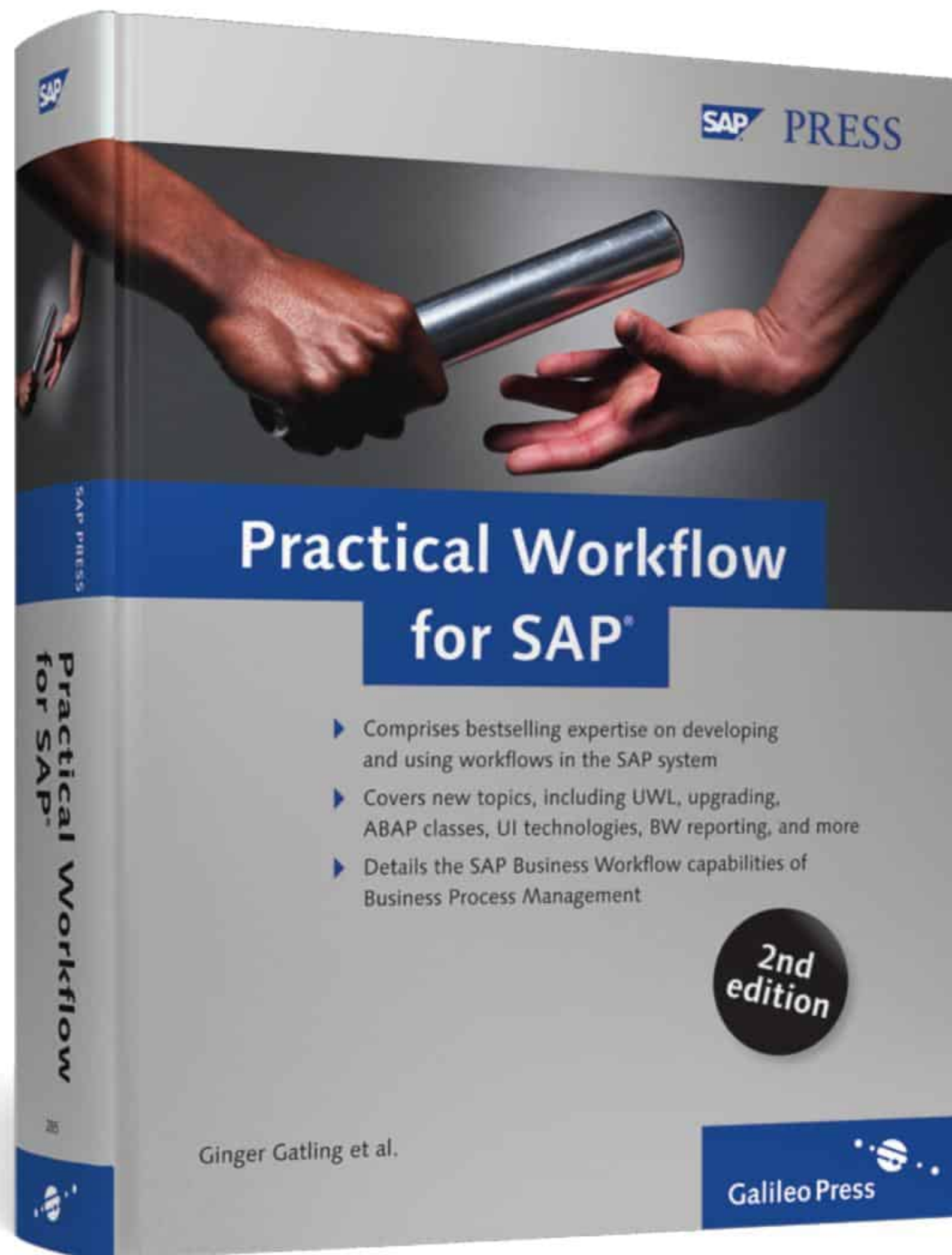


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Practical Workflow for SAP®



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Whether you are building a new workflow from scratch or using an SAP supplied workflow, it is important that you understand the Workflow Builder tool. This chapter gets you started by enabling you to create your first workflow, enhance your workflow, understand data flow, understand types of steps you can use when building a workflow, and get a workflow to production.

8 Creating a Workflow

The central tool for creating, displaying, and processing a workflow is the Workflow Builder. The Workflow Builder is accessed through Transaction SWDD. Alternatively, you can use the menu path TOOLS • BUSINESS WORKFLOW • DEVELOPMENT • DEFINITION TOOLS • WORKFLOW BUILDER • WORKFLOW BUILDER. Within the Workflow Builder, you can create all components of a workflow, including the process flow, the details for each step, and the data flow between steps.

This chapter describes the main features of the Workflow Builder, giving a good foundation to start your own development. To introduce the Workflow Builder, we will explain how to create a simple workflow. We will build upon the simple workflow, enhancing it to show additional features. However, this is not an exhaustive description of all workflow features. When you need more information, the SAP Help Portal (<http://help.sap.com>) describes all of the Workflow Builder features in detail.

Most workflows are started by an *event* (e.g., when a sales order is created, when a quote is entered, when an email arrives, when an error occurs, when a document is printed) that happens in a business application. You define which data from this event needs to be passed to the workflow via *binding*. Events are described in Chapter 13, Using Events and Other Business Interfaces, and Chapter 14, Custom Programs. You can also start any workflow directly, for example, through a transaction code, user interface, or a concept called generic object services (refer to Chapter 13 as well). Because events are a major topic on their own and to keep the focus on the basics of the Workflow Builder, this chapter starts the workflow directly using test tools.

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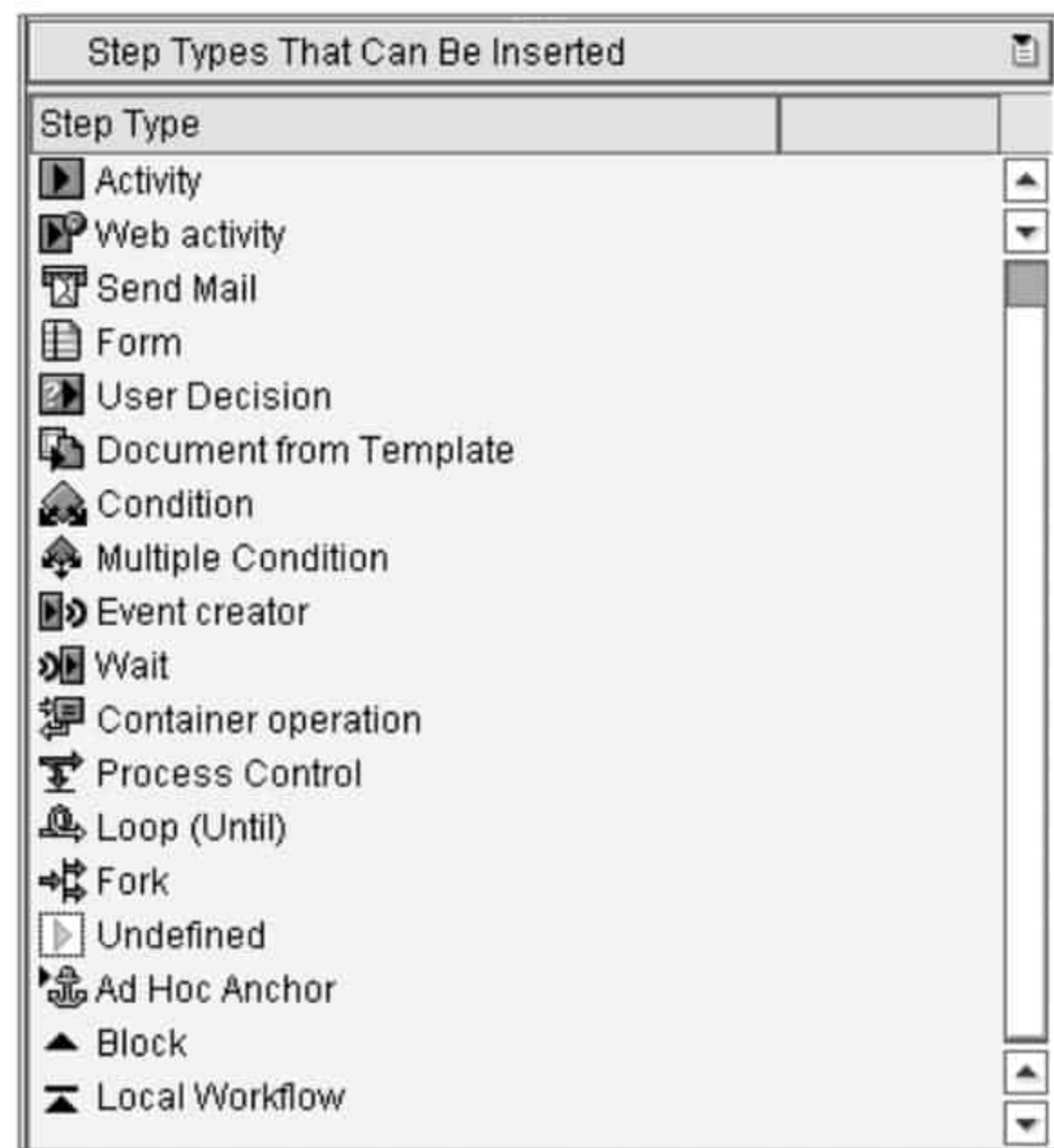


Figure 8.2 More Step Options

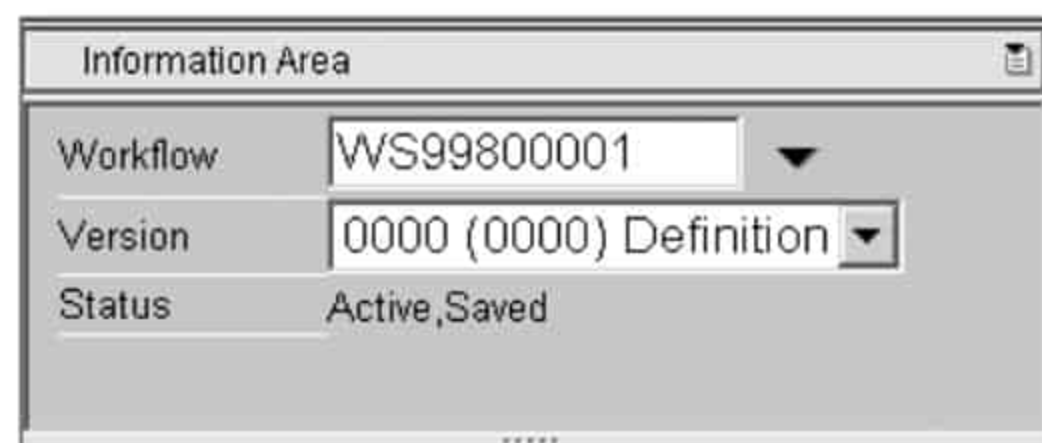


Figure 8.3 Information Area

► **Navigation**

The navigation frame contains a list of all of the steps in the workflow. You can jump directly to the relevant step definition from the list. As with all of the frames in the Workflow Builder, you can resize this frame to display the amount of information that you require. The step number corresponds to the number in the workflow technical log (logs are discussed in Chapter 6, Workflow Administration).

► **Messages**

This area contains messages, including general messages and results from where-used lists, syntax checks, and searches.

► **Optional information to display**

In addition to the frames you see in Figure 8.1, you can optionally switch the STEP TYPES to one of the items in Figure 8.4.

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5. Execute the user decision. Notice the text "Do you want to display the business partner?" and the choices available. Choose YES or NO.
6. Now return to the Workflow Builder (by using the BACK arrow in the TEST screen). Toggle the STEPS THAT CAN BE INSERTED to the WORKFLOWS OF THIS DEFINITION frame.
7. You can double-click on the new entry to see the matching workflow log. Notice the status of the workflow is COMPLETED, and the result of the decision step is displayed in the Result column.

Test Two

In the previous test, you executed the workflow immediately, without navigating to the inbox. In this example, you will test the workflow again but also use the inbox:

1. Test the workflow again, selecting TEST and then EXECUTE as you did in the previous test. The workflow executes immediately.
2. When the decision appears, notice you have three options: YES, NO, and CANCEL AND KEEP WORK ITEM IN INBOX.
3. Select the option CANCEL AND KEEP WORK ITEM IN INBOX.
4. Select BUSINESS WORKPLACE.
5. Select INBOX • WORKFLOW. You will see your work item. Double-click the work item, and select either YES or NO.
6. Use the BACK arrow to return from the inbox to the workflow definition.
7. Notice both times when you execute the workflow, there is only one step, the step to make a decision. Later in this chapter, you will add the step to display a business partner if the choice is YES and to send an email if the choice is NO.

If you tried this example in a test system, you may be surprised that when testing the workflow, you are presented with the decision straight away without having to look in your workflow inbox first. This is because the step is configured as part of the synchronous dialog chain by default (described in Chapter 4, Work Item Delivery). Because the person starting the workflow (you) is identical to the person assigned to perform the first step in the workflow (you), you are presented with the task straight away. To change this behavior, follow these steps:

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- the activity step to the workflow initiator expression using the dropdown help.
- When you return to your workflow, you should see your new task as part of the YES branch from the user decision task. Now when the workflow executes, you can display a business partner.
 - For testing purposes, you need to provide this business partner number when the workflow starts. To do this, toggle the STEPS THAT CAN BE INSERTED frame to WORKFLOW CONTAINER, and double-click on the workflow container element BUS1006.
 - Select the PROPERTIES tab, and select the IMPORT parameter setting. This means the business partner can be imported when the workflow starts. Normally, this is set so that the application can pass the business partner to the workflow container. If the flag is not set, then the business partner is solely contained in the context of the workflow.
 - Test your workflow. To do so, you must enter an object instance of your business partner object type. Select BUS1006. At the bottom of the screen, you see the OBJECT TYPE and a KEY. Select the dropdown in the KEY field, and enter a valid business partner number. (If you do not have a business partner and are on a sandbox system, you can use Transaction BP to create a business partner. When creating a business partner, it is easiest if you create a person and just provide first name and last name.)
 - After you enter a valid business partner number, select SAVE in the TEST DATA area of the screen. This enables you to select LOAD in subsequent tests to use the same business partner number, instead of entering the business partner number for each test.
 - After you start your workflow, you should execute two tests. In the first test, select YES to the user decision. When you select YES, a business partner should display. In the other test, select NO to the user decision, and the workflow should end.
 - Remember, you can see each execution in the WORKFLOWS OF THIS DEFINITION (OUTCOME) frame.

Hint

When testing the workflow, the first step may or may not start automatically depending on the setting of the ADVANCE WITH DIALOG flag in the DETAILS tab of the task.

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object has methods that define activities that can be executed on that object or its data (e.g., "create business partner" or "update business partner"). Within the method, you can call SAP functions, your own functions, or other external applications.

- ▶ Events are another important component of an object. The events describe the status changes that an object can undergo (e.g., "business partner deleted" or "business partner changed"). A workflow can be started, canceled, or resumed (wait step) when an event of this kind is raised. Just like attributes and methods, events need to be defined as part of a business object before they can be used in a workflow. Events are discussed in Chapter 13, Using Events and Other Business Interfaces.

If you want to use workflow to implement a business process, this is a rough picture of what is involved in accessing the relevant data and functions:

1. Identify all business entities involved in your business process. You sort out which business functions and events you want to map in your scenario and which data you want to access.
2. Check whether the relevant business object types with their methods, attributes, and events are defined in the BOR or as an ABAP class. The grouping of object types in the application component hierarchy, and the option of searching generically for parts of a name, help when looking for existing object types:
 - ▶ If you find an object type whose definition meets your requirements, you can use it without making any modifications.
 - ▶ If you find an object type whose definition does not quite meet your requirements, you can extend its definition.
 - ▶ If you do not find a suitable object type, you can define your own object type.
3. Use the methods, attributes, and events of the object type in the relevant parts of your workflow.

Further information on how to create your own object types or extend existing object types can be found in Chapter 10, Business Objects, and Chapter 11, ABAP Classes.

8 | Creating a Workflow

5. Ensure you are in change mode for the task (using the DISPLAY – CHANGE icon to toggle between change and display mode).
6. Select the DESCRIPTION tab. For the TEXT TYPE, select COMPLETION TEXT. Select the CHANGE TEXT ICON so you can update the text.
7. After you have added a COMPLETION TEXT, save your task, and use the BACK arrow to return to the workflow.
8. Update the MESSAGE RECIPIENT FOR COMPLETION to be the WORKFLOW INITIATOR.
9. TEST the workflow again. Be sure to follow the path to display the business partner. After the workflow completes, go to the Business Workplace. You will see the notification text in the DOCUMENTS folder of the inbox.

8.3 Basics of Containers and Bindings

Containers and bindings are a bit tricky when first learning workflow, but as you understand the stability, flexibility, and scalability they provide, you will soon come to appreciate the powerful use of binding between containers. Here are a few of the advantages:

- ▶ You can reuse elements in your workflow.
- ▶ You can make major changes to activities within the process without jeopardizing the process as a whole (or vice versa).
- ▶ Even when the applications that trigger the workflows are changed from release to release, your workflow is sheltered from these changes.
- ▶ You can use parallel activities within the workflow without worrying about data reconciliation problems or interference between the activities.

Containers and bindings are explained in more detail in Chapter 9, Advanced Workflow Design Techniques. This section provides an introduction to how they are used by first focusing on the task container and then focusing on the workflow container.

All of the data needed to execute the method or to display in the task text must be available in the task container. Container elements for the task container are generated automatically when you enter a method in the task. The container elements needed for the execution are recognized by the workflow system, and the workflow system prompts you to automatically insert these container elements in

8 | Creating a Workflow

1. Create container elements by selecting the WORKFLOW CONTAINER frame and double-clicking on the <DOUBLE-CLICK TO CREATE> line in the workflow container tray.
2. Enter the technical name of the container element in the ELEMENT field.
3. Give each container element a technical name (minimum of two characters) that can be used to identify it uniquely. The technical name is not case sensitive and must begin with a letter, but it can be followed by letters, underscores, or digits. Because the technical name is not translated, it is conventional to use English words in multilanguage environments.
4. Under TEXTS, maintain the NAME and the DESCRIPTION (OPTIONAL). Both of these can be translated in multilanguage environments.
5. According to the data type reference of the container element, make the following entries on the DATA TYPE tab: First check whether your container element is modeled on one of the predefined types. Choose the SELECTION OF PRE-DEFINED TYPES icon (🔍), and double-click to choose the predefined type. The system carries out the necessary entries for the data type. If you want to create a container element that is not predefined, make the following entries, depending on the data type:
 - ▶ **Object type**
Choose OBJECT TYPE, select an object type category, and enter the name of the object type. Examples include a specific BOR object (such as BUS1006) or a specific ABAP class.
 - ▶ **ABAP Dictionary Reference**
Choose STRUCTURE and FIELD. In this case, you enter a table/structure and field that the container data should be based on. This reserves space in the container equivalent to the field you enter. It works as a "like" statement.
 - ▶ **ABAP Dictionary Data Type**
Choose ABAP DICTIONARY REFERENCE, and enter the table or structure in the field TYPE NAME. Use this to provide a data type to describe the field in the workflow container.

Tip

The specification of an object type is not mandatory. If no object type is specified, the container element can be assigned a reference to any object type at runtime. However, binding restrictions may limit its use later in the workflow.

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