enter or click the property name to select it (Figure 3-17).

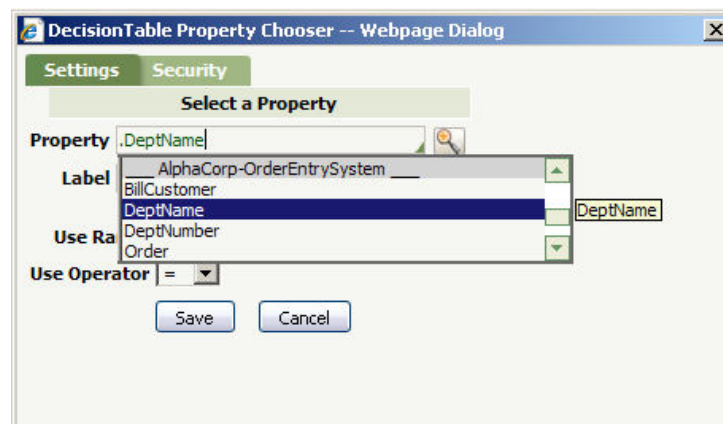



Figure 3-17. Select a Property in the Decision Table Property Chooser

- c. The Label field contains a default value. Click Save to save the property to the decision table matrix.
3. The starting table contains a single input column. You need to add two columns; one for the BillCustomer property and one for the OrderTotal property. To add a column to the right of the starting column:
 - a. Click the starting column to select it.
 - b. Click the Insert Column After icon  (Figure 3-18). A new column appears to the right of the starting column (Figure 3-19). Do this again to add a second column.

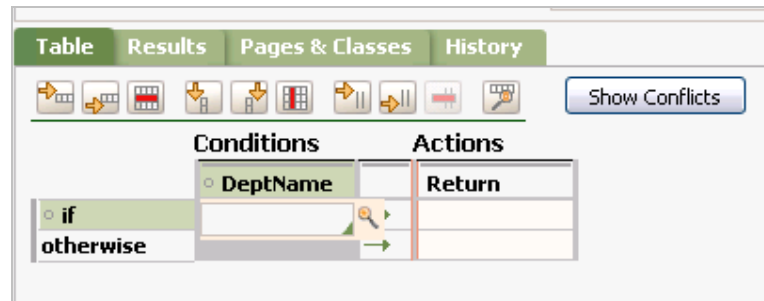


Figure 3-18. Decision Table Rule – Adding a Column (before)



Figure 3-19. Decision Table Rule – Adding a Column (after)

4. Add the **Bill Customer** and **Order Total** properties (Figure 3-20) to the columns using the Property Chooser (Figure 3-17).

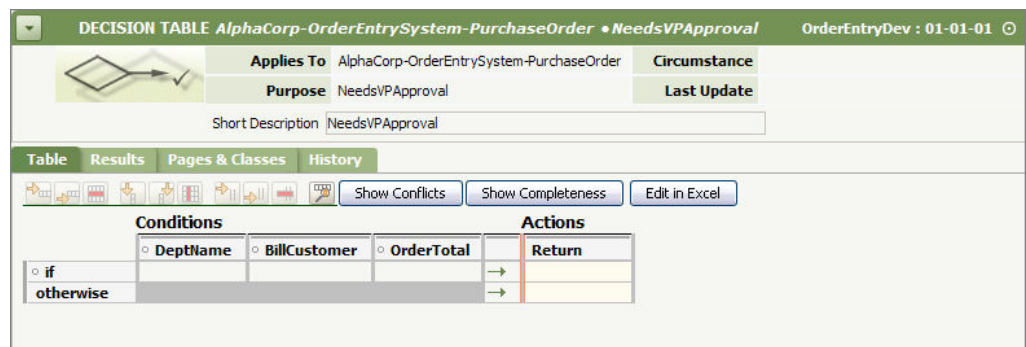



Figure 3-20. Decision Table Rule – Labeling a Column

5. Enter the first decision criteria as shown in Figure 3-1 to complete the first row of your decision table, following the steps below.
 - a. In DeptName, click on the field and use the SmartPrompt to select the name IT.
 - b. Leave the BillCustomer property blank.
 - c. Enter **>1000** for OrderTotal. You can omit the dollar sign, commas, and pennies in the amount.
 - d. In the Return column, select **True** for the Return value (Figure 3-21). There are only two allowed return actions, True and False, which are defined by the results that you specified earlier on the Results tab.

	DeptName	BillCustomer	OrderTotal	Return
if	IT		>1000	True
otherwise				

Figure 3-21. Decision Table Rule – First Row Completed

6. Enter additional rows by clicking the Insert Row After icon  (Figure 3-22).



	DeptName	BillCustomer	OrderTotal	Return
if	IT		>1000	True
else if				
else if				
else if				
else if				
else if				
otherwise				

Figure 3-22. Decision Table Rule – Empty Rows Added

7. Using Figure 3-1 as your guide, complete the Table so it looks like Figure 3-23. Enter **=False** for No and **=True** for Yes.


DECISION TABLE AlphaCorp-OrderEntrySystem-PurchaseOrder • NeedsVPApproval				
Applies To		AlphaCorp-OrderEntrySystem-PurchaseOrder	Circumstance	
Purpose		NeedsVPApproval	Last Update	
Short Description: NeedsVPApproval				
<div> <div>Table</div> <div>Results</div> <div>Pages & Classes</div> <div>History</div> </div> <div> <div>Show Conflicts</div> <div>Show Completeness</div> <div>Edit in Excel</div> </div>				
Conditions			Actions	
	DeptName	BillCustomer	OrderTotal	Return
if	IT		> 1000	→ True
else if	HR		> 500	→ True
else if	Finance	=False	> 200	→ True
else if	Finance	=True	> 500	→ True
else if	Legal	=True	> 200	→ True
else if	Legal	=False	> 2000	→ True
otherwise				→ False

Figure 3-23. Decision Table Rule Completed

8. Click Save  to save the updated decision table rule. An icon at the top of the form indicates that the rule was saved, but with a warning.
9. Scroll down to read the warning message below the form. Click the Show Conflicts button to check this rule for logic consistency (Figure 3-24). One logic error appears in the bottom row (indicated by a warning icon ). The bottom row contains an *unreachable condition* as there is a combination of input values that cannot be used; the top row masks the bottom row.

DECISION TABLE AlphaCorp-OrderEntrySystem-PurchaseOrder • NeedsVPApproval				
Applies To		AlphaCorp-OrderEntrySystem-PurchaseOrder	Circumstance	
Purpose		NeedsVPApproval	Last Update	
Short Description: NeedsVPApproval				
<div> <div>Table</div> <div>Results</div> <div>Pages & Classes</div> <div>History</div> </div> <div> <div>Show Conflicts</div> <div>Show Completeness</div> <div>Edit in Excel</div> </div>				
Conditions			Actions	
	DeptName	BillCustomer	OrderTotal	Return
if	IT		> 1000	→ True
else if	HR		> 500	→ True
else if	Finance	=False	> 200	→ True
else if	Finance	=True	> 500	→ True
else if	Legal	=True	> 200	→ True
else if	Legal	=False	> 2000	→ True
otherwise				→ False

Figure 3-24. Decision Table Rule – Logic Errors

10. To delete a row, click in any cell in the row to select the row, then select the Delete Row icon . Click the Show Conflicts button again to confirm that no logic errors remain. A message displays “The Decision table is consistent.”

11. Save the revised decision table and close the form. You are returned to the Visio Flow Editor.

Editing the Flow

1. In Visio Flow Editor, click the Apply button in the Decision Properties panel to apply the properties to the Decision shape. Process Commander automatically presents the True and False return values as connectors from the decision shape (Figure 3-25).

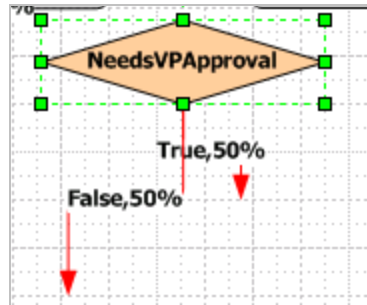


Figure 3-25. Visio Updates

2. Now you will redirect the flow action (connector) from the ManagerApproval Assignment shape to the NeedsVPApproval Decision shape, following the steps below:
 - a. Click the ManagerResolve connector that starts at the ManagerApproval assignment shape and ends at the UpdateStatusCompleted Utility shape.
 - b. Click the red square connected to the ManagerApproval assignment shape and drag the tail end to the blue X in the center of the shape.
 - c. Click the red square connected to the UpdateStatusCompleted Utility shape and drag the arrow head of the connector to the top of the NeedsVPApproval decision shape (Figure 3-26). If the ManagerResolve label does not appear, pull the decision shape down to reveal it.

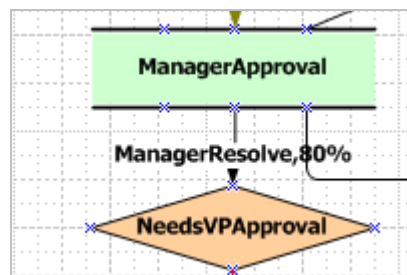



Figure 3-26. Visio Updates

This connection means that the business process requires a decision after a purchase order request is approved by the manager.

3. Select and drag an Assignment shape  from the Shapes stencil and drop it below the Decision shape, so that purchase order requests can be routed to the Vice President. Position the new VPApproval assignment shape below the NeedsVPApproval decision shape (Figure 3-27).

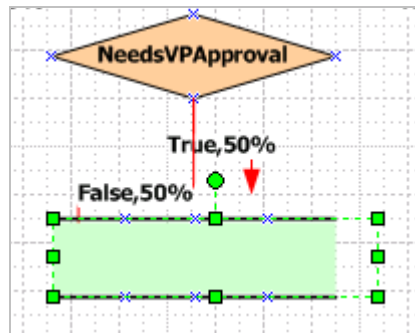



Figure 3-27. Assignment Shape

4. While the Assignment shape is selected, complete the Assignment Properties panel as shown in Figure 3-28. In the Harness field, use SmartPrompt to select Perform_Buttons. (A Process Commander harness rule provides the basis of a form for work object processing. This rule name contains an underscore character, not a dash or minus sign.)

Assignment Properties	
Name	VPApproval
Rule	WorkList
Parameters	
Instructions	VP Approval Required
StatusWork	Pending-Approval
StatusAssign	
Confirmation...	VP Review is complete
HarnessPurp...	Perform_Buttons
Service Level	
Local Actions	
Effort Cost	
Notify	
Router	
Entry Point?	<input checked="" type="checkbox"/>
Only Going B...	<input type="checkbox"/>
Post Action o...	<input type="checkbox"/>
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>	

Figure 3-28. Assignment Properties

5. In the StatusWork field, use the SmartPrompt to select Pending-Approval. Type text into the Name, Instructions and Confirmation fields. Then click Apply to apply these inputs to the Assignment shape.
6. Add a Router shape to the VPApproval Assignment shape so that the Purchase Order is routed to the user identified by the Operator ID VP@AlphaCorp.com (Figure 3-29) as follows:
 - a. Select and drag a Router shape  from the Shapes stencil onto the flow diagram.
 - b. Connect the Router shape to the VPApproval Assignment shape.

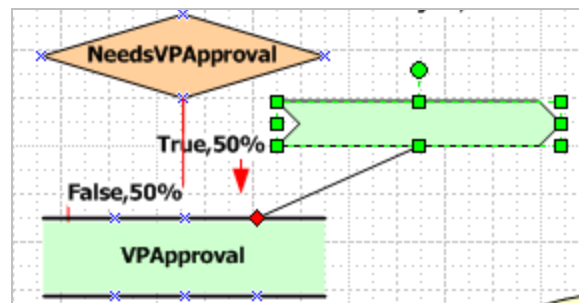


Figure 3-29. Router Shape

7. Select the Router shape. Complete the Router Properties panel as shown in Figure 3-30 and then click Apply.

Figure 3-30. Router Properties

Note: The blue triangle at the bottom right corner of the Rule field input box is a SmartPrompt control. Press the Down Arrow key to access the list. This SmartPrompt displays a list of router rule names from which you can select.

8. The True and False connectors from the Decision shape are currently “dangling” or unattached to other shapes (Figure 3-29). Process Commander uses red connectors to indicate that they are not attached to a shape. Follow the steps below to attach the connectors.
 - a. Attach the True connector to the VPApproval Assignment shape to send the purchase order request to the Vice President for approval when the decision table calculates a return value of True.

- b. Attach the False connector to the UpdateStatusCompleted Utility shape



When the decision table rule returns a value of False, the Vice President's approval is not required. The following events occur automatically:

- The request's status is updated to "Resolved-Completed."
- A Confirmation Note is set to Resolved.
- The purchase order request is resolved.

Figure 3-31 shows all the shapes connected correctly.

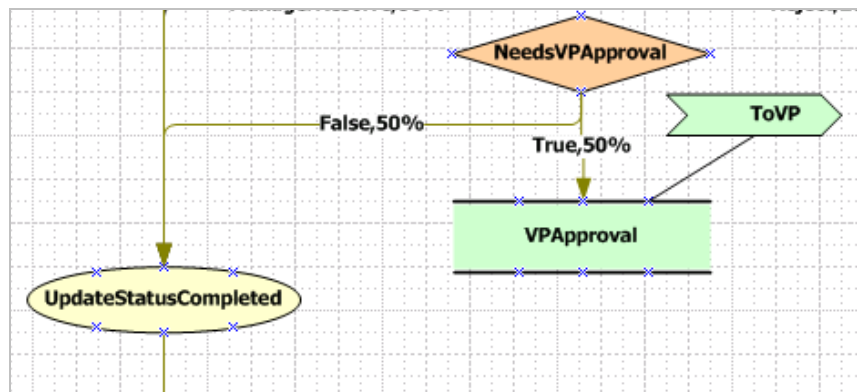



Figure 3-31. True / False Connector

9. Add connectors from the VPApproval Assignment shape following the steps below:
 - a. Click and drag the Connector shape  in the Shapes stencil and drag it anywhere on the flow diagram.
 - b. Repeat to add a second connector.
 - c. Attach the tail ends to the bottom of the VPApproval Assignment shape.
 - d. Connect one connector head to the UpdateStatusCompleted Utility shape.
 - e. Connect the second connector head to the UpdateStatusReject Utility shape (Figure 3-32).

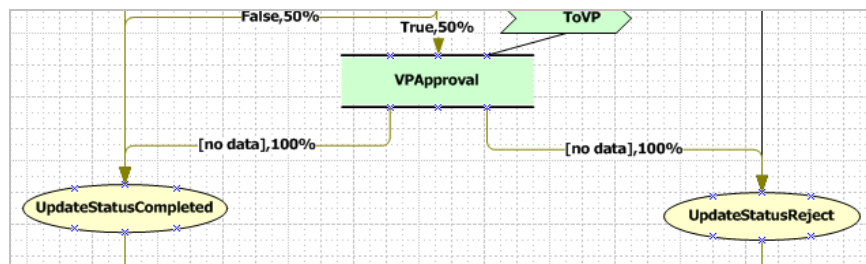


Figure 3-32. Connectors from Assignment Shapes

10. Define the Connector properties for the connector that ends with the UpdateStatusCompleted utility shape. Select ManagerResolve as the flow action (Figure 3-33). Enter **75** as the Likelihood value. Click Apply.



Connector Properties	
★Flow Action	ManagerResolve
Application	OrderEntrySystem
Work Type	PurchaseOrder
Use Case	
★Likelihood	75
Properties	Name
	Value
Audit Note	
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>	

Figure 3-33. Manager Resolve

11. Complete the Connector Properties panel for the connector that leads to the UpdateStatusReject Utility shape. Select Reject as the Flow Action and enter **25** as the Likelihood (Figure 3-34). Click Apply.

Connector Properties	
★Flow Action	Reject
Application	OrderEntrySystem
Work Type	PurchaseOrder
Use Case	
★Likelihood	25
Properties	Name
	Value
Audit Note	
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>	

Figure 3-34. Reject Connector

12. Click anywhere in white space in the Visio work area; confirm that none of the connector arrows are red, including the small boxes at the arrow head and arrow tail. Process Commander marks incomplete connectors in red and “floating” connectors (those with both head and tail unconnected) in gray. Drag the connector arrows to connect them to the shapes if necessary. Your diagram should look like Figure 3-2.
13. Save  your flow changes. If errors appear, fix any errors to correct the diagram and re-save. Exit the Flow Editor and return to the Flow form by clicking Return .

14. Test your process changes using the Run menu. Select **Run > Process > Purchase Order** and create a new purchase order request (Figure 3-35). You do not need to log out, but can act as the entry user, manager, and VP.

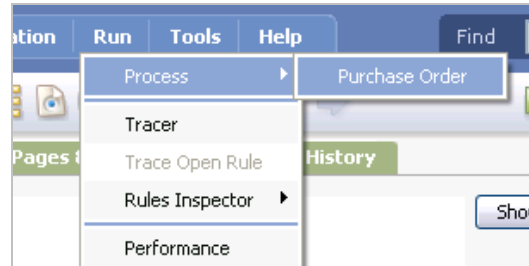


Figure 3-35. Run Menu

To complete the test, do the following:

- Create a new purchase order request, using data values similar to those entered in the example in Chapter 2.
- Enter line items and quantities that produce a total amount that meets one of the criteria for requiring VP approval shown in Figure 3-1. For example, if the Department is HR, any order over \$500 requires her review.
- Confirm the purchase order request.
- As manager, approve the request.
- Verify that after the manager approves the purchase order request, the request is routed to the VP for her approval.

Of course, more complete testing of every condition in the decision table rule is required in real-world development situations.

You may log off now or continue with the next chapter. To log off, click the Log Off link in the upper right area of the portal window.

Chapter 4:




Updating the User Interface

Currently, the Vice President sees the same user interface as the manager when approving or rejecting a purchase order request. However, the VP must enter an approval code and optionally a note.

In this chapter you will enhance the user interface to allow the VP to enter these details.

Building a New Flow Action rule

Rules known as **flow actions** determine which data values are requested in the Take Action area of a work object form when a user completes an assignment. Rather than create a new flow action rule from scratch, it is easier to create the new rule by copying and then modifying the existing ManagerResolve flow action rule.

1. Log in as Developer@AlphaCorp.com with the password **rules**, as in Chapter 3.
2. From the Application Explorer tree in the left panel, find and click the ManagerResolve flow action link to open that rule, following the steps below:
 - a. Click the +  element to expand the PurchaseOrder class.
 - b. Click the +  to expand the User Interface category.
 - c. Click +  to expand the Flow Action rule type
 - d. Click the ManagerResolve link (Figure 4-1). The ManagerResolve flow action rule appears.

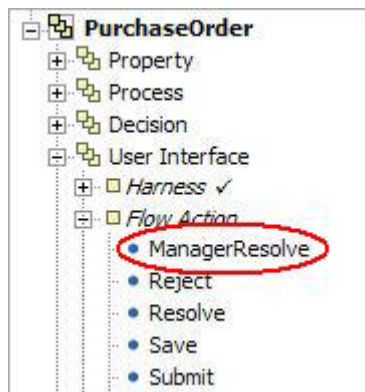



Figure 4-1. ManagerResolve Flow Action Rule

3. Click Save As () to create a copy of that flow action rule. The Save Rule Instance dialog appears (Figure 4-2). Enter the following:
 - a. For the Action Name, replace ManagerResolve with **VPResolve**.
 - b. For the RuleSet, select **OrderEntryDev**.
 - c. For the Version, accept the default value **01-01-01**.

Save Rule Instance under new key -- Webpage Dialog

Flow Action: SaveAs

Filter By: Implementation

Applies To: AlphaCorp-OrderEntrySystem-Purchase

Action Name: VPResolve

▼ **RuleSet Version**

RuleSet: OrderEntryDev

Version: 01-01-01 01-01-01

▼ **Availability**

Available: Yes

Status:

► **Circumstance**

► **Date Range**

Save As Cancel

http://sedu012k3:9080/prweb/PRServlet/f4kAUgIPDeOkJzzZ92maonEaE_2 Local intranet

Figure 4-2. Save New Instance

4. Click the Save As button to create the new VPResolve flow action. At this point the new VPResolve and the original ManagerResolve flow action rules are very similar.
5. Like the original ManagerResolve flow action rule, the new flow action rule presents no display to users. When managers click Approve, the flow action executes without presenting any output. Change the newly created VPResolve flow action rule to remove the “No HTML” option following the steps below.
 - a. Click the HTML tab to bring it to the front.
 - b. On the HTML tab, replace **No HTML** with **Define Form** (Figure 4-3).

FLOW ACTION AlphaCorp-OrderEntrySystem-PurchaseOrder • VPResolve OrderEntryDev : 01-01-01

Applies To: AlphaCorp-OrderEntrySystem-PurchaseOrder
Action Name: VPResolve
Circumstance:
Last Update: Mar 18, 2009 - 11:04:07 EDT

☒ **Valid** Short Description: Approve

Form Help Setup Action Security **HTML** Pages & Classes History

HTML GENERATION

Define Form: Auto Generated HTML: ☒ Portlet Compliant: ☐
 Enable Client Side Validation?: ☐ Enable Expression Calculation?: ☐ Localize?: ☐
 Accessibility: Browser Support: IE6+ and Firefox 2+

Figure 4-3. HTML for Flow Action Rule

6. On the Form tab, modify the Layout to allow the vice president to enter an approval code and an optional note, following the steps below:
 - a. The Manager Resolve flow action appears as shown in Figure 4-4.

FLOW ACTION AlphaCorp-OrderEntrySystem-PurchaseOrder • ManagerResolve OrderEntrySystem : 02-03-01

Applies To: AlphaCorp-OrderEntrySystem-PurchaseOrder
Action Name: ManagerResolve
Circumstance:
Last Update: Mar 26, 2009 - 13:23:46 EDT

Short Description: Approve

Form Help Setup Action Security **HTML** Pages & Classes History

Layout: LABEL FIELD LABEL FIELD

Figure 4-4. Manager Resolve Flow Action

- b. Select the upper-left Label cell and click the magnifying glass icon (🔍). This opens a Cell Properties panel. Enter the text label (user prompt) **Approval Code** in the Value field as shown in Figure 4-5. On the General tab, click the Required box. This will display a required icon (★) next to the label. Click OK.

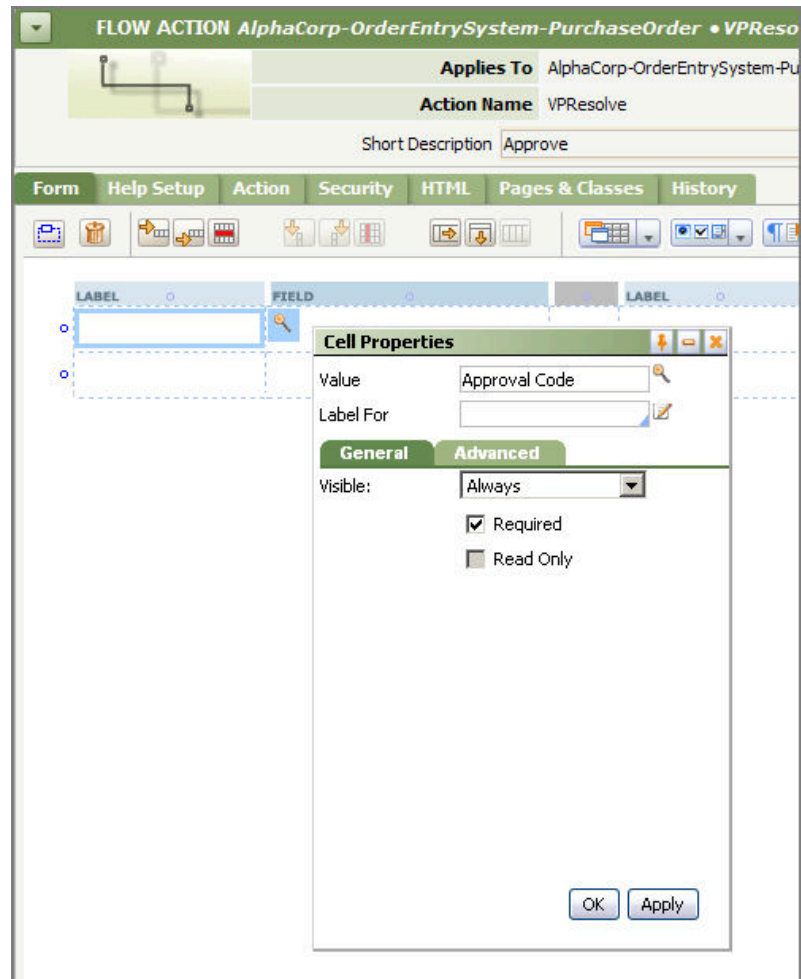


Figure 4-5. Approval Code Label on Flow Action Form

- c. From the Basic control group (), drag the Input Box item to the Field on the top row as shown in Figure 4-6.

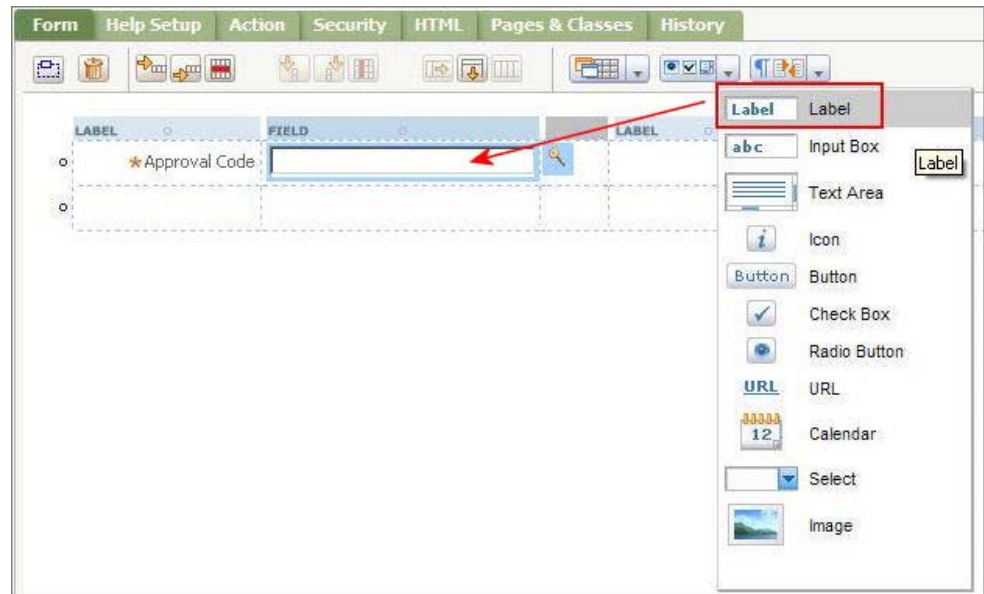



Figure 4-6. Add the Label Field

- d. Click the magnifying glass icon () next to the cell. This opens a Cell Properties panel as shown in Figure 4-7.

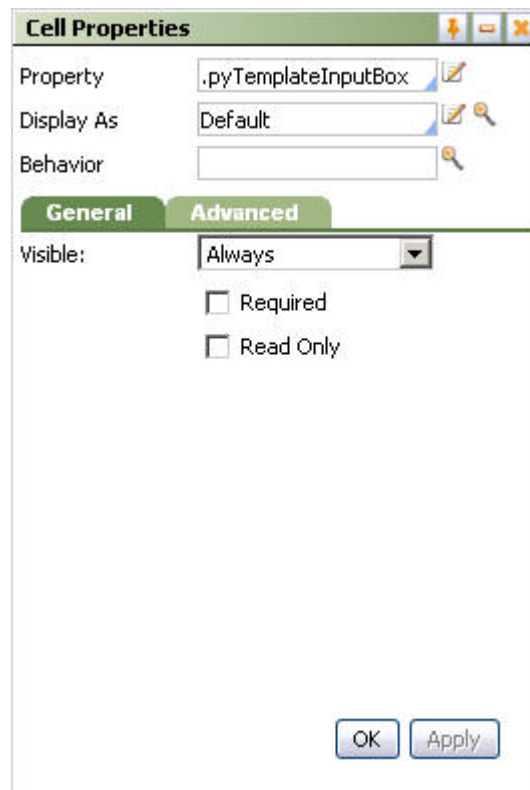


Figure 4-7. Field Cell Properties Panel

- e. Overwrite the default name (.pyTemplateInputBox) with the name **.ApprovalCode** (using the exact case and being sure to include a leading period).
- f. Click the Open icon (📄). This opens a Properties New Rule Instance dialog as shown in Figure 4-8.

Figure 4-8. New Rule Instance Dialog

- g. Make sure that OrderEntryDev is selected in the RuleSet Name field. Click the Quick Create button to create the new property rule in your OrderEntryDev RuleSet. The New Rule Instance closes.
- h. Return to the Cell Properties panel, select the General tab, and click the **Required** box. This ensures that a value is entered in the work form before it is submitted. Otherwise, an error message appears. Click OK.
- i. Click the Label cell on the second row. Open the Cell Properties Panel and enter **Note** in the Value field. Click OK
- j. From the Basic control group, drag a Text Area item to the right cell in the second row Field as shown in Figure 4-9.

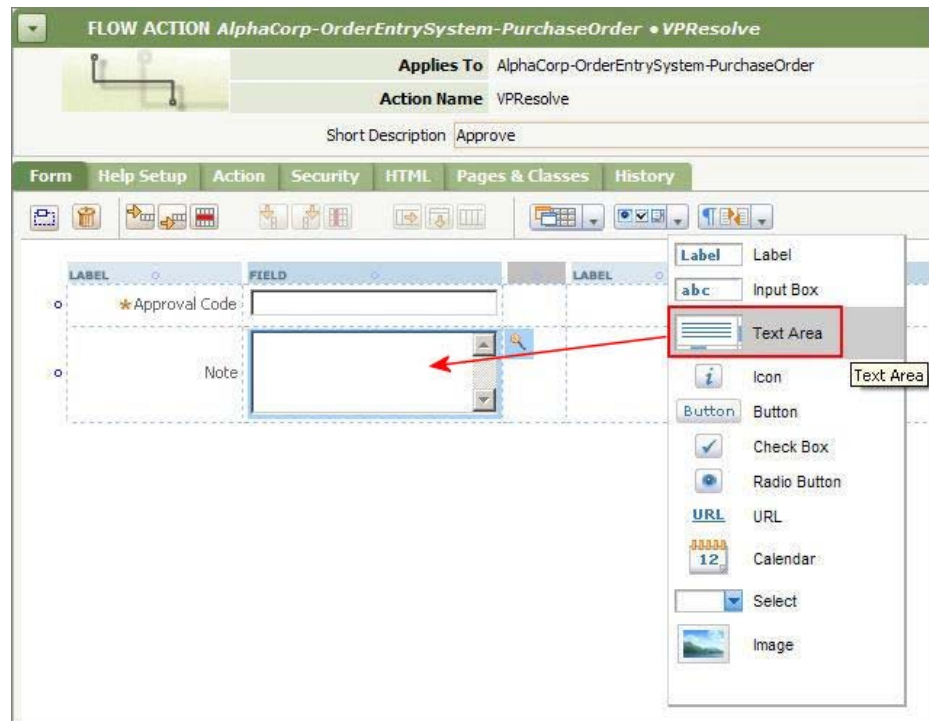


Figure 4-9. Add the Text Area Field

- k. Open the Cell Properties panel. On the Display As field, press the down arrow and a list of properties will display using SmartPrompt. Overwrite the default value (.pyTemplateTextArea) with the property named **.pyNote** in the Name field and click Apply.
- l. Select **TextAreaWithExpand** using SmartPrompt in the Display As field as shown in Figure 4-10.

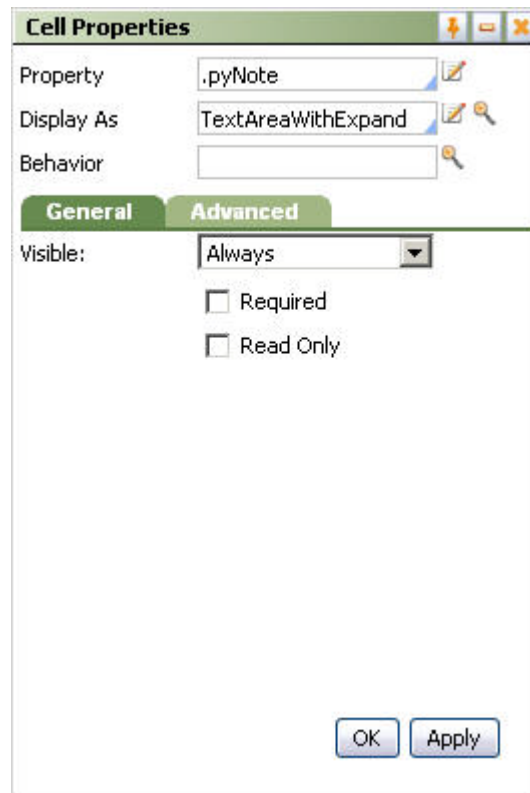



Figure 4-10. TextAreaWithExpand Format Option

- m. Click OK and Save the rule to save your changes to the Flow Action form.
7. Click Preview  to view the runtime presentation of the new flow action rule, at the bottom of the window (Figure 4-11).

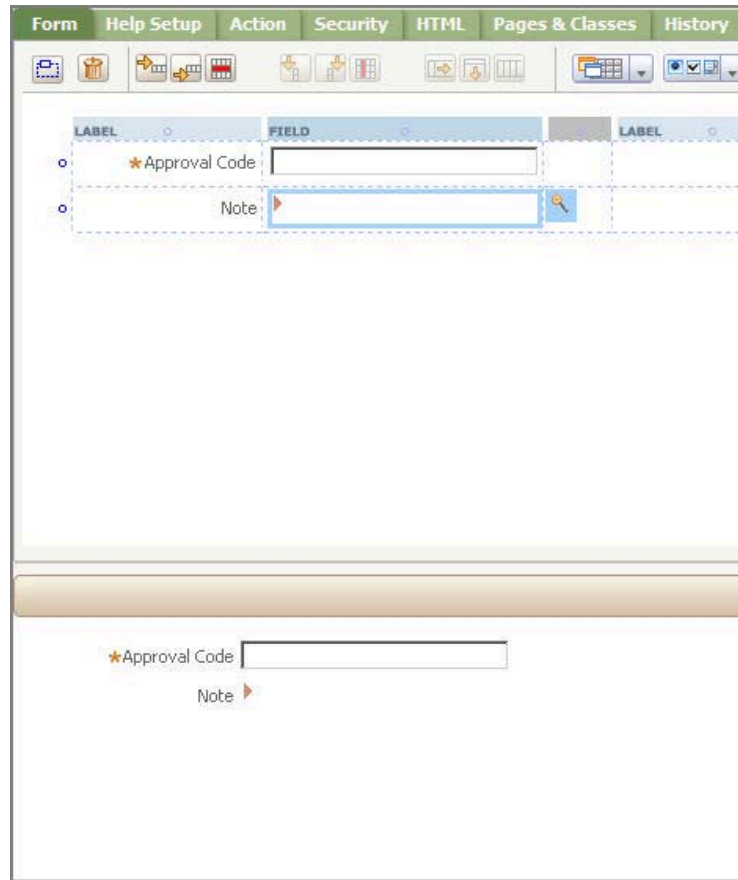




Figure 4-11. UI Preview

8. Click the X button at the top right of the Preview window to close it.
9. Click Close  to close the VPResolve flow action form.

Editing the Flow

At this point, the new flow action VPAApproval is complete, but not referenced by any shape in the flow rule. In this section you will use the Flow Editor again to update the PurchaseOrder flow, so that the new VPResolve flow action runs when the VP approves a purchase order request.

1. Open the PurchaseOrder flow using the Application Explorer.
2. Click the Flow Editor toolbar button . Replace the ManagerResolve flow action (a connector) from the VPAApproval Assignment shape with the new VPResolve flow action, following the steps below:
 - a. Select the ManagerResolve connector that leads from the VPAApproval Assignment shape (Figure 4-12).
 - b. In the Connector Properties panel, replace **ManagerResolve** with **VPResolve**.
 - c. Click the Apply button. The connector as a result is now VPResolve (Figure 4-13).

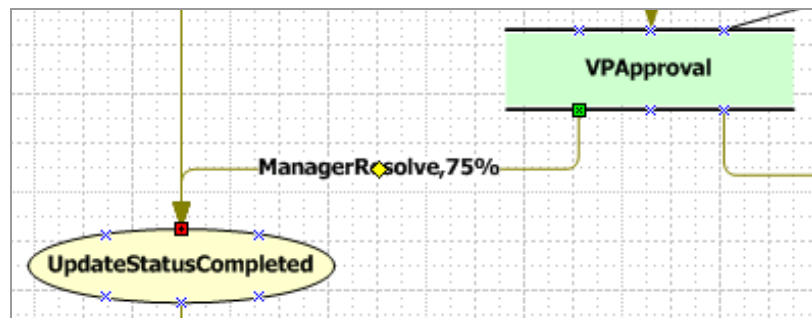


Figure 4-12. Flow Action Update

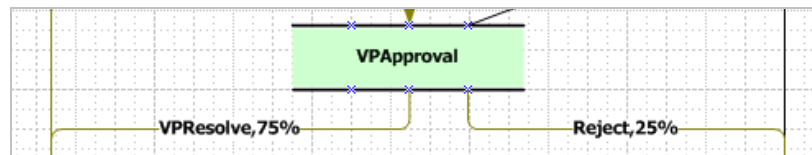



Figure 4-13. Connector Properties

- d. Click Save to save your changes.
- e. Click Return  to close the Flow Editor and return to the Flow rule form.

3. Test the revised process to verify that the VP is now required to enter an Approval Code and an optional note when approving a purchase order request following the steps below:
 - a. Select the **Run > Process > Purchase Order**
 - b. Create a purchase order request that requires VP approval. The requirements are stated in the decision rule table you created in Figure 3-23. For example, enter HR as the Department Name and select one \$2,500 laptop, which requires VP approval.
 - c. As manager, approve the request.
 - d. Click the VP Approval link. The VP sees the Take Action box shown in Figure 4-14.

Purchase Order											
Status: Pending-Approval		Urgency: 10	ID: PO-9								
Subject: Purchase Order		Urgency:									
Created: Mar 18, 2009 2:00:14 PM		Created by: Developer									
<div>Take Action</div> <div>Order Total \$2,500.00</div> <div>Approve Reject</div>											
<div>Order Details Dept Information Parties</div> <table border="1"> <thead> <tr> <th>Item</th> <th>Quantity</th> <th>Price</th> <th>Item Total</th> </tr> </thead> <tbody> <tr> <td>Laptop</td> <td>1</td> <td>\$2,500.00</td> <td>\$2,500.00</td> </tr> </tbody> </table>				Item	Quantity	Price	Item Total	Laptop	1	\$2,500.00	\$2,500.00
Item	Quantity	Price	Item Total								
Laptop	1	\$2,500.00	\$2,500.00								

Figure 4-14. Take Action for VP

When the VP clicks Approve, the approval screen appears. The VP is now required to enter an approval code and may also enter an optional note (Figure 4-15).

Adding a Data Field

When approving purchase order requests, the Vice President would like to add a payment date. To support this requirement, add a Payment Date field to the Vice President Approval form.

1. Log in as Developer@AlphaCorp.com with the password **rules**.
2. In the Application Explorer, the flow action you created earlier (VPResolve) appears as part of the User Interface category. Click the VPResolve flow action link to open the rule (Figure 4-16 and Figure 4-17).

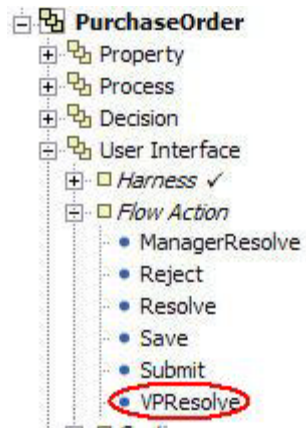


Figure 4-16. VPResolve Flow Action

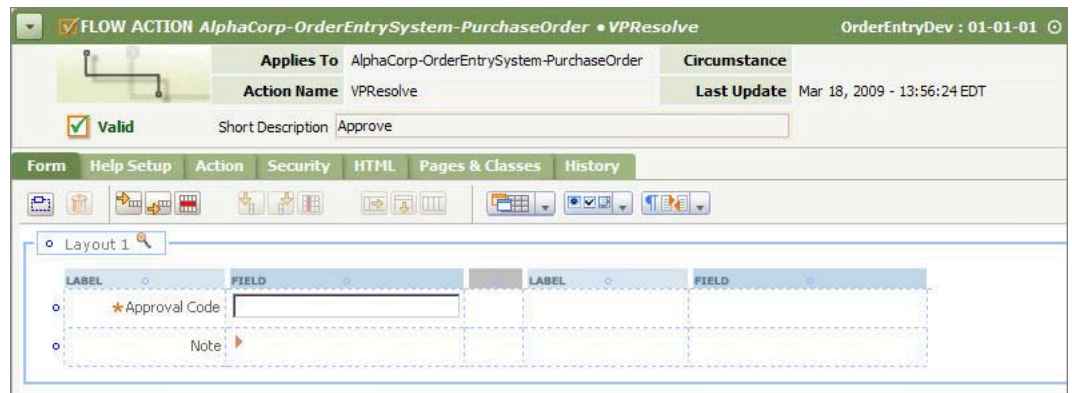



Figure 4-17. Flow Action – Current Form

3. Select the Approval Code cell and then click the Insert Row After button  to insert a new row below the Approval Code row (Figure 4-18).

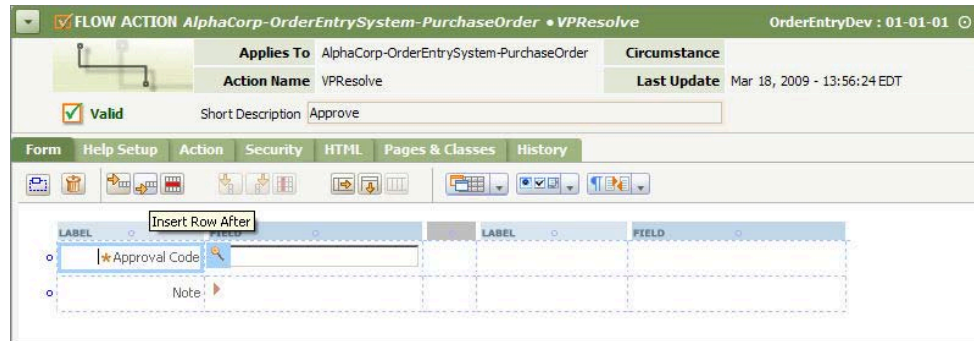





Figure 4-18. Flow Action – Inserting a Row

4. A property rule named PaymentDate already exists. Add this property to the new row following the steps below:
 - a. Click the plus sign (in the Application Explorer) to expand the Property category  within the Purchase Order work type.
 - b. Click the plus sign to expand the Property rule type  (Figure 4-19). Each blue dot identifies a **simple** property rule, one that holds only a single value such as a date or amount. Other icons in this tree, such as , identify **aggregate** properties, which are similar to arrays and structures.
 - c. Select the blue dot to the left of the PaymentDate link. (Do not click the PaymentDate link.)

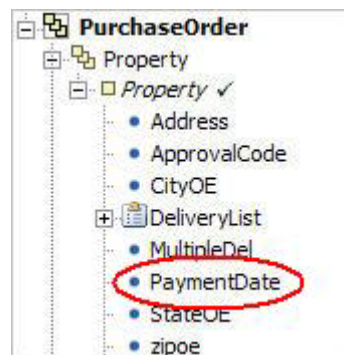


Figure 4-19. Payment Date – Using an Existing Property

5. Hold the mouse button down, and drag the property onto the Flow Action rule form (Figure 4-20). Drop the property into the right Field cell of the new row.

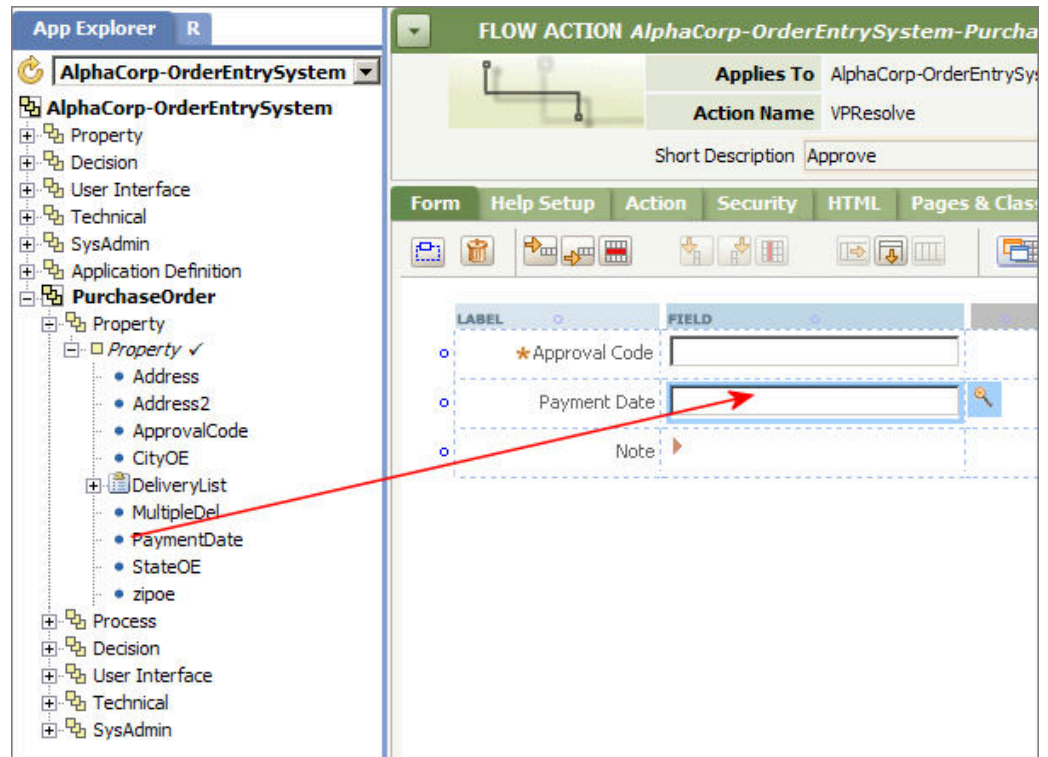



Figure 4-20. Payment Date Label

The cell now contains the .PaymentDate property. This property holds a date and time. Process Commander supports a wide variety of input and output formats for dates and times.

6. Click the Magnifying Glass icon  next to the Payment Date cell to open the Cell Properties panel and specify a display format for the PaymentDate property.
7. Select the magnifying Glass icon next to the Display As field to open the Param Window (Figure 4-21).

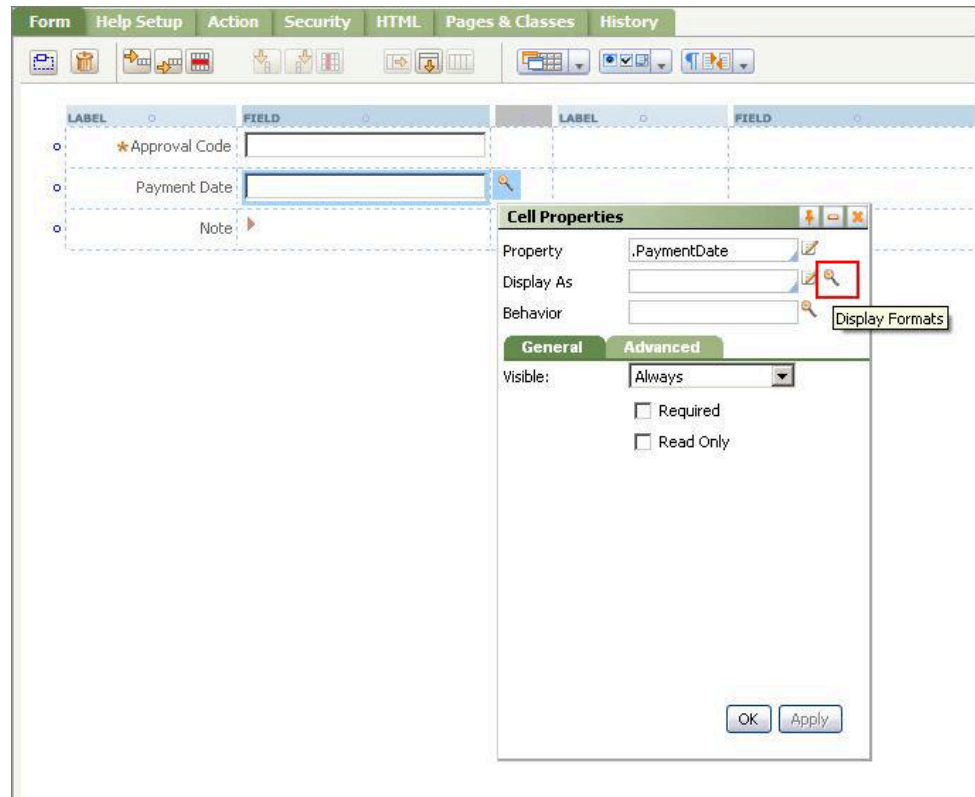


Figure 4-21. Display As Selection

8. Complete the Display Formats dialog following these steps
 - a. Select **DateTime** for the Format field. (SmartPrompt is available.)
 - b. Click the Params button and select display parameters for the format. Select the **Calendar Icon** and **Allow Text Field Entry** check boxes. In the Available Formats section, select the format that you like (Figure 4-22).

Note: In this example the display mode is set to **Popup window** which displays the calendar in a separate popup window. **Allow TextField Entry** is set to enable text to be entered. **Available Formats** indicate the type of display to be used.

Param Window -- Webpage Dialog

Current Format: Format: DateTime Params

Parameters

Display Mode: Popup window

DateTime Format: Select a value...

Calendar Icon: ☒

Allow TextField Entry: ☒

Size:

Width:

Calculated Value: ☐

ReadOnly SmartInfo:

ReadWrite SmartInfo:

ReadWrite SmartInfo:

Year Span:



Available Formats

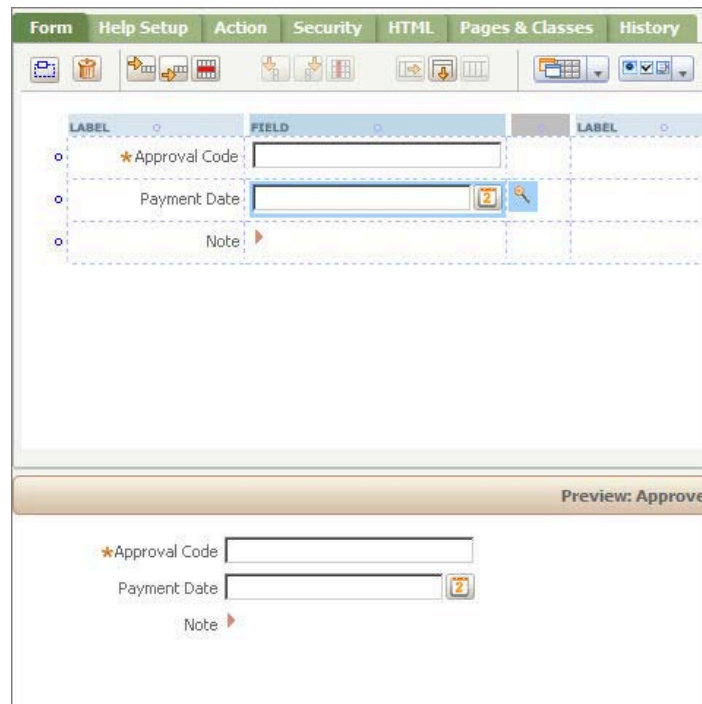
String Type: DateTime Display Type: Input Field Refresh List

Name	Read-Write	Read-Only
<input type="radio"/> CalculatedValue	20090318T184501.099 GMT	20090318T184501.099 GMT
<input checked="" type="radio"/> DateTime	3/18/2009 2:45 PM	3/18/2009 2:45 PM
<input type="radio"/> DateTime-CalendarHarness	3/18/2009 2:45 PM	3/18/2009 2:45 PM
<input type="radio"/> Default	Mar 18, 2009 2:45:01 PM	Mar 18, 2009 2:45:01 PM
<input type="radio"/> SelectDateTime	2009 - Mar - 18 2:45 PM	3/18/2009 2:45 PM
<input type="radio"/> ValueWithMessages	20090318T184501.099 GMT	20090318T184501.099 GMT

OK Cancel

Figure 4-22. Display Parameter


9. Click OK to save the display format to the rule form. The Format dialog closes.
10. In the Cell Properties panel, click OK.
11. Click the Save toolbar button  to save the updated VPResolve flow action rule form.
12. Click the Preview toolbar button  to view the effect of your changes (Figure 4-23).



The screenshot shows the VPResolve flow action rule form with the following elements:

- Form Header:** Includes tabs for Form, Help Setup, Action, Security, HTML, Pages & Classes, and History.
- Form Fields:**
 - Approval Code:** A text field with a star icon.
 - Payment Date:** A date field with a calendar icon.
 - Note:** A text area.
- Preview Dialog:** A dialog box titled "Preview: Approve" showing the form fields as they will appear in the application.

Figure 4-23. Preview of Changes

13. Test the changes, following the steps below:
 - a. Select Run > Process > PurchaseOrder to create a new purchase order request.
 - b. Choose order quantities that will require Vice President approval.
 - c. Enter shipping details and complete the manager approval step.
 - d. As Vice President, confirm that the payment date is requested.
 - e. Click the calendar icon  to enter a date and time.

Inspecting Declarative Rules

This application calculates several properties with **declarative rules**, which are rules that define calculations among property values. For example, the OrderTotal property value is the sum of all LineItemTotal values, and each LineItemTotal is the value of the item's Price multiplied by Quantity.

To see the list of declarative rules, go to the Application Explorer, select the AlphaCorp-OrderEntrySystem class, expand Decision, and then expand the Declare Expressions category as shown in Figure 4-24.

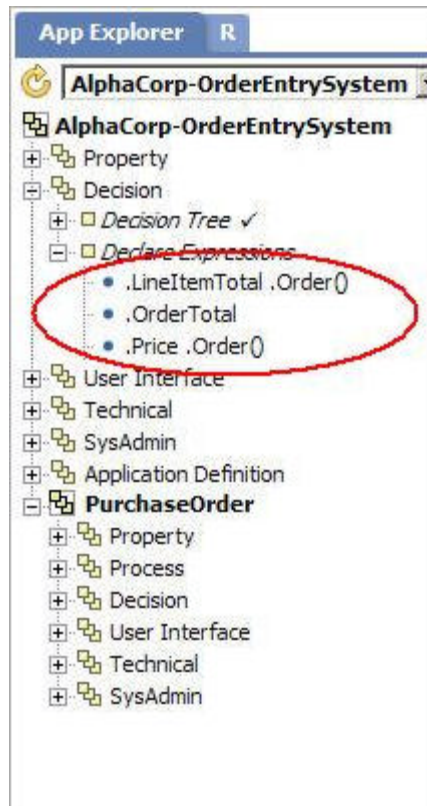


Figure 4-24. Declare Expressions in Application Explorer

To open a rule, click on a rule name. Figure 4-25 and Figure 4-26 show the .OrderTotal and LineItemTotal.Order() rule forms respectively. The property values are enclosed in the dashed red lines.



Figure 4-25. Declarative Expression for Order Total



Figure 4-26. Declarative Expression for Line Item Total

Like formulas in a Microsoft Excel spreadsheet, properties controlled by declarative rules are computed automatically whenever a value changes that affects the computation. For example, the target property `LineItemTotal` is computed whenever the `Price` or `Quantity` changes. Similarly, you don't need to create an explicit program to recalculate the `OrderTotal` after you input a quantity.

Using the Declarative Rules Inspector

You can use the Declarative Rules Inspector to see which properties are dependent upon these rules, and to graphically illustrate those dependencies.

1. To enable the Declarative Rules Inspector, select **Run > Rules Inspector > Declarative Rules** (Figure 4-27).

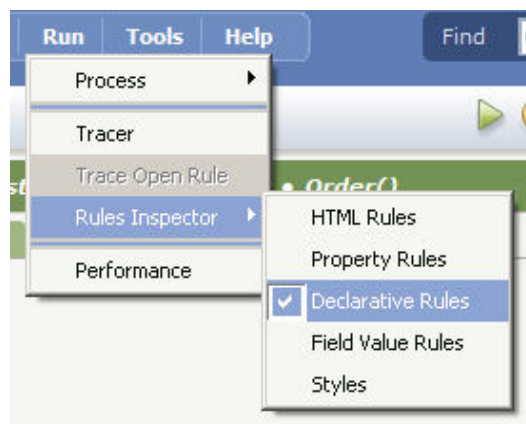


Figure 4-27. Declarative Rules Inspector

2. Create a new purchase order request by selecting **Run > Process > Purchase Order** menu item. On the work object form, a “D” link appears next to each property that is calculated by a declarative rule. For example, assume that you enter four order items and then advance to a form that includes Order Total. Notice that a D appears next to the property (Figure 4-28). Click the “D” link to inspect how that property value is calculated.



Figure 4-28. Reviewing Declarative Rules

After clicking the “D”, the Dependency Network Viewer appears showing the Dependency Network for the OrderTotal property (Figure 4-29).

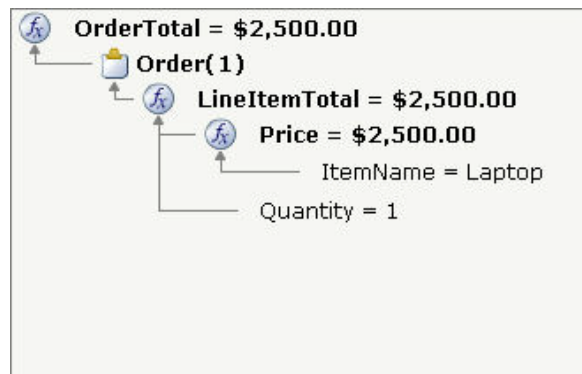


Figure 4-29. Dependency Network Viewer

The symbols shown are described below:

- A function symbol (⌘) references a declarative rule.
- The arrows show how computations depend on each other; that is, where results from one computation feed into inputs of a later computation.

Process Commander supports complex declarative rules and lets you test and debug declarative computations interactively.

To disable the Rules Inspector feature, select **Run > Rules Inspector > Declarative Rules**.

Chapter 5:

Reviewing Your Application

By following Chapters 3 and 4 in this tutorial, you used rule forms and the flow editor to refine the Order Entry System application. Process Commander uses sophisticated industry-standard technologies to implement your changes without requiring you to directly specify coding-level details. You do not need advanced IT skills to produce applications that are functional, easy to use, and visually appealing.

Developing Applications by Changing Rules

You created a few rules in the OrderEntryDev RuleSet that include the following:

- A flow rule PurchaseOrder that supports the VP approval steps, replacing the less-sophisticated flow rule in the original application
- A decision table rule NeedsVPApproval that controls which purchase order requests are routed to the VP for review
- Two property rules used to hold values entered by the Vice President:
 - ApprovalCode
 - PaymentDate
- A VPResolve flow action that prompts the VP with two new fields after the VP approves a purchase order request

These rules supplement the rules in the OrderEntrySystem RuleSet, which defines the original application before you changed it. As you will see in Chapter 6, *Documenting Your Application*, the Order Entry System RuleSet contains about 125 rules.

The Application Explorer provides developers with quick access to rules in both the OrderEntrySystem RuleSet and the OrderEntryDev RuleSet. These rules, in turn, build on hundreds of built-in, out-of-the-box standard rules that are present in every Process Commander system and form the foundation building blocks of applications.

Technology Under the Covers

If you are familiar with the technologies mentioned below, you can appreciate the power and breadth of Process Commander as a development environment.

- A property rule (for example the ApprovalCode property) corresponds to a scalar variable.
- Flow action rules are converted to HyperText Markup Language (HTML).
- The Visio representation of a business process is converted internally to an XML (eXtended Markup Language) document that later becomes a Java class.
- Rules and other data are stored in a relational database supported by any of several popular database products from Oracle, Microsoft or IBM.
- Computations such as declarative rules and decision table rules are transformed into efficient Java programs.

The architecture and design of Process Commander provides these benefits:

- Inheritance and polymorphism that allows you to build applications by overriding or extending existing rules. For example, the flow rule that you created overrides (supersedes) the initial flow rule that came with the Order Entry System application.
- Through hardware clustering, one Process Commander system can support thousands of users in multiple locations who enter, work on, and resolve millions of work objects.
- Applications can be developed iteratively with incremental enhancements.
- Developers can quickly switch from a development task to a testing task and back as you did by using the Run > Process menu.
- Process Commander applications can interface with other systems using a wide variety of industry-standard technologies (such as SOAP / Web services, e-mail, relational databases, J2EE facilities including Enterprise JavaBeans, and JavaServer Pages).

Chapter 6:

Documenting Your Application

Process Commander includes tools that enable you to easily document what you have built. This chapter describes how to use those tools.

Documenting the Order Entry System Application

1. Select **Application > Document** (Figure 6-1)

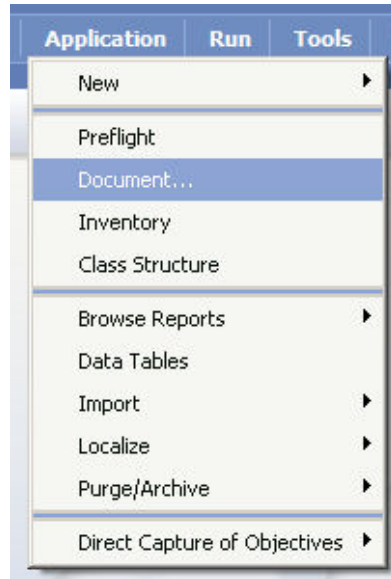


Figure 6-1. Document Menu Item

A Document wizard appears, letting you select which items you would like to include about your application in the document (Figure 6-2). Complete the wizard selecting desired criteria.

The screenshot shows a dialog box titled "Application Documentation Wizard - Document an Application". On the left is a vertical list of steps, with "Select Application" highlighted. The steps are: Select Application, Select RuleSets, Select Work Types, Select Criteria, Order Flows, Define Diagrams, Define Screenshot Data, Capture Screens, and Create Document. On the right, there are two dropdown menus: "Application" with "OrderEntrySystem" selected, and "Template" with "ApplicationDocument" selected. A small icon of a document with a pencil is next to the Template dropdown. At the bottom right are two buttons: "Cancel" and "Next >>".

Step	Application	Template
Select Application	OrderEntrySystem	ApplicationDocument
Select RuleSets		
Select Work Types		
Select Criteria		
Order Flows		
Define Diagrams		
Define Screenshot Data		
Capture Screens		
Create Document		

Figure 6-2. Document Selection Menu

2. Click the Create Document button. Process Commander creates a Word document listing all the rules in your application. This may take a minute or two (Figure 6-3).

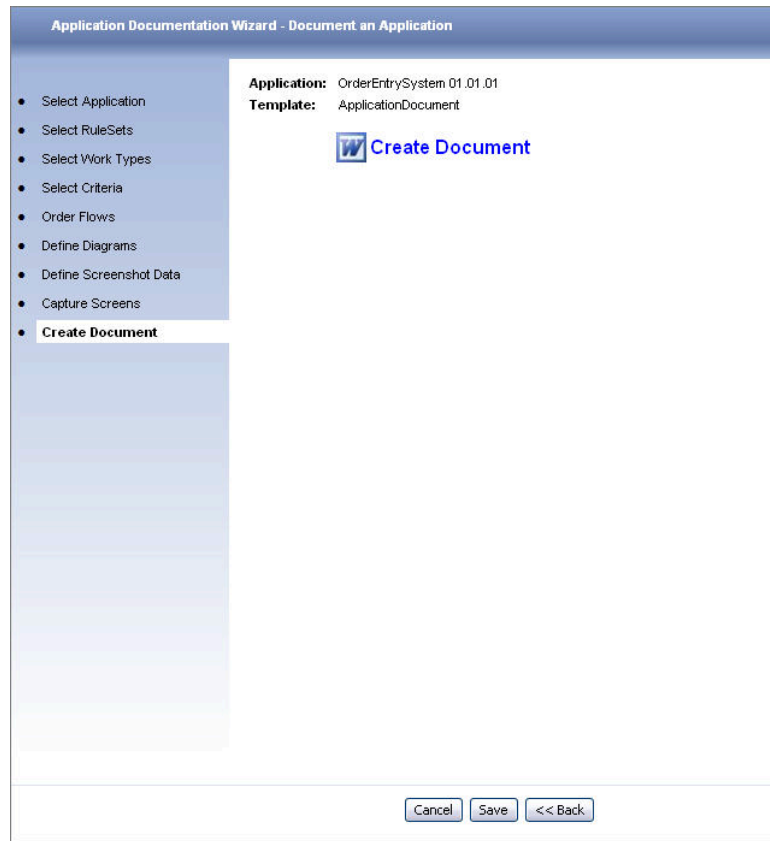


Figure 6-3. Create Document

The following pages show the document created by Process Commander for the Order Entry System.

Note: Page breaks and fonts in the generated Order Entry System document have been modified for inclusion in this book.

When your work with Process Commander is complete, click the Log Off link at the upper right corner of the Developer portal to end the Internet Explorer client session.

This is the conclusion of the Developer Fast Start guide. More information on the OrderEntrySystem application and appendices on the Developer toolbar and Workstation Setup can be found in the following pages.



Application Document for OrderEntrySystem
01.01.01
OrderEntrySystem

Created by: Developer
On March 20, 2009

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Document Name: Application Document

Updated: March 26, 2009

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Overview of OrderEntrySystem

01.01.01

Description

Created by External Setup Wizard

Actors

None found

Work Types

Name	Implementation Class
AlphaCorp-OrderEntrySystem	AlphaCorp-OrderEntrySystem
AlphaCorp-OrderEntrySystem-PurchaseOrder	AlphaCorp-OrderEntrySystem-PurchaseOrder

RuleSets

RuleSet	Version	Description	Prerequisites
OrderEntrySystem	02-03-01	RuleSet to identify, manage, and control the set of rule instances that define OrderEntrySystem application	AlphaCorp:01-01-01 Pega-ProCom:05-05-05 Pega-AppDefinition:05-05-05
AlphaCorp	01-01-01	Template	Pega-ProCom:05-05-05

AlphaCorp-OrderEntrySystem

Implementation: AlphaCorp-OrderEntrySystem

Description: Order Entry System

AlphaCorp-OrderEntrySystem-PurchaseOrder

Implementation: AlphaCorp-OrderEntrySystem-PurchaseOrder

Description: Properties, HTML forms, and flows in the AlphaCorp-OrderEntrySystem-PurchaseOrder class are available to support the behavior and appearance of Purchase Order type of work

PurchaseOrder - Flow

Applies to Class: AlphaCorp-OrderEntrySystem-PurchaseOrder

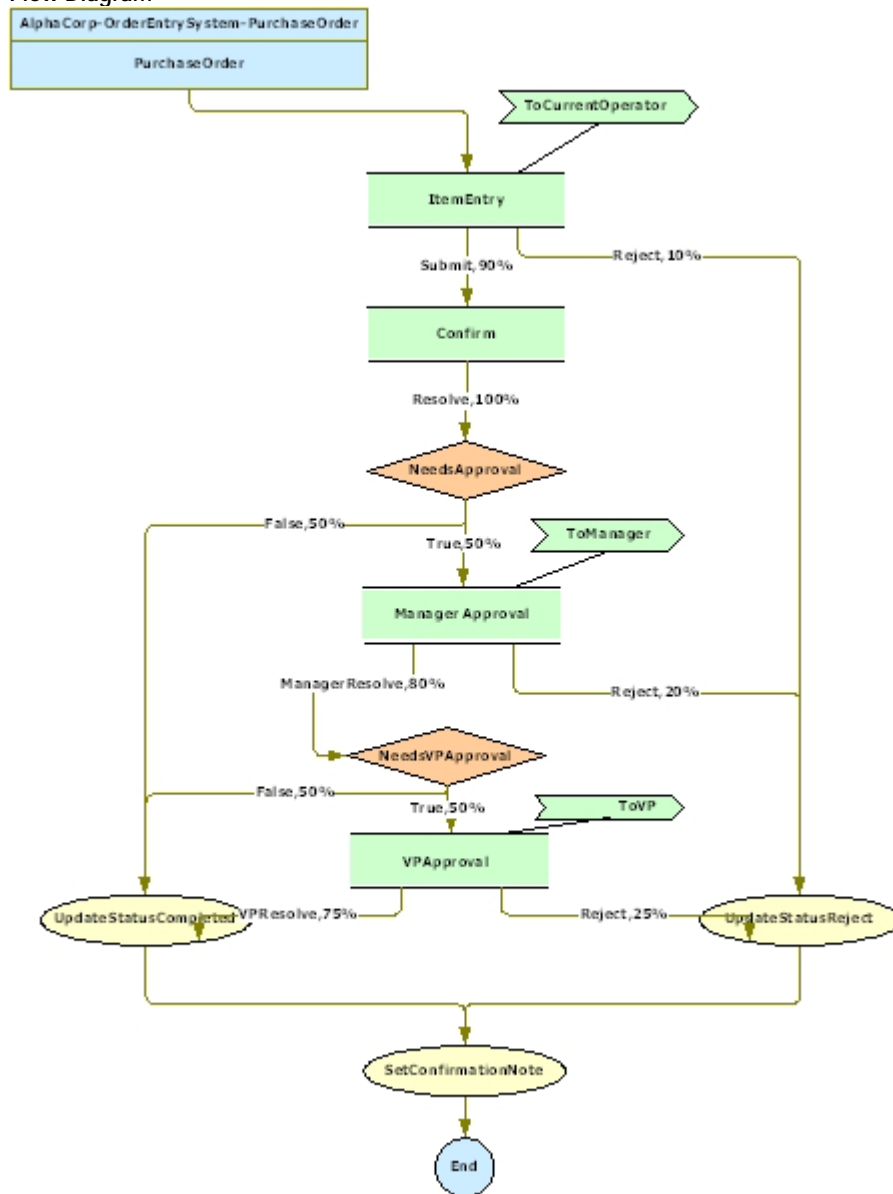
Short Description: Purchase Order

Long Description: Basic Process Template of ProcessFlow (Default) Flow Category

Usage: Basic Process Template of ProcessFlow (Default) Flow Category [Generated automatically through Accelerator process]

RuleSet: OrderEntryDev : 01-01-01

Flow Diagram



Primary Path

Submit, 90% - Transition

Implementation: Submit

Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)

Applies to Class: AlphaCorp-OrderEntrySystem-PurchaseOrder

Short Description: Enter Order Items

Long Description: Used to set the pyChargeAmount field.

Usage: Used on StandardRequest flow.

RuleSet: OrderEntrySystem : 02-03-01

Resolve,100% - Transition

Implementation: Resolve
 Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)
Applies to Class: AlphaCorp-OrderEntrySystem-PurchaseOrder
Short Description: Confirm this order
Long Description: Use this FlowAction to Record Completion of Work.
RuleSet: OrderEntrySystem : 02-03-01

NeedsApproval - Decision

Implementation: OrderTotalNeedsApproval
 Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)
Applies to Class: AlphaCorp-OrderEntrySystem
Short Description: OrderTotalNeedsApproval
RuleSet: OrderEntrySystem : 02-03-01

• if .OrderTotal > 100 then RETURN True
 otherwise RETURN False

Alternate Path 1

ManagerResolve,80% - Transition

Implementation: ManagerResolve
 Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)
Applies to Class: AlphaCorp-OrderEntrySystem-PurchaseOrder
Short Description: Approve
Long Description: Use this FlowAction to Record Completion of Work.
RuleSet: OrderEntrySystem : 02-03-01

NeedsVPApproval - Decision

Implementation: NeedsVPApproval
 Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)
Applies to Class: AlphaCorp-OrderEntrySystem-PurchaseOrder
Short Description: NeedsVPApproval
RuleSet: OrderEntryDev : 01-01-01

	Conditions			Actions
	DeptName	BillCustomer	OrderTotal	Return
	=	=	=	
if	IT		>1000	True
else if	HR		>500	True
else if	Finance	=False		True
else if	Finance	=True	>200	True
else if	Legal	=True	>500	True
else if	Legal	=False	>200	True
Otherwise				False

VPResolve,75% - Transition

Implementation: VPResolve
 Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)

Applies to Class: AlphaCorp-OrderEntrySystem-PurchaseOrder
Short Description: Approve
Long Description: Use this FlowAction to Record Completion of Work.
RuleSet: OrderEntryDev : 01-01-01

Alternate Path 2

Reject,25% - Transition

Implementation: Reject
Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)
Applies to Class: AlphaCorp-OrderEntrySystem-PurchaseOrder
Short Description: Reject
Long Description: This flow action is for rejecting the work object.
Usage: Used by the StandardEvaluate flow. Approval flows should use the Disapprove flow action, not Reject.
RuleSet: OrderEntrySystem : 02-03-01

Alternate Path 3

Reject,20% - Transition

Implementation: Reject
Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)

[See Reject](#) (Page 38)

Alternate Path 4

Reject,10% - Transition

Implementation: Reject
Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)

[See Reject](#) (Page 38)

Other Referenced Rules

Save - Flow Action

Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)
Applies to Class: AlphaCorp-OrderEntrySystem-PurchaseOrder
Short Description: Save
Long Description: Save - The validate activity will not be called
RuleSet: OrderEntrySystem : 02-03-01

Transfer - Flow Action

Referenced By: [PurchaseOrder - Flow](#) (Page 6-35)
Applies to Class: Work-
Short Description: ReAssign
Long Description: ReAssign the Assignment (LocalAction)
RuleSet: Pega-ProCom : 05-05-01

PurchaseOrder - Flow

Applies to Class: AlphaCorp-OrderEntrySystem-PurchaseOrder

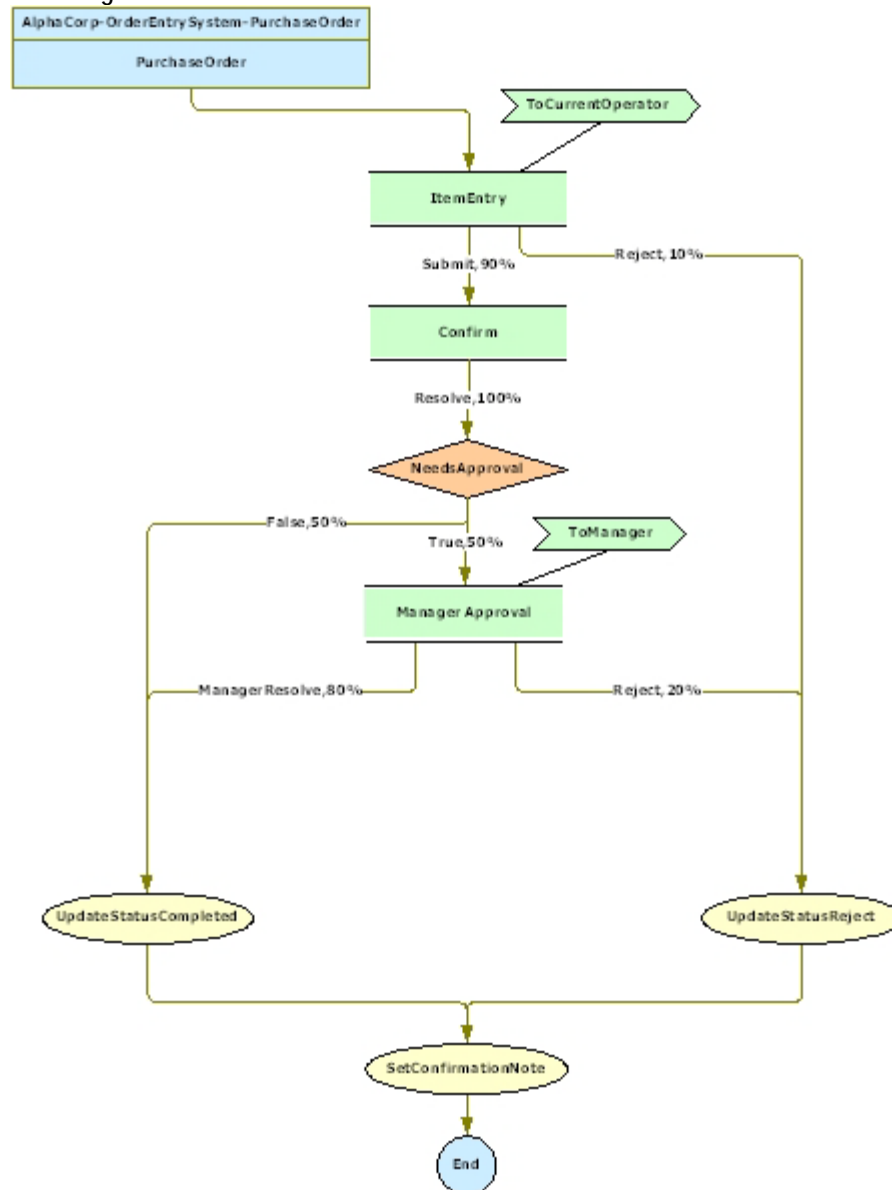
Short Description: Purchase Order

Long Description: Basic Process Template of ProcessFlow (Default) Flow Category

Usage: Basic Process Template of ProcessFlow (Default) Flow Category [Generated automatically through Accelerator process]

RuleSet: OrderEntrySystem : 02-03-01

Flow Diagram



Primary Path

Submit, 90% - Transition

Implementation: Submit

Referenced By: [PurchaseOrder - Flow](#) (Page 39)

[See Submit](#) (Page 36)

Resolve,100% - Transition

Implementation: Resolve

Referenced By: [PurchaseOrder - Flow](#) (Page 39)

[See Resolve](#) (Page 37)

NeedsApproval - Decision

Implementation: OrderTotalNeedsApproval

Referenced By: [PurchaseOrder - Flow](#) (Page 39)

[See OrderTotalNeedsApproval](#) (Page 37)

Alternate Path 1

ManagerResolve,80% - Transition

Implementation: ManagerResolve

Referenced By: [PurchaseOrder - Flow](#) (Page 39)

[See ManagerResolve](#) (Page 37)

Alternate Path 2

Reject,20% - Transition

Implementation: Reject

Referenced By: [PurchaseOrder - Flow](#) (Page 39)

[See Reject](#) (Page 38)

Alternate Path 3

Reject,10% - Transition

Implementation: Reject

Referenced By: [PurchaseOrder - Flow](#) (Page 39)

[See Reject](#) (Page 38)

Decisions

Tables

PriceLookup

Applies to Class: AlphaCorp-OrderData

Short Description: PriceLookup

RuleSet: OrderEntrySystem : 02-03-01

	Conditions	Actions
	ItemName	Return
	=	
if	Laptop	"2500.00"
else if	Keyboard	"39.99"
else if	Monitor	"550.00"
else if	Mouse	"19.99"
else if	Printer	"325.50"
else if	Pen	"1.00"
else if	Stapler	"5.59"
else if	Envelopes	"2.50"
Otherwise		

NeedsVPApproval

Applies to Class: AlphaCorp-OrderEntrySystem-PurchaseOrder

Short Description: NeedsVPApproval

RuleSet: OrderEntryDev : 01-01-01

	Conditions			Actions
	DeptName	BillCustomer	OrderTotal	Return
	=	=	=	
if	IT		>1000	True
else if	HR		>500	True
else if	Finance	=False		True
else if	Finance	=True	>200	True
else if	Legal	=True	>500	True

	Conditions			Actions
else if	Legal	=False	>200	True
Otherwise				False

Trees

OrderTotalNeedsApproval

Applies to Class: AlphaCorp-OrderEntrySystem

Short Description: OrderTotalNeedsApproval

RuleSet: OrderEntrySystem : 02-03-01

- if .OrderTotal > 100 then RETURN True
otherwise RETURN False

Map Values

None found

Activities

Applies To	Name	Description	RuleSet	Version
Purchase Order	AddDelivery	AddDelivery	OrderEntrySystem	02-03-01
Purchase Order	FirstOrder	FirstOrder	OrderEntrySystem	02-03-01
Purchase Order	ToManager	To Manager	OrderEntrySystem	02-03-01
Purchase Order	ToVP	To VP	OrderEntrySystem	02-03-01
Document an Application	OpenApplication	OpenApplication	OrderEntrySystem	02-03-01

Properties

Applies To	Name	Description	Mode	RuleSet	Version
AlphaCorp-OrderData	ItemName	ItemName	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderData	LineItemTotal	LineItemTotal	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderData	Price	Price	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderData	Quantity	Quantity	String	OrderEntrySystem	02-03-01
AlphaCorp-Order DeliveryInfo	DeliveryMethod	DeliveryMethod	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System	BillCustomer	BillCustomer	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System	DeptName	DeptName	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System	DeptNumber	DeptNumber	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System	Order	Order	PageList	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System	OrderDate	OrderDate	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System	OrderTotal	OrderTotal	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System-PurchaseOrder	Address	Address	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System-PurchaseOrder	Address2	Address	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System-PurchaseOrder	ApprovalCode	ApprovalCode	String	OrderEntryDev	01-01-01
AlphaCorp-OrderEntry System-PurchaseOrder	CityOE	CityOE	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System-PurchaseOrder	DeliveryList	DeliveryList	PageList	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System-PurchaseOrder	MultipleDel	MultipleDel	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System-PurchaseOrder	PaymentDate	PaymentDate	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System-PurchaseOrder	StateOE	StateOE	String	OrderEntrySystem	02-03-01
AlphaCorp-OrderEntry System-PurchaseOrder	Zipoe	zipoe	String	OrderEntrySystem	02-03-01
AlphaProducts	ProductName	ProductName	String	OrderEntrySystem	02-03-01
AlphaProducts	ProductPrice	ProductPrice	String	OrderEntrySystem	02-03-01

Applies To	Name	Description	Mode	RuleSet	Version
Work-	pySelected	Selection Flag	String	OrderEntrySystem	02-03-01

Declaratives

Expressions

.LinItemTotal .Order()

Applies to Class: AlphaCorp-OrderEntrySystem

Short Description: .LinItemTotal

RuleSet: OrderEntrySystem : 02-03-01

Execute this expression: Only when the top-level page is of the Applies To class

Calculate value: Whenever inputs change

Set .LinItemTotal = Value of .Price * .Quantity

.OrderTotal

Applies to Class: AlphaCorp-OrderEntrySystem

Short Description: .OrderTotal

RuleSet: OrderEntrySystem : 02-03-01

Execute this expression:

Calculate value: Whenever inputs change

Set .OrderTotal =

.Price .Order()

Applies to Class: AlphaCorp-OrderEntrySystem

Short Description: .Price

RuleSet: OrderEntrySystem : 02-03-01

Execute this expression: Only when the top-level page is of the Applies To class

Calculate value: Whenever inputs change

Set .Price = Result of Decision Table PriceLookup

Triggers

None found

OnChange

None found

Appendix A





The Developer Toolbar

















A toolbar appears at the top of the Developer portal. The buttons that appear on the toolbar depend on the class or instance selected.

Toolbar Buttons and Functions

The tools and selection boxes on the toolbar vary depending on the contents of the form and list area. If a button does not appear or is unavailable (gray), the corresponding function is not available to you in the current context.

Figure A-0-1 describes all the buttons that may appear.

Name	Button	Function
Availability		Changes the availability of the rule. Select Yes, No/Draft Mode, Final, or Blocked from the dialog box that opens.
Check In		This button appears only for rules in RuleSets subject to rule management. After checking out a rule to a private RuleSet, use Check In to copy the modified rule over the original in the public RuleSet.
Check Out		This button appears only for rules in RuleSets subject to rule management. Creates a copy of a rule in your private RuleSet and marks the original rule as checked out. No one else can check out a rule while it is checked out.
Delete		Deletes a rule or data instance.

Name	Button	Function
Delete Check-out		Delete a checked-out rule from your personal RuleSet.
Draft Mode		Click to turn draft mode on or off. Elements of this flow rule may reference activities, flow actions, or other objects as yet undefined.
Favorites		Adds to your Favorites in Internet Explorer, or helps you delegate a rule using the My Rules feature.
Flow Editor		Starts Visio for you to edit or review the flow.
Help		Opens the Help window for the currently displayed rule or data form.
Launch		Moves the current form into a separate window with a copy of its own toolbar, enabling you to compare two forms, or work with a source of information or values in the main portal window and paste into another portal window.
Navigate Left		Scrolls the toolbar to the left if the toolbar is wider than the browser window.
Navigate Right		Scrolls the toolbar to the right if the toolbar is wider than the browser window.
New		Creates a new rule or data instance of the same type as the currently open rule or data instance. Use the arrow to display a menu containing all rule types.
Next View		Cycles down to the next item in the Views display — open forms, most recent list, home slices, and wizards.
Preview		Splits the workspace to present a partial preview of the runtime appearance of a rule in the bottom half.
Previous Rule		Cycles up to the next item in the Views display — open forms, most recent list, home slices, and wizards.
Print		Prints all tabs of the topmost form.
Recover		Recovers the most recent version of a deleted rule, if the RuleSet and version is unlocked.
Refresh		Refreshes the browser display from the latest data in the Process Commander server, ensuring that the display has the most current data. Any inputs you have entered but not sent are lost.
Related Rules		Lists rules related to the current rule. Clicking displays a menu that lists lower-numbered versions of the currently open rule, circumstance and circumstance-date, editions, and additional menu items.

Name	Button	Function
Restore		Replaces the current checked-in copy of a rule with the last checked-in copy of that rule.
Return		Exits Visio and returns to normal editing mode.
Rule Data		Shows the XML document that makes up the form displaying this instance. This is primarily a debugging tool.
Run		Starts execution or testing of the current rule, in the current context.
Save		Saves the instance to the PegaRULES database.
Save As		Saves the instance under a different name, RuleSet, or version.
Show Java		After a rule is saved, approximation of the generated Java to be created by this rule instance appears in a new window. (You cannot alter this Java code.) This button is visible to developers who hold the privilege @baseclass.ToolbarFull. Available for activities, when rules, and stream rules, among others.
Views		Click to access a pop-up window listing currently open forms by type, the most recent list presented in the portal workspace, and wizards in process.
Visio Tools		Display, or hide, Visio toolbars during Visio editing.
Zoom In (Visio)		Zoom in on the Visio diagram, to make the diagram larger.
Zoom Out (Visio)		Zoom out from the Visio diagram, to make the diagram smaller.

Figure A-0-1. Workspace Toolbar Buttons

Appendix B

Workstation Setup

This Appendix describes setting up your Process Commander workstation and includes information about:

- Temporary internet file settings
- Downloaded program files
- Other security settings
- Performance tips and keyboard shortcuts
- Visio settings

Internet Explorer Settings

Process Commander works with Microsoft Internet Explorer Web browser version 6.01 or version 7 with current Microsoft security patches installed. To use the Developer portal you must use Internet Explorer 6 and 7 only, but the V5.5 composite portals (User and Manager, not WorkUser and WorkManager) also support Firefox 2+. Internet Explorer is also known as IE or MSIE, and serves as a thin client for both application developers and application users. All pop-up blockers (such as those provided by Yahoo! or Google toolbars) must be disabled.

Several settings are important for best use of MSIE with Process Commander. In many cases, these may correspond to the settings you normally use for intranet or other Local Zone processing.

For additional settings not needed by most Developer Fast Start readers, select Help > Developer Help to open the Process Commander help system, and search for the topic "How to set up Internet Explorer. "

Temporary Internet Files Settings

Process Commander uses HTTP 1.1 and marks pages as expired as appropriate. To set this property in Internet Explorer version 6.0 SP1, navigate to Tools > Internet Options > General > Temporary Internet Files > Settings, and select Automatic. In Internet Explorer version 7, navigate to Tools > Internet Options > General and click the Settings button under Browsing history. Select Automatically in the Temporary Internet Files options.

The system responds best if your MSIE cache is enabled, because the cache can store images and other static files locally. However, caching is not required.

Downloaded Program Files

Process Commander uses a few ActiveX controls on the workstation. Each automatically downloads on demand (only as needed) if permitted by your Windows network account and Internet Explorer settings.

If your Windows account has Power User or Administrator privileges, you can download these controls. If not, another user with appropriate privileges can download them for you, by signing on and using Process Commander briefly. (You do not need Power User or Administrator privileges to run the ActiveX controls.)

Select Tools > Internet Options > Security > Local Zone to confirm that you can download signed ActiveX controls. You can set security for the Local Zone to

Low, or can choose Custom and turn on the download settings (Figure B-1 and Figure B-2):



Figure B-1. Download Enabled

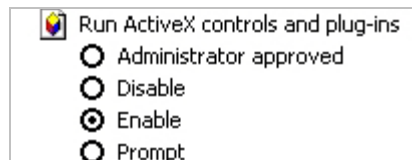
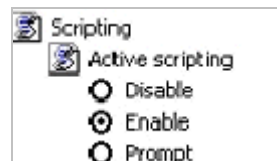


Figure B-2. ActiveX Downloads Enabled

Other Security Settings

Typically, the Process Commander server operates on a local area network (LAN) and appears in the Local Zone of Internet Explorer. You can adjust security settings for the Local Zone without affecting the security settings you want to apply for the Internet.



- Cookies — Process Commander uses cookies. Internet Explorer settings must permit cookies.
- Pop-up windows — Certain portal operations use pop-up windows. Pop-up blockers (such as the Google toolbar) may interfere with correct operation of these windows.
- Scripting — Process Commander uses JavaScript. Applications based on Process Commander may use VBScript or JScript in addition to JavaScript. Users must have the ability to execute scripts in the Local Zone. This is available under the **Low** setting for the Local Zone or as a custom setting.



- Windows XP SP2 restrictions on file downloads — If your workstation operating system is Windows XP SP2 and your Process Commander server is identified (in the URL on the Internet Explorer Address line) by an IP address or by a domain-qualified name (such as *myserver.mydomain.sub*), an Internet Explorer setting may restrict your ability to use file attachments. Open the Custom Levels dialog by selecting Tools > Internet Options panel for the Local Internet zone. Clear the **Automatic Prompting for File Download** setting.

Performance Tips and Keyboard Shortcuts

Developers and users are most productive if they remember these tips:

- Click the logo on the upper left of the portal to return to your portal home view.
- Don't use the Internet Explorer Back button or the Back keyboard shortcut. Don't use the Internet Explorer History capabilities to return to an earlier page. The older pages may contain stale information, and the Back and History features may interfere with session synchronization.
- Click the Refresh button  on the Process Commander toolbar, not the Internet Explorer refresh button  or the **F5** key, to refresh the current display.
- Press **CTRL+F** to search for text on a page.
- Press **CTRL+P** to print the current page.

Visio Settings

Process Commander uses an ActiveX to control support flows in Microsoft Visio. Follow these steps to set up Microsoft Visio 2002 or 2003 to work with Process Commander flows:

1. Add Pegasystems as a trusted source of Visio XP macros.

You may receive the following warning when first opening a flow (Figure B-3).



Figure B-3. Visio Macro Security Warning

2. Select **Always trust macros from this source**. This adds Pegasystems Inc. to the Trusted Sources list. Pegasystems Inc. has digitally signed the Visio XP macros with a Code Signing (level 3) Digital ID Certificate from VeriSign.
3. The Enable Macros button becomes available. Click the Enable Macros button to start a successful Visio flow editing session. This dialog will not appear again.

4. Alternatively, set macro security to Medium or Low

The Visio Flow Editors in Process Commander use VBA (Visual Basic for Applications) macros. Visio offers four levels of macro security that you control through the dialog setting. If you only edit flow rules created with Visio and have accepted Pegasystems Inc as a trusted source, you can leave the setting at **High**. Otherwise, use Medium or Low.

- Start Visio. Select the *Tools> Macros> Security* menu item in Visio to access the Security dialog (Figure B-4).
- Set the Visio Macro security level to **Medium** (for prompting) or **Low** (for no prompting). Click OK

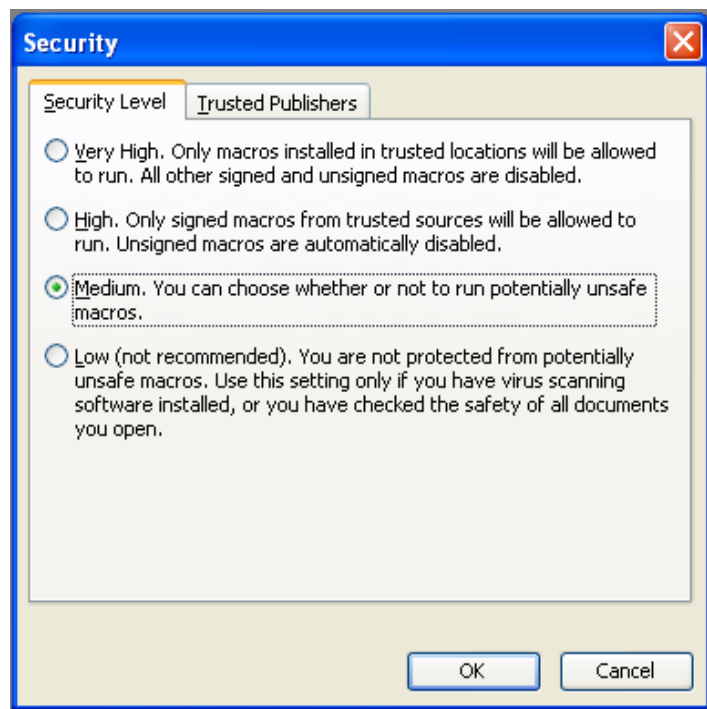


Figure B-4. Visio Macro Security Levels

For more information on Visio security issues, search for the topic How to Set Up Visio in the Process Commander Application Developer help system.