



**MERCURY
QUALITY CENTER™**

Mercury QuickTest Professional™
New Features Guide

MERCURY™

Mercury QuickTest Professional

New Features Guide

Version 8.2

MERCURY™

Mercury QuickTest Professional New Features Guide, Version 8.2

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Welcome to QuickTest Professional 8.2

Welcome to QuickTest Professional, the Mercury automated keyword-driven testing solution. QuickTest provides everything you need to quickly create, run, and debug tests and components.

Using This Guide

This guide describes how to use QuickTest to create and manage business components using the Business Component Keyword View, and how to create scripted components. It also describes how to create and manage the application areas on which components are based, and how to define the various resource files used by components. In addition, it explains how to use the Function Definition Generator to create user-defined functions and register them to test objects in your test or component.

Note: This guide specifically describes the features that were introduced or enhanced in QuickTest Professional 8.2. For general information about using QuickTest, refer to the *QuickTest Professional User's Guide* 8.0 or 8.0.1.

This guide contains the following chapters:

Chapter 1 Introducing QuickTest Professional 8.2

Provides an overview of the new features provided in QuickTest 8.2, an explanation of the various user roles, and a list of the QuickTest terms used in this guide.

Chapter 2 Getting Started with Business Components in QuickTest Professional

Describes how to connect to a Quality Center project with Business Process Testing support and introduces the Business Component Keyword View.

Chapter 3 Working with Application Areas

Describes how to create and work with an application area, and how to manage the shared object repository.

Chapter 4 Working with Business Components

Describes how to create and manage business components.

Chapter 5 Working with Scripted Components

Describes how to create scripted components.

Chapter 6 Working with the Business Component Keyword View

Describes how to add steps to a business component and define their content using the Business Component Keyword View. It also describes how to add comments to your business component.

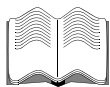
Chapter 7 Defining Business Component and Application Area Settings

Describes how to define settings and resources for your business components and application areas.

Chapter 8 Working with User-Defined Functions

Describes how to define user-defined functions to add additional functionality to your tests and components.

QuickTest Documentation Set



In addition to this New Features Guide, QuickTest Professional comes with the following printed documentation:

QuickTest Professional Installation Guide explains how to install QuickTest Professional.

QuickTest Professional Tutorial teaches you basic QuickTest skills and shows you how to design tests for your applications.

QuickTest Professional User's Guide provides step-by-step instructions for using QuickTest Professional to test your applications.

QuickTest Professional Shortcut Key Reference Card provides a list of commands that you can execute using shortcut keys.

Online Resources



QuickTest Professional includes the following online resources:

Readme (available from the QuickTest Professional Start menu program folder) provides the latest news and information about QuickTest Professional.

What's New in QuickTest Professional (available from **Help > What's New in QuickTest**) describes the newest features, enhancements, and supported environments in this latest version of QuickTest Professional.

Printer-Friendly Documentation displays the complete documentation set in Adobe portable document format (PDF). Online books can be read and printed using Adobe Reader, which can be downloaded from the Adobe Web site (<http://www.adobe.com>).

QuickTest Professional Tutorial (available from the QuickTest Professional Welcome window, the **Help** menu, and the QuickTest Professional Start menu program folder) teaches you basic QuickTest skills and shows you how to start designing tests for your applications.

QuickTest Professional Context-Sensitive Help (available from specific dialog boxes and windows) describes QuickTest dialog boxes and windows.

QuickTest Professional New Features Guide (available from **Help > QuickTest Professional Help**) provides step-by-step instructions for working with business components and application areas in QuickTest Professional. It also describes how to use the Function Definition Generator to create user-defined functions and register them to test objects in your test or component.

QuickTest Professional User's Guide (available from **Help > QuickTest Professional Help**) provides step-by-step instructions for using QuickTest Professional to test your applications.

QuickTest Professional Object Model Reference (available from **Help > QuickTest Professional Help**) describes QuickTest Professional test objects, lists the methods and properties associated with each object, and provides syntax information and examples for the methods.

QuickTest Professional Automation Object Model Reference (available from the QuickTest Professional Start menu program folder and from **Help > QuickTest Automation Object Model Reference**) provides syntax, descriptive information, and examples for the automation objects, methods, and properties. It also contains a detailed overview to help you get started writing QuickTest automation scripts. The automation object model assists you in automating test or component management, by providing objects, methods and properties that enable you to control virtually every QuickTest feature and capability.

VBScript Reference (available from **Help > QuickTest Professional Help**) contains Microsoft VBScript documentation, including VBScript, Script Runtime, and Windows Script Host.

Mercury Tours sample Web site (available from the QuickTest Professional Start menu program folder and also available from the QuickTest Professional Record and Run Settings dialog box) and the **Mercury Tours** Windows sample flight application (available from the QuickTest Professional Start menu program folder) are the basis for many examples in this book. The URL for this Web site is <http://newtours.mercuryinteractive.com>.

Customer Support Online (available from **Help > Customer Support Online**) uses your default Web browser to open the Mercury Customer Support Web site. This site enables you to browse the knowledge base and add your own articles, post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. The URL for this Web site is <http://support.mercury.com>.

Send Feedback (available from **Help > Send Feedback**) enables you to send online feedback about QuickTest Professional to the product team.

Mercury Interactive on the Web (available from **Help > Mercury Interactive on the Web**) uses your default Web browser to open the Mercury home page. This site provides you with the most up-to-date information on Mercury and its products. This includes new software releases, seminars and trade shows, customer support, educational services, and more. The URL for this Web site is <http://www.mercury.com>.

Documentation Updates

Mercury Interactive is continuously updating its product documentation with new information. You can download the latest version of this document from the Customer Support Web site (<http://support.mercury.com>).

To download updated documentation:

- 1** In the Customer Support Web site, click the **Documentation** link.
- 2** Under **Select Product Name**, select **QuickTest Professional**.

Note that if **QuickTest Professional** does not appear in the list, you must add it to your customer profile. Click **My Account** to update your profile.

- 3** Click **Retrieve**. The Documentation page opens and lists the documentation available for the current release and for previous releases. If a document was recently updated, **Updated** appears next to the document name.
- 4** Click a document link to download the documentation.

Typographical Conventions

This book uses the following typographical conventions:

1, 2, 3	Bold numbers indicate steps in a procedure.
>	The greater-than sign separates menu levels (for example, File > Open).
Stone Sans	The Stone Sans font indicates names of interface elements (for example, the Run button) and other items that require emphasis.
Bold	Bold text indicates method or function names.
<i>Italics</i>	<i>Italic</i> text indicates method or function arguments and book titles. It is also used when introducing a new term.
<>	Angle brackets enclose a part of a file path or URL address that may vary from user to user (for example, < MyProduct installation path >\bin).
Arial	The Arial font is used for examples and text that is to be typed literally.
Arial bold	The Arial bold font is used in syntax descriptions for text that should be typed literally.
SMALL CAPS	The SMALL CAPS font indicates keyboard keys.
...	In a line of syntax, an ellipsis indicates that more items of the same format may be included. In a programming example, an ellipsis is used to indicate lines of a program that were intentionally omitted.
[]	Square brackets enclose optional arguments.
	A vertical bar indicates that one of the options separated by the bar should be selected.

1

Introducing QuickTest Professional 8.2

Welcome to QuickTest Professional, the Mercury advanced keyword-driven testing solution.

This guide specifically describes the features that were introduced or enhanced in QuickTest Professional 8.2. For general information about using QuickTest, refer to the *QuickTest Professional User's Guide* 8.0 or 8.0.1.

This chapter describes:

- ▶ About Introducing QuickTest Professional 8.2
- ▶ What's New in QuickTest Professional 8.2
- ▶ Understanding QuickTest Professional Terminology
- ▶ Introducing Business Process Testing

About Introducing QuickTest Professional 8.2

Welcome to QuickTest Professional, the Mercury automated, keyword-driven, testing solution. By mirroring end-user behavior, QuickTest Professional creates interactive customizable tests or components that simplify and shorten the testing cycle.

QuickTest Professional enables you to test standard Windows applications, Web objects, ActiveX controls, and Visual Basic applications. You can also acquire additional QuickTest add-ins for a number of special environments, such as Java, Oracle, SAP Solutions, .NET Windows and Web Forms, Siebel, PeopleSoft, and terminal emulator applications. For more information, refer to the *QuickTest Professional Installation Guide*.

Using the new QuickTest Professional Function Definition Generator, you can easily create user-defined functions and add them to your test or component. You can also use the Function Definition Generator to register user-defined functions to test objects.

When QuickTest Professional is connected to a Quality Center project with Business Process Testing support, you can define and manage the resources that are needed to create and work with business components. You can also create and debug business components using the intuitive, keyword-driven Business Component Keyword View (although this is generally done by Subject Matter Experts using Quality Center).

Note: Mercury Business Process Testing is fully integrated with QuickTest and Quality Center, and is enabled if your license includes Business Process Testing support.

What's New in QuickTest Professional 8.2

This section describes what's new in QuickTest Professional 8.2.

- **New Keyword View**—Provides component-specific options that are specially designed to facilitate the creation of business components.
- **Updated Keyword View steps**—Displays the individual steps that comprise a component, in the order in which they are implemented and at the same hierarchical level.
- **New comment field row**—Enables you to add manual steps to business components, even before your application is ready to be tested, as well as enter pertinent information about component steps.
- **New Documentation Only view**—Enables you to instruct QuickTest Professional to display only the Documentation column of the Keyword View, including any comments. This is especially useful for viewing and printing components for use in manual testing.
- **Multiple application areas**—QuickTest enables you to create and use multiple application areas, which can be used for various parts of your application. Application areas (formerly known as business component templates) specify the settings and resources to be used by one or more business components. Each business component can be associated with a specific application area, or share an application area with other business components.
- **New Local parameter type**—Enables you to create a parameter that is accessible only to the current business component. This is especially useful if you want to use an output parameter for one step as an input parameter for a later step in the same component.
- **New Function Definition Generator**—Enables you to quickly document and register new user-defined functions. Registered functions are now added automatically to the Keyword View. You can easily add a description and auto-documentation line using the new Function Definition Generator. Adding user-defined functions provides access to a variety of additional operations for a component, for example, open an application at the start of a business component or check the value of a specific property.

Understanding QuickTest Professional Terminology

The following terminology, specific to QuickTest Professional, is used in this guide:

Keyword View—A Keyword View enables tests and components to be created, viewed, and debugged using a keyword-driven, modular, table format. QuickTest automatically modifies the columns and options in the Keyword View to suit the specific needs of the document type (test or component) on which you are currently working.

Steps—A step represents an operation to be performed. QuickTest provides keywords that help you define steps quickly and easily.

The following terminology, specific to business components, is used in this guide:

Business Component (or Component)—An easily-maintained, reusable unit comprising one or more steps that perform a specific task. Business components may require input values from an external source or from other components, and they can return output values to other components.

Business Process Test—A scenario comprising a serial flow of business components, designed to test a specific business process of an application.

Component Input Parameters—Variable values that a business component can receive and use as the values for specific, parameterized steps in the component. A component parameter may be accessed by any component in the Quality Center project.

Component Output Parameters—Values that a business component can return. These values can be viewed in the business process test results and can also be used as input for a component that is used later in the test. A component parameter may be accessed by any component in the Quality Center project.

Local Input Parameters—Variable values that an operation or a business component step can receive and use as the values for specific, parameterized steps in the component. A local parameter can only be accessed by the component in which it defined.

Local Output Parameters—Values that an operation or a business component step can return. These values can be viewed in the business process test results and can also be used as input for a later step in the component. A local parameter can only be accessed by the component in which it defined.

QuickTest Engineer—An expert in QuickTest Professional automated testing. The QuickTest Engineer defines and manages the resources that are needed to create and work with business components. The QuickTest Engineer creates application areas that specify all of the resources and settings needed to enable Subject Matter Experts to create business components and business process tests in Quality Center. The QuickTest Engineer can create and modify function library files (such as VBScript library files), and populate the shared object repository with test objects that represent the different objects in the application being tested. The QuickTest Engineer can also create and debug business components in QuickTest.

Roles—The various types of users who are involved in Business Process Testing.

Subject Matter Expert—A person who has specific knowledge of the application logic, a high-level understanding of the entire system, and a detailed understanding of the individual elements and tasks that are fundamental to the application being tested. The Subject Matter Expert uses Quality Center to create business components and business process tests.

Introducing Business Process Testing

One of the major enhancements in QuickTest Professional 8.2 focuses on Business Process Testing. Business Process Testing utilizes a new keyword-driven methodology for testing, based on the creation and implementation of business components in business process tests. Each reusable modular business component tests a specific part (task) of an application. Using keyword-driven testing, Subject Matter Experts, who have a keen understanding of the individual parts of the application under test, use the Business Components and Test Plan modules in Quality Center to create and combine these components. Subject Matter Experts can design quality assurance business process tests early in the development cycle and in a script-free environment. They can then run and analyze these tests and test sets in Quality Center. For more information, refer to the *Business Process Testing User's Guide*.

Each business component is based on an application area that provides it with settings and links to specific resource files, such as function library files, shared object repositories that contain the test objects used by the application, associated add-ins, and recovery scenario files.

Using QuickTest Professional, you (the QuickTest Engineer who is an expert in QuickTest Professional automated testing) create application areas by defining the resources required by components. For example, you can create and modify function library files that contain user-defined functions (operations). You can also populate each shared object repository with test objects for the specific part of the application being tested.

You can create multiple application areas—each focusing on a particular part of the application under test. For example, for a flight reservation application, you could create one application area for the login window, another application area for the flight search module, another for the flight reservation module, and still another for the billing module.

After you create the required files, you store these resource files in the Quality Center project, and reference them from the application area. When a Subject Matter Expert working in Quality Center creates a new business component, a local copy of the resource links and settings defined in the application area is saved with the component, enabling it complete access to these resources during the component design process and during run-time.

This guide describes the activities that the QuickTest Engineer performs when working with application areas and components.

2

Getting Started with Business Components in QuickTest Professional

When your QuickTest Professional licence includes Business Process Testing support, you can connect QuickTest to your Quality Center project. This enables you to use the Business Component Keyword View to set up the resources and settings for business components, and to create, view, and debug business components in an intuitive, keyword-driven, modular table format.

Note: Before you can debug components in QuickTest, you must enable integration between QuickTest and your Quality Center project by selecting the **Allow other Mercury products to run tests and components** check box (from QuickTest, choose **Tools > Options > Run**).

This chapter describes:

- ▶ About Getting Started with Business Components in QuickTest Professional
- ▶ Connecting to Your Quality Center Project
- ▶ The Business Component Keyword View at a Glance
- ▶ Understanding the Business Component Keyword View Columns
- ▶ Setting Keyword View Display Options
- ▶ Using QuickTest Commands for Business Components

About Getting Started with Business Components in QuickTest Professional

The first time you connect QuickTest to a Quality Center server and project, QuickTest sets up default Business Process Testing folders and files in your project. This enables you (the QuickTest Engineer) to prepare the assets needed for business components, as well as create, work with, and debug business components using the intuitive, keyword-driven Keyword View.

You prepare the assets for business components by creating *application areas*. An application area comprises all of the required settings and resources to enable the Subject Matter Expert to create a component. This includes all of the test objects (stored in the shared object repository), all resource library files, recovery scenarios, associated add-ins, and other information. You provide a self-explanatory name and description for each application area, enabling the Subject Matter Expert to select the application area that is best-suited for each component.

Note: In earlier QuickTest Professional versions, application areas were known as business component templates.

You can create as many application areas as required, depending on the complexity and stage of development of the application you are testing. For a simple application or for one window or Web page, for example, one application area may be all that is needed. For complex or modular applications with multiple windows or Web pages, it may be more appropriate to create an application area for each module, window, dialog box, or Web page.

Subject Matter Experts can then use the keyword-driven Steps tab provided in Quality Center Business Components module to create a business component, without the need for any programming knowledge. The Subject Matter Expert associates the component with an application area, and then begins to add individual steps to the component. For each step, the Subject Matter Expert selects an *item*, which can be either a test object or an operation (from a user-defined function library file). Based on the selected item, the Subject Matter Expert adds additional content to the step by selecting the operation to perform on the object, and defining any necessary values for the selected operation. Each step appears as one row in the Steps tab. Steps are documented automatically, enabling the user to view a description of the component in easily understandable sentences.

The Keyword View even enables Subject Matter Experts to add manual steps before the application is ready to be tested. This is done by adding *comments*, which are free-text entries. Each comment serves as a manual step in the component. Subject Matter Experts can mix and match entries by including both component steps and comments, thereby ensuring that every aspect of the application to be tested is covered, even before it is ready to be tested.

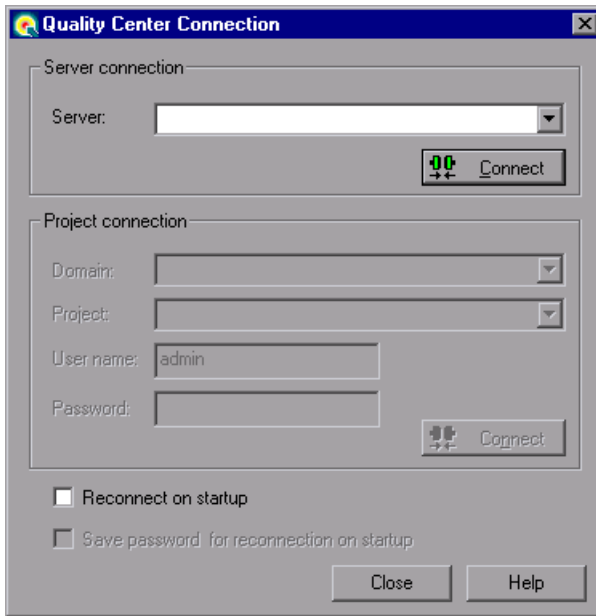
Connecting to Your Quality Center Project

To work with business components, you must first connect QuickTest to a Quality Center server. This server handles the connections between QuickTest and the Quality Center project. Then you choose the Quality Center project that you want QuickTest to access. The project stores component and run session information for the Web site or application you are testing. Note that Quality Center projects are password protected, so you must provide a user name and a password.

To connect QuickTest to your Quality Center project:



- 1 Choose **Tools > Quality Center Connection** or click the **Quality Center Connection** toolbar button. The Quality Center Connection dialog box opens.



- 2 In the **Server** box, type the URL address of the Web server where Quality Center is installed.

Note: You can choose a Web server accessible via a Local Area Network (LAN) or a Wide Area Network (WAN).

- 3** In the **Server connection** area, click **Connect**. After the connection to the server is established, the server's name is displayed in read-only format in the **Server** box.
- 4** In the **Domain** box, select the domain that contains the Quality Center project.
- 5** In the **Project** box, select the project with which you want to work.
- 6** In the **User name** box, type a user name for opening the selected project.
- 7** In the **Password** box, type the password for the selected project.
- 8** In the **Project connection** area, click **Connect** to connect QuickTest to the selected project.

After the connection to the selected project is established, the fields in the **Project connection** area are displayed in read-only format.

- 9** To automatically reconnect to the Quality Center server and the selected project the next time you open QuickTest, select the **Reconnect on startup** check box.

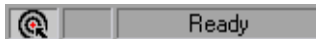
If you do not select the **Reconnect on startup** check box, you will be prompted to connect to a Quality Center project the next time you try to create or open a business component or application area.

- 10** If the **Reconnect on startup** check box is selected, then the **Save password for reconnection on startup** check box is enabled. To save your password for reconnection on startup, select the **Save password for reconnection on startup** check box.

If you do not save your password, you will be prompted to enter it when QuickTest connects to Quality Center on startup.

Note: The first time you connect to a Quality Center server, QuickTest sets up default Business Process Testing folders and files in your Quality Center project.

- 11 Click **Close** to close the Quality Center Connection dialog box. The Quality Center icon is displayed on the status bar to indicate that QuickTest is currently connected to a Quality Center project.



Tip: To view the current Quality Center connection, point to the **Quality Center** icon on the status bar. A tooltip displays the Quality Center server name and project to which QuickTest is connected. To reopen the Quality Center Connection dialog box, double-click the **Quality Center** icon on the status bar.

Disconnecting QuickTest from Quality Center

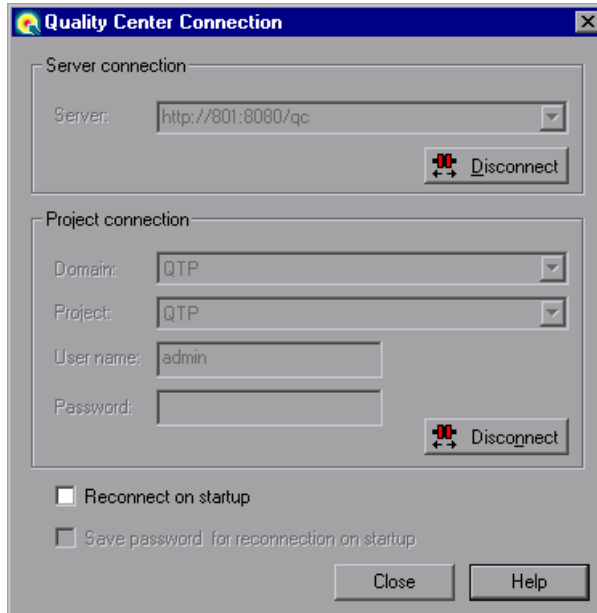
You can disconnect from a Quality Center project or from a Quality Center Web server. Note that if you disconnect QuickTest from a Web server without first disconnecting from a project, QuickTest's connection to that project database is automatically disconnected.

Note: If a business component, application area, or shared file (such as a shared object repository) is open when you disconnect from Quality Center, then QuickTest closes it.

To disconnect QuickTest from Quality Center:



- 1 Choose **Tools > Quality Center Connection** or click the **Quality Center Connection** toolbar button. You can also double-click the Quality Center icon on the status bar. The Quality Center Connection dialog box opens.



- 2 To disconnect QuickTest from the selected project, in the **Project connection** area, click **Disconnect**. You can now connect to a different project on the Web server, if needed.
- 3 To disconnect QuickTest from the selected Web server, in the **Server connection** area, click **Disconnect**.
- 4 Click **Close** to close the Quality Center Connection dialog box.

The Business Component Keyword View at a Glance

The Business Component Keyword View is comprised of a table-like view, in which each step is a separate row in the table, and each column represents different parts of the steps. You can modify the columns displayed to suit your requirements. For more information, see “Setting Keyword View Display Options” on page 19.

Keyword View columns

Item	Operation	Value	Output	Documentation
Mercury Inter...	Navigate	"http://newtours.mercuryinteractive.com"		Navigate to "http://newtours.mercuryinteractive.com" in the browser.
userName	Set	"Mercury"		Enter "Mercury" in the "userName" edit box.
password	SetSecure	"41442073fc37b0fb9831d26e01b7aab8ce...		Enter the encrypted string "41442073fc37b0fb9831d26e01b7aab8ce..." in the "password" edit box.
Sign-In	Click	9.8		Click the "Sign-In" image.
fromPort	Select	"New York"		Select the "New York" item in the "fromPort" list.
fromMonth	Select	"Dec"		Select the "Dec" item in the "fromMonth" list.
fromDay	Select	"29"		Select the "29" item in the "fromDay" list.
toPort	Select	"San Francisco"		Select the "San Francisco" item in the "toPort" list.
toMonth	Select	"Dec"		Select the "Dec" item in the "toMonth" list.
toDay	Select	"30"		Select the "30" item in the "toDay" list.
servClass	Select	"Business"		Select radio button "Business" in the "servClass" radio button group.
findFlights	Click	93,10		Click the "findFlights" image.
...

Step —

You can add steps to the component manually or by recording the steps you perform on your application. During a recording session, each step is recorded as a row in the Keyword View. For example, the Keyword View could contain the following rows:

Item	Operation	Value	Output	Documentation
userName	Set	"Mercury"		Enter "Mercury" in the "userName" edit box.
password	SetSecure	"4129e9544fe92be22d38ebcb7cf5"		Enter the encrypted string "4129e9544fe92be22d38ebcb7cf5" in the "password" edit box.
Sign-In	Click	35,7		Click the "Sign-In" image.

These rows show the steps that are performed on the **Welcome: Mercury Tours** page of the Mercury Tours sample web site:

- **Mercury** is entered in the **userName** edit box.
- The encrypted string **4129e9544fe92be22d38ebcb7cf5** is entered in the **password** edit box.
- The **Sign-In** image is clicked.

The **Documentation** column translates each of the steps into understandable sentences.

Tip: You can print the contents of the Keyword View to your Windows default printer, or preview it on screen before printing. For more information, refer to the *QuickTest Professional User's Guide*.

Understanding the Business Component Keyword View Columns

The Business Component Keyword View can contain any of the following columns: **Item**, **Operation**, **Value**, **Output**, and **Documentation**. A brief description of each column is provided below. For more detailed information on each column, see “Adding a Step to Your Component” on page 59.

Note: If you do not see one or more of the columns described below in your Keyword View, you can use the Keyword View Options dialog box to display them. For more information, see “Setting Keyword View Display Options” on page 19.

Item Column

The test object on which you want to perform the step or **Operation**, which enables you to choose an operation from a user-defined function library file. You choose the item from a drop-down list, which displays the **Operation** item and all child test objects for the previous step. If no child test objects are available, the sibling test objects are displayed. For example, if the previous step specifies the “user name” object, the “password” test object might be displayed for the next step.

You can choose additional test objects from the object repository tree or directly from the application you want to test. For more information, see “Selecting an Item for Your Step” on page 62. For information on managing the test objects in the shared object repository, see “Managing the Shared Object Repository” on page 30.

If you want to add a comment or manual step to your component, you can choose **Comment** from the **Item** column. This adds a comment row to the Keyword View. Comments are displayed in a free text cell that extends the entire width of the row, and are no longer part of the **Item** column.

Operation Column

The operation to be performed on the item. This column contains a list of commonly used operations (methods, functions, and sub-procedures) that can be performed on the item selected in the **Item** column, for example, **Click** and **Select**. The most commonly used operation for the item selected in the **Item** column is displayed by default. For more information, see “Selecting the Operation for Your Step” on page 67. You can define additional operations for a test object using the **RegisterUserFunc** method. For more information, see “Working with User-Defined Functions” on page 109 and “Registering a Function” on page 118.

Value Column

The argument values for the selected operation. The **Value** cell is partitioned according to the number of arguments of the selected option in the **Operation** column. The value can be a constant, a *local* parameter, or a *component* parameter depending on the selected option.

Local parameter—A local parameter is specific to the business component and can only be accessed by that component. It is intended for use in a single step or between component steps, for example, as an output parameter for one step and an input parameter for a later step. For more information, see “Working with Parameters” on page 73.

Component parameter—A component parameter is a parameter that can be accessed by any component in your Quality Center project. For more information, see “Defining Parameters for Your Component” on page 103.

Output Column

The parameter in which output values for the step are stored, for example, **cCols** would store the output value of the current step in a parameter called **cCols**. You can then use the value stored in the output parameter later in the component as an input parameter. As in the **Value** column, you can use two types of parameters when specifying an output parameter—a local parameter or a component parameter.

Documentation Column

Read-only auto-documentation of what the step does in an easy-to-understand sentence. If you want to print or view only the steps, you can choose to display only this column. For example, you may want to print or view manual testing instructions.

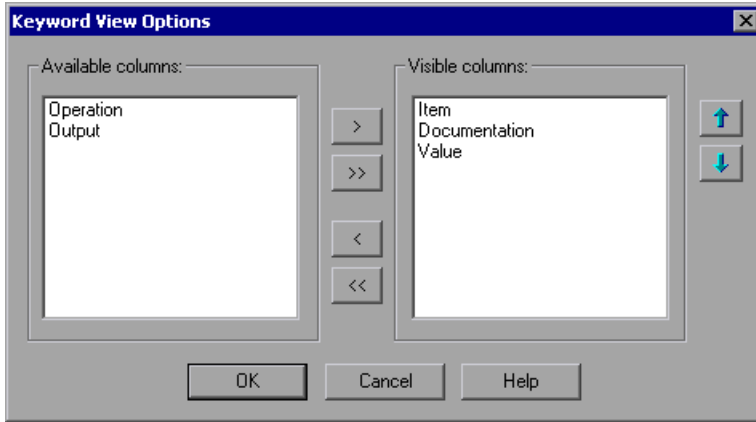
Setting Keyword View Display Options

You can specify which columns you want to display and the order in which they are displayed. For more information about the available columns, see “Understanding the Business Component Keyword View Columns” on page 17.

Tip: You can choose to display only the **Documentation** column and then print the Keyword View for use as instructions for manual testing. For more information on printing from the Keyword View, refer to the *QuickTest Professional User's Guide*.

To set the Keyword View display options:

- 1 Choose **Tools > Keyword View Options** or right-click a column header and choose **View Options**. The Keyword View Options dialog box opens:



The **Available columns** box lists columns not currently displayed in the Keyword View. The **Visible columns** box lists columns currently displayed in the Keyword View.

- 2 Double-click column names or choose column names and click the arrow buttons (> and <) to move them between the **Available columns** and **Visible columns** boxes.

Tip: Click the double arrow buttons (>> and <<) to move all the column names from one list to the other. Select multiple column names (using the SHIFT and/or CONTROL keys) and click the arrow buttons (> and <) to move only the selected column names from one list to the other.

- 3 In the **Visible columns** box, set the order in which columns appear in the Keyword View by selecting one or more columns and then using the up and down arrow buttons.

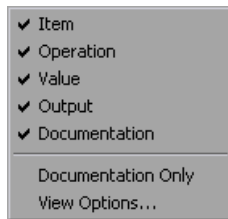


Note: The order of the columns in the Keyword View does not affect the order in which the cells need to be completed for each step. For example, if you choose to display the **Operation** column to the left of the **Item** column, you still need to select the item first, and only then is the **Operation** column list refreshed to match the selection you made in the **Item** column.

- 4 Click **OK** to close the dialog box and apply the new column display.

To display or hide specific columns:

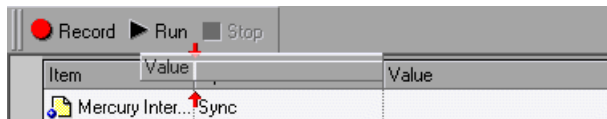
Right-click the column header row and then select or clear the required column name from the displayed menu.



Tip: You can quickly display only the **Documentation** column, for example, if you want to print the steps for use as instructions for manual testing, by selecting **Documentation Only**. The **Documentation** column and any comments defined in the component are displayed.

To rearrange columns:

Drag a column header and drop it at a new location. Red arrows are displayed when the column header is dragged to an available location.



Using QuickTest Commands for Business Components

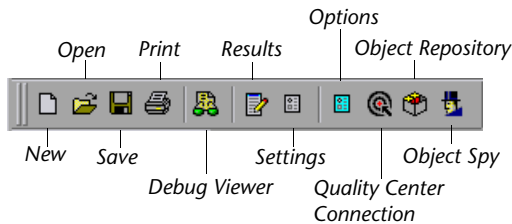
QuickTest displays a different set of commands and toolbar buttons for tests, business components, and application areas. Each set is customized for the type of document you are creating or modifying.

You work with business components and application areas using the Keyword View, described on page 16. You can select QuickTest commands from the menu bar or from a toolbar. Some QuickTest commands can also be executed by selecting commands from context-sensitive (right-click) menus or pressing shortcut keys. For more information, see “Using Keyboard Commands in the Business Component Keyword View” on page 24.

All commands are available from the menu bar. You can execute frequently used QuickTest commands by clicking buttons on the toolbars. For business components and application areas, QuickTest has three built-in toolbars—the File toolbar, the Testing toolbar, and the Debug toolbar. A brief description of each toolbar is provided below. For more information, refer to the *QuickTest Professional User’s Guide*.

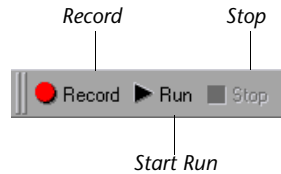
File Toolbar

The File toolbar contains buttons for managing a component. The following buttons are displayed on the File toolbar:



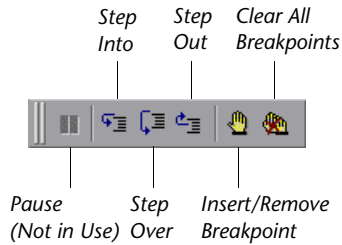
Testing Toolbar

The Testing toolbar contains buttons for the commands used when creating and maintaining your component. The following buttons are displayed on the Testing toolbar:



Debug Toolbar

The Debug toolbar contains buttons for the commands used when debugging the steps in your component. The following buttons are displayed on the Debug toolbar:



Using Keyboard Commands in the Business Component Keyword View

If you prefer to use your keyboard, you can use the following keyboard commands to navigate within the Keyword View:

- Press F8 or INSERT/INS to add a new step below the currently selected step.
- The TAB and SHIFT+TAB keys move the focus left or right within a single row, unless you are in a cell that is in edit mode. If so, press ENTER to exit edit mode, and then you can use the TAB keys.
- When a cell containing a list is selected:
 - You can press ENTER or SHIFT+F4 to open the list for that column.
 - You can change the selected item by using the up and down arrow keys. The list must be open before you can use the arrow keys.
 - You can type a letter or sequence of letters to move to a value that starts with the typed letter(s). The typed sequence is highlighted white.
- You can use the left and right arrow keys to move the focus one cell to the left or right, with the following exceptions:
 - In the last cell in a row, the right arrow key moves the focus to the first cell in the next row.
 - When a cell is in edit mode, for example, when modifying a value or comment, the left and right arrow keys move within the edited cell.
- When a **Value** cell is selected, press CTRL+F11 to open the Value Configuration Options dialog box.
- When an **Output** cell is selected:
 - Press CTRL+F11 to open the Output Options dialog box.
 - Press DELETE to cancel output to the parameter.

3

Working with Application Areas

Application areas provide all of the resources and settings needed to create a business component. Each business component is based on an application area from which it inherits these resources and settings.

Note: In earlier QuickTest Professional versions, the application area was known as a business component template. At that time, all business components used the same template. Now, QuickTest enables you to create multiple application areas that can be customized to suit the requirements of each area of your application.

This chapter describes:

- About Working with Application Areas
- Creating an Application Area
- Managing the Shared Object Repository
- Saving an Application Area
- Opening an Application Area
- Deleting an Application Area

About Working with Application Areas

A Subject Matter Expert can implement the content of component steps only after choosing the *application area* on which to base the component. You create these application areas, which contain all of the resources and settings required to create business components. When you create an application area, you specify the general application area properties, associations to any QuickTest Professional add-ins, add links to function library files and to the shared object repository to be used by any components, specify the Windows-based applications on which the component can record and run, and add links to any recovery scenarios and their settings.

You can create as many application areas as needed. For example, you may decide to create an application area for each Web page, module, window, or dialog box in your application. Alternatively, for a small application, one application area may be all that is needed.

Before you create an application area, consider the requirements of Subject Matter Experts that will use the application area to create business components. What test objects will they need? How will you rename the test objects and other items so that their meanings are clear to a wide range of users? What user-defined functions can you add to ensure that all required operations are available? To ensure availability, it is recommended that these function library files be saved in the Quality Center project *before* creating the application area, although you can update an application area at any time. QuickTest also provides you with a set of pre-defined resource files that you can associate with the application area, for example, a function library file. These files are located in the Test Plan module of your Quality Center project under **Subject/BPT Resources**.

When you save the application area, make sure that you provide it with a meaningful name and a clear description. When a Subject Matter Expert creates a new business component, the name and description provide the only indication of the intended use of the application area. For example, if an application area is intended for components that test a login dialog box, you might name it “LoginDialog”.

After you create an application area, you can notify the Subject Matter Experts so that they can begin using it to create business components. (If necessary, Subject Matter Experts can also start to create a component before the application area is ready, and only later associate the application area with the component.)

When the Subject Matter Expert creates a business component, a copy of the settings and resources that you defined in the application area are embedded in the component. Therefore, any changes that you make to the application area at a later time are not applied directly to the component. (The exception to this, of course, is the modification of linked resources within Quality Center. As long as the path remains the same, the business component will continue to access the linked file or shared object repository. However, your test, component, or business process test may not run correctly if you make changes to the content of a linked file.)

To apply changes from the application area, you need to notify the Subject Matter Experts and ask them to update their copies of the application area. For example, if you add a new function library reference to an application area on which a business component is based, the business component will have access to it only after its copy of the application area is updated.

Note that updating an application area may affect the business component and prevent it from running correctly, for example, if a component step is looking for a file that no longer exists. Therefore, it is recommended to finalize the application area before making it available to Subject Matter Experts (though not mandatory). For more information on updating an application area, refer to the *Business Process Testing User's Guide*.

Creating an application area comprises the following steps:

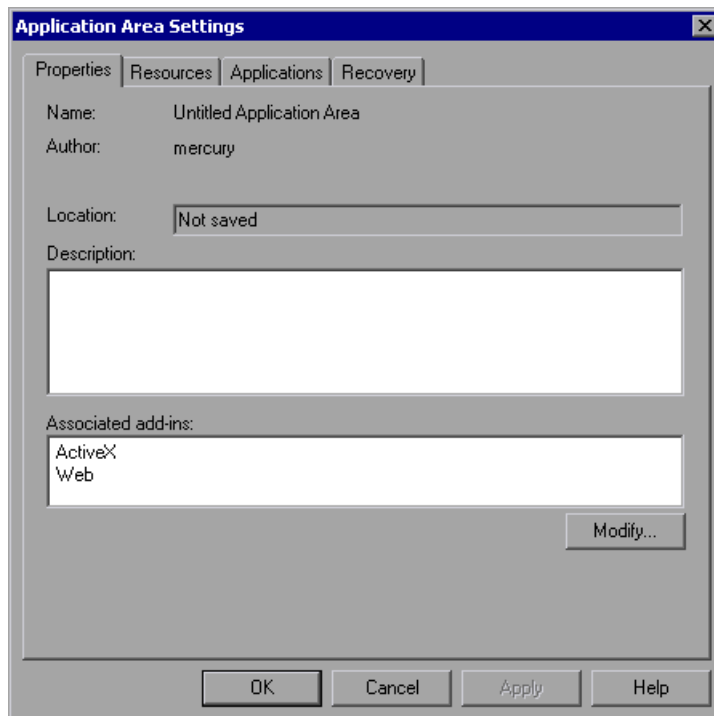
- Creating User-defined Functions in Function Library Files, see page 109
- Creating an Application Area, see page 28
- Managing the Shared Object Repository, see page 30
- Saving an Application Area, see page 35

Creating an Application Area

When you create a new application area, you create a shell that will ultimately contain all of the application area settings and resources needed to create a new business component.

To create an application area:

- 1 In QuickTest, connect to the Quality Center project in which you want to save the application area. This is the Quality Center project that will be used by Subject Matter Experts to define business components and business process tests. For more information, see “Connecting to Your Quality Center Project” on page 12.
- 2 Choose **File > New > Application Area** or press CTRL + ALT + N. The Application Area Settings dialog box opens.





Tip: If an application area is already open, you can also click the **New** toolbar button to open a new application area.

The Application Area Settings dialog box enables you to specify the settings and resource files that you want business components based on the application area to inherit and use.

3 You can now:

- ▶ Modify the application area settings and define its resources. The tabs in the Application Area Settings dialog box are similar to the tabs in the Business Components Settings dialog box. For more information about the Settings tabs, see “Defining Business Component and Application Area Settings” on page 85.
- ▶ Save the application area. (You can modify its settings later. However, it is recommended to select a unique shared object repository for the application area before you save it.) For more information, see “Saving an Application Area” on page 35.

Note: If you close the Application Area Settings dialog box before you select a shared object repository in the Resources tab, a message box opens asking you to select a shared object repository for the application area. It is strongly recommended that you use a different shared object repository for each application area (and not use the default shared object repository provided with QuickTest).



Tip: You can reopen the Application Area Settings dialog box at any time by choosing **Application Area > Settings** or by clicking the **Application Area Settings** toolbar button.

Managing the Shared Object Repository

A shared object repository stores all of the test objects that may be used when creating steps for a business component. After you associate a shared object repository with an application area, it can be accessed by any business component that is based on that application area. You can add test objects to this shared object repository either by recording your application or by adding test objects manually using the Object Repository dialog box. For information on managing test objects in a shared object repository, refer to the *QuickTest Professional User's Guide*.

Note: Although QuickTest provides a shared object repository (stored in the Test Plan module of your Quality Center project), it is strongly recommended not to use it. If you associate this default shared object repository (**Default.tsr**) with your application area or a specific component, any components using this shared object repository may not run correctly.

You can use an existing shared object repository that already contains your test objects, or you can create a new one. All business components based on an application area that refers to this customized shared object repository will then access this shared object repository file. For more information, see “Adding a Shared Object Repository to Your Quality Center Project” on page 31.

After you add test objects to the shared object repository, they are displayed in the **Item** list in the Keyword View (according to relevance) and in the Select Object for Step dialog box. Both you and Subject Matter Experts can then use the test objects to add steps to business components. For more information, see “Selecting an Item for Your Step” on page 62.

It is recommended to rename test objects with meaningful names that will enable Subject Matter Experts to easily identify the test object they need to use for a specific step. For example, if a test object is called **Edit**, by default, you may want rename it to **UserName** (if that is what the user needs to enter in the edit box, of course).

For container objects, it is recommended to specify their context, for example, if you have several confirmation message boxes, you may want to name one Login > Confirm, another ChangePassword > Confirm, and still another BillingInfo > Confirm. For more information, see “Modifying Test Object Names” on page 34.

Note: You cannot add WinMenu objects directly to the shared object repository using the **Add Objects** button in the Object Repository dialog box. If you want to add a WinMenu object to the repository, you can record it and then delete the recorded step from the Keyword View.

Adding a Shared Object Repository to Your Quality Center Project

To enable a Subject Matter Expert to access the test objects from the application when implementing component steps, the test objects must be stored in a shared object repository located in your Quality Center project. You can add as many shared object repositories to your Quality Center project, as needed. After you add a shared object repository to your project, you can choose it, as described in “Specifying a Different Shared Object Repository for the Application Area” on page 33.

Note: It is recommended to use a unique shared object repository for each application area.

To create a shared object repository in your Quality Center project:



- 1** In QuickTest, open the Application Area Settings dialog box, (if it is not open) by choosing **Application Settings > Settings** or by clicking the **Application Area Settings** toolbar button.
- 2** In the Resources tab, enter a path and name for the new shared object repository in the **Object repository location** box. The path must be to your Quality Center project, for example:

[Quality Center] Subject\BPT Resources\Object Repositories\MyRepository.tsr

Tip: You can click the **Object repository location** browse button, choose an existing shared object repository file, and add it to your application area. This provides you with the correct path. Then, rename the file in the **Object repository location** box. For example, if you chose **Default.tsr**, you can now rename it to **MyRepository.tsr**. For information on choosing an existing shared object repository, see “Specifying a Different Shared Object Repository for the Application Area” on page 33.

- 3** Click **Apply** to create a new shared object repository file and keep the Application Area Settings dialog box open, or click **OK** to create a new shared object repository file and close the Application Area Settings dialog box. QuickTest asks you if you want to create a new shared object repository file.
- 4** Click **Yes**. You can now add test objects to your shared object repository. For more information, refer to the *QuickTest Professional User’s Guide*.

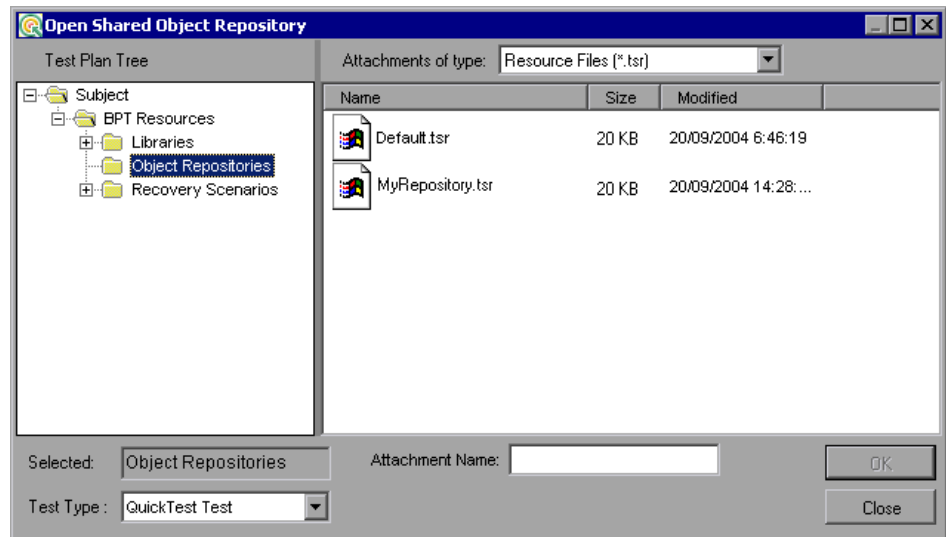
Specifying a Different Shared Object Repository for the Application Area

If you added another shared object repository file to your Quality Center project, you can specify it in the application area. This enables all business components that are based on the application area to access the test objects that are stored in this file.

To specify a different shared object repository for the application area:

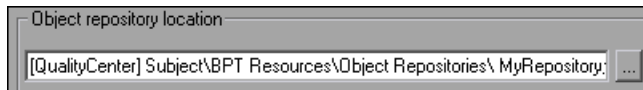


- 1** In QuickTest, open the Application Area Settings dialog box, (if it is not open) by choosing **Application Settings > Settings** or by clicking the **Application Area Settings** toolbar button.
- 2** Select the Resources tab and click the **Object repository location** browse button. The Open Shared Object Repository dialog box opens.



- 3** In the Attachments pane, select the object repository file that you want to associate with your application area. The name is displayed in the **Attachment Name** box.

- 4 Click **OK**. The Open Shared Object Repository dialog box closes and the selected file is displayed in the **Object repository location** box in the Resources tab.



All business components that are based on the application area from this point on will have access to the test objects stored in this shared object repository. If you want components that are already based on this application area to access this new shared object repository, you need to ask the Subject Matter Experts to update their copies of the application area. For more information on updating application areas, refer to the *Business Process Testing User's Guide*.

Modifying Test Object Names

Subject Matter Experts need to be able to distinguish between the various test objects when they define steps for a business component. Therefore, it is important that all test object names be self-explanatory. You can change the name that QuickTest assigns automatically to a stored test object. When you modify the name of an object, the name is automatically updated in the QuickTest Keyword View and the Steps tab of the Quality Center Business Components module for all occurrences of the object (also in steps that were created using the old test object names).

When you open another component that uses the same shared object repository and has one or more occurrences of the modified object, the names within that component are updated. This may take a few moments.

To modify a test object's name:

- 1** Open the shared object repository. Choose **Tools > Object Repository**, click the **Object Repository** toolbar button, or open the Object Properties dialog box for the object you want to modify and click the **Repository** button.
- 2** Right-click the object in the object repository tree and choose **Rename**.
- 3** Modify the name of the object and click **OK** or select another object in the object repository tree. The name you assign to the object must be unique within the specific hierarchy of the shared object repository. Object names are not case-sensitive.

Saving an Application Area

You can save an application area before or after you define its settings and resources. However, before you save an application area, it is strongly recommended to select a unique shared object repository for it (not the default shared object repository provided with QuickTest).

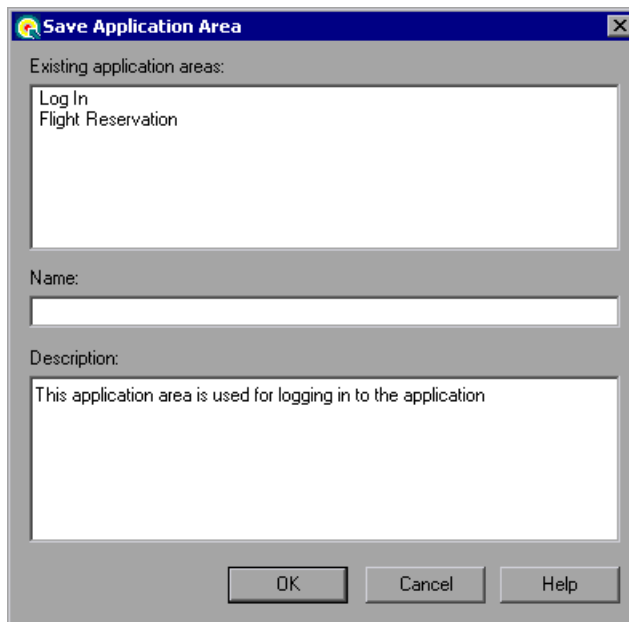
When you save an application area, make sure that you provide a unique name and description that clearly indicate its use. For example, if the application area is intended to be used by components that test the Log In module, you might name it “Log In” and add a description that specifies its intended use, such as, “Intended for use with business components that test the Log In module.”

To save an application area:

- 1** In QuickTest, connect to a Quality Center server and project with Business Process Testing support. For more information, see “Connecting to Your Quality Center Project” on page 12.
- 2** Create an application area. You can add information to it or leave it blank and modify it later. For more information, see “Creating an Application Area” on page 28.



- 3** Click **Save** or choose **File > Save**. The Save Application Area dialog box opens.



The Save Application Area dialog box includes the following items:

Option	Description
Existing Application Areas	Lists all defined application areas. This enables you to see the names of the existing application areas so that you can specify a unique name for the application area that you want to save.
Name	Indicates the name of the application area. Enter a descriptive name that will enable Subject Matter Experts to quickly identify the application area that is suitable for their component. Note: The name you enter must not exceed 255 characters.
Description	Displays the description you entered in the Properties tab of the Application Area Settings dialog box when you created the application area. For more information, see “Creating an Application Area” on page 28. If you did not enter a description when you created the application area, you must enter one now. The mandatory description you provide will enable Subject Matter Experts to easily differentiate between the various application areas and choose the one that is best suited for their component.

4 Click **OK** to save the application area.

Tip: If you are creating a new application area that is similar to an existing one, you can use the **Save As** option. Then you can modify the application area, as needed.

Opening an Application Area

After an application area is saved, you can open it for viewing or modification. For example, you may want to update a recovery scenario or add a library file with user-defined functions to the application area.

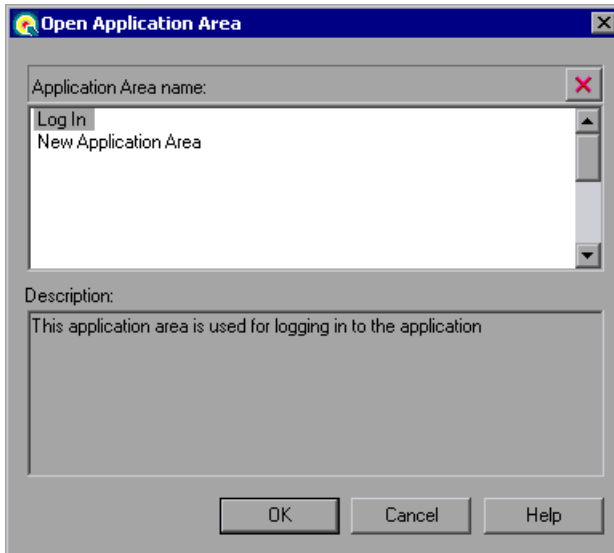
To open an application area:

- 1 In QuickTest, connect to a Quality Center server and project with Business Process Testing support. For more information, see “Connecting to Your Quality Center Project” on page 12.



- 2 Choose **File > Open > Application Area** or press CTRL + ALT + O. If another application area is already open, you can also click **Open**.

The Open Application Area dialog box opens and displays a list of the defined application areas. You can click on an application area to view its description. (These are the descriptions that Subject Matter Experts use to determine which application area to choose when they create a new business component.)



- 3 Select an application area and click **OK**. The selected application area opens.

4 You can:

- View the settings for the application area.
- Modify the settings for the application area. For more information, see “Defining Business Component and Application Area Settings” on page 85.

Note: You can also delete an application area from this dialog box. For more information, see “Deleting an Application Area”, below.

Deleting an Application Area

If an application area is no longer needed, you can delete it. Deleting an application area does not affect business components that currently use it because each business component saves a copy of the associated settings and resource links locally. A business component does not need to access to the application area on which it is based to run correctly.

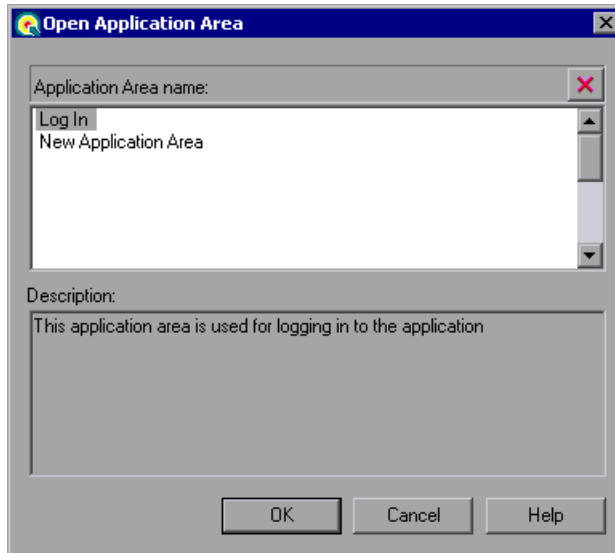
Tip: If you delete an application area and later need to modify it, you can recreate the application area using the same name as the deleted one. Subject Matter Experts can then update the application area from the Business Components module in Quality Center. For more information on updating application areas, refer to the *Business Process Testing User’s Guide*.

To delete an application area:

- 1 In QuickTest, connect to the Quality Center project that contains the application area that you want to delete. For more information, see “Connecting to Your Quality Center Project” on page 12.



- 2 Choose **File > Open > Application Area** or press CTRL + ALT + O. If another application area is already open, you can also click **Open**. The Open Application Area dialog box opens.



- 3 Select the application area that you want to delete and click the **Delete** button. A warning message displays.

Note: You cannot delete the currently open application area or an application area that is currently being used by another QuickTest Engineer.

- 4 Click **Yes** to confirm. The selected application area is deleted.

4

Working with Business Components

You can use the Business Component Keyword View to create, view, modify, and debug a business component in QuickTest.

This chapter describes:

- ▶ About Working with Business Components
- ▶ Creating a New Business Component
- ▶ Saving a Business Component
- ▶ Opening an Existing Business Component

About Working with Business Components

Generally, business components are created and modified in Quality Center by Subject Matter Experts. For more information, refer to the *Business Process Testing User's Guide*. However, you can use the Business Component Keyword View to create, view, modify, and debug a business component in QuickTest, if required.

In the Keyword View, business components are divided into steps in a modular, keyword-driven, table format. Each step is a row that comprises individual parts that you can easily modify. You create and modify steps by selecting items and operations and entering additional information, as required.

Each step in a business component is automatically documented as you complete it. This enables you to view a description of the step in understandable sentences. If you have already created an application area and added a function library file to it, when you define a step by selecting a user-defined operation (function), the documentation that you added in the function library file will be displayed for the step. For more information, see “Documenting the Function” on page 121.

Before you create or open a business component, you connect QuickTest to a Quality Center project, which is where business components and application area resources and settings are stored. Connecting to your Quality Center project enables QuickTest to create or open the business component. This also enables the business component to access all of the resources defined in the application area on which the component is based.

If the application area you select does not yet contain all of the required resources and settings, you can still add steps using the **Comment** option. This enables you to type in manual steps as you would in another application, such as Microsoft Excel or Microsoft Word. You can also use this option to add information about a step or to separate sections of your business component. Each comment appears as a separate row in the Keyword View. For more information, see “Working with Comments” on page 81.

Note: If you want to delete a component, whether it was created in QuickTest or in Quality Center, it can be deleted only in Quality Center. For more information, refer to the *Business Process Testing User’s Guide*.

Creating a New Business Component

When QuickTest is connected to a Quality Center project, you can create a new business component in that project.

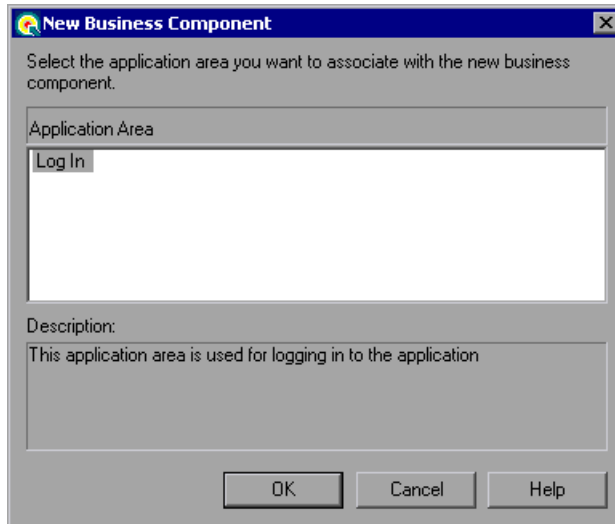
Each business component is based on a specific application area, which is stored in the Quality Center project in which you intend to save the component. Each application area specifies the settings and resources for the business component, including the location of the shared object repository, function library files, recovery scenarios, and other information. There may be one or more application areas from which to choose. You select the application area that is best suited for your business component. For more information, see “Working with Application Areas” on page 25.

Generally, business components are created in Quality Center by Subject Matter Experts. For more information, refer to the *Business Process Testing User's Guide*. However, if needed you can also create business components in QuickTest. This section describes how to create a new component in QuickTest.

To create a new business component:

- 1 Connect to the Quality Center project in which you want to save the business component. For more information, see “Connecting to Your Quality Center Project,” on page 12.

- 2 Choose **File > New > Business Component** or press CTRL + SHIFT + N. The New Business Component dialog box opens, listing all available application areas. You can click on an application area to view its description. (These are the descriptions that Subject Matter Experts use to determine which application area to choose when they create a new business component.)



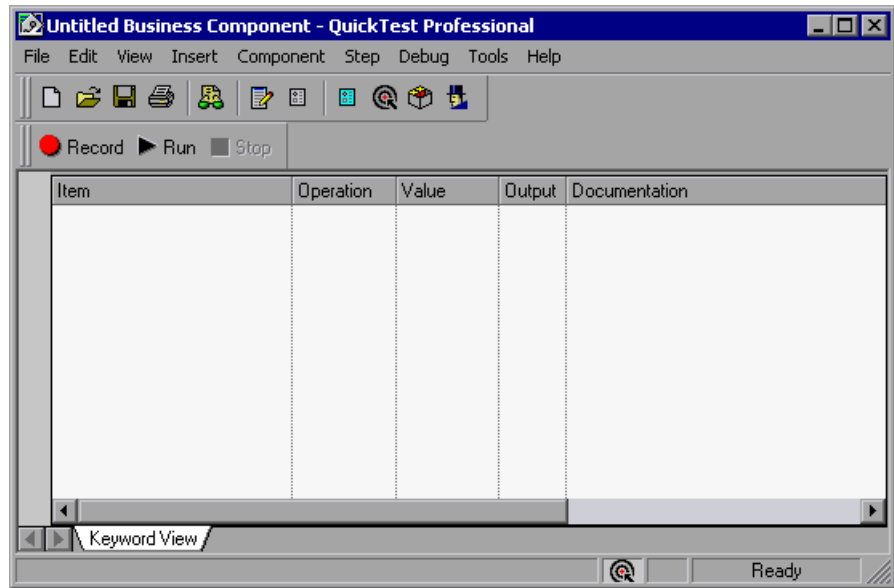
Note: If you have not yet defined an application area, a new, untitled business component opens using the default settings that are supplied with Business Process Testing. Later, after you define an application area, you can base the business component on it.



Tip: If a business component is already open, you can also click the **New** toolbar button to open a new component.

- 3 Select a suitable application area from the **Application Area** box. For example, if you want to create a business component for a Log In module, select the application area that is defined for it. Click **OK**.

A new, untitled business component opens in the Keyword View. Although the business component does not yet contain content, it does contain all of the required settings and resources that were defined in the application area on which it is based. If the application area contained steps, these steps are also added to the new business component.



Note: If the selected application area is associated with a shared object repository that is locked, a message regarding locked resources opens when you create a new component based on this application area. For more information, refer to the *QuickTest Professional User's Guide*.

4 You can now:

- Add steps and comments to your business component. For more information, see “Adding a Step to Your Component” on page 59 and “Working with Comments” on page 81.
- Save your component. (You can add steps later.) For more information, see “Saving a Business Component” on page 46.

Saving a Business Component

After you create or modify a component, you can save it to your Quality Center project. When you save a component, you give it a descriptive name and save it to the relevant folder in the component tree in the Quality Center project (Business Components module).

You can also save a copy of an existing component to any folder in the same Quality Center project. To enable all users to differentiate between the various components, you may want to rename a copy of a component, even if you save it to a different folder.

You save business components and scripted components in the same way. For more information on scripted components, see “Working with Scripted Components” on page 51.

Note: For scripted components only, the data sheet name in the Data Table is identical to the scripted component name. If you save a scripted component with a new name (**File > Save As**), the data sheet is automatically renamed. If you have a step that references the data sheet by name, the step will fail during the run session because it references the former data sheet name. If you save a scripted component with a new name, you must find any references to the former data sheet name in the Expert View and replace them with the new data sheet name.

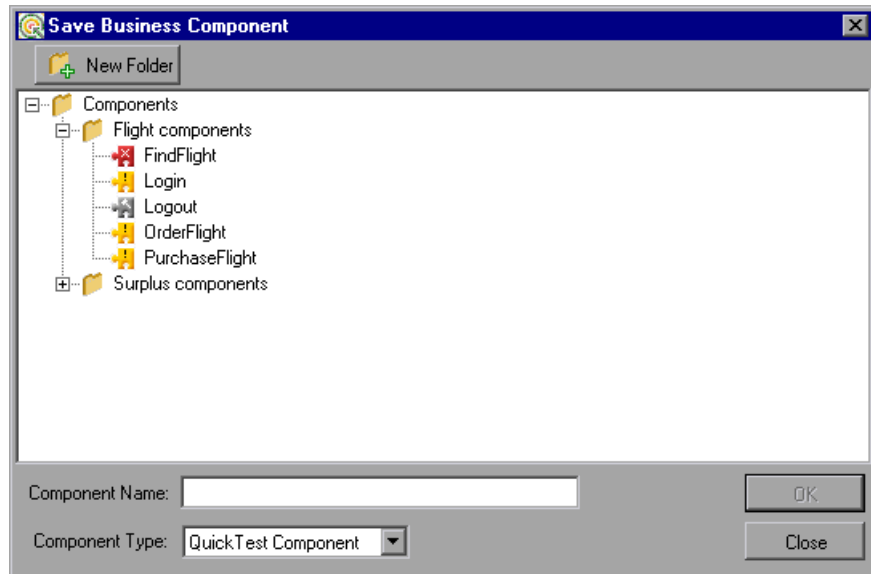
To save a component to your Quality Center project:

- 1 Save the component in one of the following ways:



- For a new component that has never been saved, click **Save**, choose **File > Save**, or press CTRL + S.
- To save a copy of an existing component, choose **File > Save as**.

The Save Business Component dialog box opens and displays the component tree.



In the component tree, the status of each component is indicated by its icon. For more information, refer to the *Business Process Testing User's Guide*.

- 2 Select the folder in which you want to save the component. To expand the tree and view a sublevel, double-click a closed folder. To collapse a sublevel, double-click an open folder.



You can either save the component to an existing folder in your Quality Center project or click the **New Folder** button to create a new folder in which to save it. If you want to save a copy of an existing component with same name, you must save it to a different folder.

- 3 In the **Component Name** box, enter a name for the component. Use a descriptive name that will help you and others identify the component easily. You cannot use the following characters in a component name:
`\ / : " ? < > | * % '`
- 4 Accept the default **Component Type**—**QuickTest Component**.

- 5 Click **OK** to save the component and close the dialog box. As QuickTest saves the component, the operations that it performs are displayed in the status bar.

The component is saved to the Quality Center project. You can now view and modify it using QuickTest.

Note: Subject Matter Experts can also access the component from the Quality Center Business Components module. For more information, refer to the *Business Process Testing User's Guide*.



Tip: If the component was saved previously, you can save it by clicking **Save**, choosing **File > Save**, or pressing **CTRL + S**.

Opening an Existing Business Component

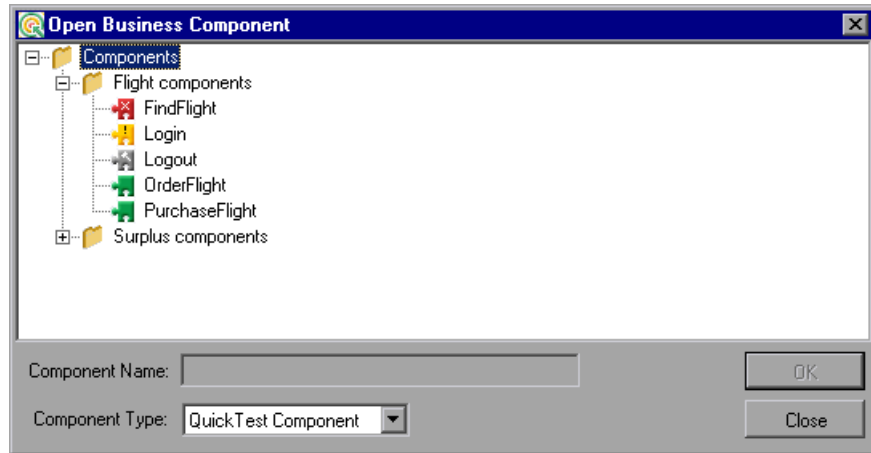
When QuickTest is connected to a Quality Center project, you can open a component that is stored in the project to view, modify, debug, or run it. You find components according to their location in the component tree.

You save business components and scripted components in the same way. For more information on scripted components, see “Working with Scripted Components” on page 51.

Note: Components that are currently open in Quality Center or another QuickTest session are locked and can be opened only in read-only format. To work with these components, they must be closed elsewhere.

To open an existing component:

- 1 In QuickTest, connect to the Quality Center project in which your component is saved. For information on connecting to Quality Center, see “Connecting to Your Quality Center Project” on page 12.
- 2 Choose **File > Open > Business Component**. The Open Business Component dialog box opens showing all of the components stored in the Quality Center project.



In the component tree, the status of each component is indicated by its icon. For more information, refer to the *Business Process Testing User's Guide*.

Tip: You can open a recently used component by selecting it from the Recent Files list in the **File** menu. If you select a component when you are not connected to the Quality Center project, or if you select a component that is stored in a different Quality Center project, QuickTest displays a message asking you if you want to connect to that project.



If a component is already open, you can also click the **Open** toolbar button to open another component.

- 3 Click the relevant folder in the component tree. To expand the tree and view the business components, double-click closed folders. To collapse the tree, double-click open folders.
- 4 Select a component. The component name is displayed in the read-only **Component Name** box.
- 5 Click **OK** to open the component.

As QuickTest downloads and opens the component, the operations it performs are displayed in the status bar.

When the component opens, the QuickTest title bar displays Components, the full path and the component name. For example, the title bar for a flight_login component may be:

Components\Flight\flight_login

Note: If the component you are opening is associated with a shared object repository that is locked, a message opens instructing you how to open the component. For more information on locked resources, refer to the *QuickTest Professional User's Guide*.

5

Working with Scripted Components

Scripted components are easily-maintained reusable scripts that perform a specific task. Scripted components are similar to the business components provided in QuickTest Professional version 8.0.

You can use the Keyword View, the Expert View, and other QuickTest tools and options to create, view, modify, and debug scripted components in QuickTest.

This chapter describes:

- ▶ About Working with Scripted Components
- ▶ Creating a Scripted Component

About Working with Scripted Components

You can utilize the full power of both the Keyword View and the Expert View, as well as other QuickTest tools and options, when working with scripted components. For example, you can use the Step Generator to guide you through the process of adding methods and functions to your scripted component. Using the Expert View, you can enhance the scripted component flow by manually entering standard VBScript statements and other programming statements using QuickTest test objects and methods. You can also incorporate user-defined functions in your scripted component steps, parameterize selected items, and add checkpoints and output values to your scripted component. This chapter only describes how to create scripted components. For information about all of the functionality available for scripted components, refer to the *QuickTest Professional User's Guide*.

You can create scripted components for Subject Matter Experts, for example, if they need components that contain more complex functionality, such as loops or conditional statements. Subject Matter Experts working in Quality Center can then include these scripted components in business process tests to check that the application behaves as expected.

After you create a scripted component, Subject Matter Experts can view the auto-documentation generated by the component (read-only) in the Business Components module of the Quality Center project. They can run the scripted component and add it to their business process tests, but you remain responsible for maintaining the scripted component in QuickTest, if any changes are needed. Scripted components cannot be modified in Quality Center.

You save and open scripted component in the same way as you save and open business components. For more information, see “Saving a Business Component” on page 46 and “Opening an Existing Business Component” on page 48.

Creating a Scripted Component

When QuickTest is connected to a Quality Center project, you can create a new scripted component in that project.

Each scripted component is based on a specific application area, which contains the resources and settings used by the component, such as the location of the shared object repository and function library files. You select the application area that is best suited for your scripted component. You can choose from any application area that is located in the Quality Center project in which you intend to save the component. For more information, see “Working with Application Areas” on page 25.

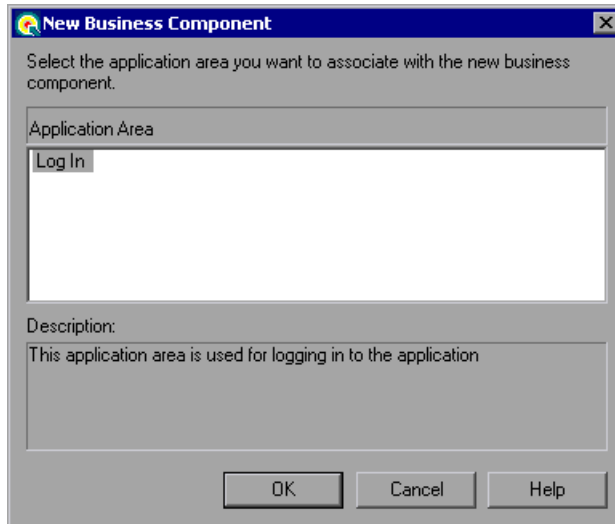
Notes:

If you have not yet created an application area, the scripted component will be based on the default settings provided with Business Process Testing, and you will not be able to select an application area for it.

After you select an application area for a scripted component, you cannot change the application area on which it is based.

To create a scripted component:

- 1 Connect to the Quality Center project in which you want to save the scripted component. For more information, see “Connecting to Your Quality Center Project,” on page 12.
- 2 Choose **File > New > Scripted Component** or press ALT + SHIFT + N. The New Business Component dialog box opens, listing all available application areas.



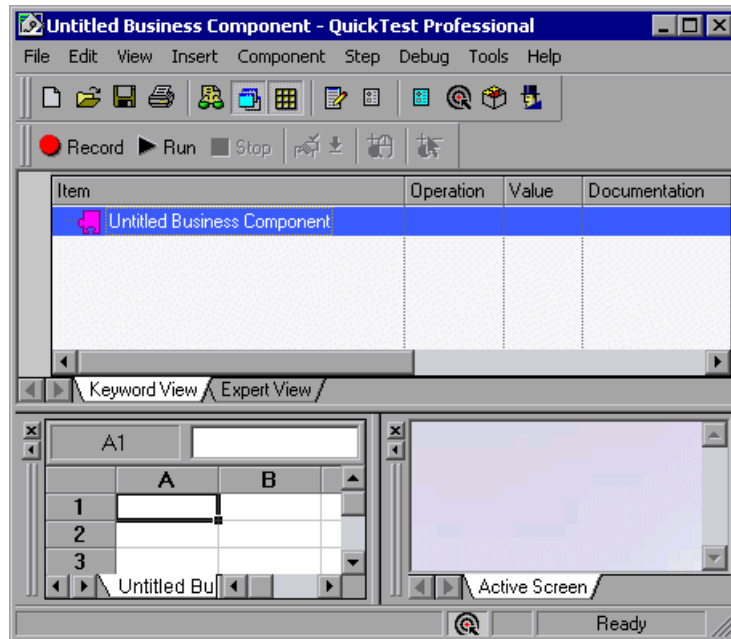
Note: If you have not yet created an application area, a new, untitled scripted component opens using the default settings that are supplied with Business Process Testing. You will not be able to change the application area later.



Tip: If a scripted component is already open, you can also click the **New** toolbar button to open a new scripted component.

- 3 Select a suitable application area from the **Application Area** box. For example, if you want to create a scripted component for a Flight Reservation module, select the application area that is defined for it. Click **OK**.

A new, untitled scripted component opens. Although the scripted component does not yet contain content, it does contain all of the required settings and resources that were defined in the application area on which it is based.



Note: If the selected application area is associated with a shared object repository that is locked, a message regarding locked resources opens when you create a new component based on this application area. For more information, refer to the *QuickTest Professional User's Guide*.

4 You can now:

- ▶ Add content to your scripted component using the functionality and options provided by QuickTest. For example, in the Expert View, you can manually enter standard VBScript statements, as well as add statements using QuickTest objects and methods. You can use the Step Generator to add steps containing programming logic. You can also add checkpoints and output values to your scripted component. For more information about the functionality that can be used when creating a scripted component, refer to the *QuickTest Professional User's Guide*.
- ▶ Save your scripted component. (You can add content later.) You save a scripted component in the same way as you save a business component. For more information, see “Saving a Business Component” on page 46.

Note: Subject Matter Experts can view (read-only) and work with scripted components from the Quality Center Business Components module. They cannot modify scripted component steps. For more information, refer to the *Business Process Testing User's Guide*.

6

Working with the Business Component Keyword View

The Business Component Keyword View provides an easy way to create, view, modify, and debug business component steps in a graphical easy-to-use format.

This chapter describes:

- ▶ About Working with the Business Component Keyword View
- ▶ Adding a Step to Your Component
- ▶ Selecting an Item for Your Step
- ▶ Selecting the Operation for Your Step
- ▶ Defining Values for Your Step Arguments
- ▶ Defining an Output Value for Your Step
- ▶ Working with Parameters
- ▶ Working with Comments
- ▶ Managing Component Steps

About Working with the Business Component Keyword View

In general, the Subject Matter Expert uses the Steps tab in the Quality Center Business Components module to add content to and modify component steps. However, this can also be done in QuickTest, as described in this chapter.

You use the Business Component Keyword View to create, view, modify, and debug business component steps and application areas.

The Business Component Keyword View differs from the QuickTest Test Keyword View in that it provides component-specific options that are specially designed to facilitate the creation of business components. This makes it easy and intuitive for Subject Matter Experts to create business components in Quality Center. (The Business Component Keyword View that you see in QuickTest is the same as the Steps tab that the Subject Matter Expert uses in Quality Center.)

The Business Component Keyword View can include comments, which enable you to enter manual steps and informational separators in a business component. All items (test objects and operations) in the Keyword View are displayed at the same hierarchical level, even if they are child objects of the previous step or operations to be performed. This makes it easier for Subject Matter Experts to manage their business component steps.

To work with the Business Component Keyword View, QuickTest must be connected to a Quality Center project with Business Process Testing support.

Item	Operation	Value	Documentation
Mercury Inter...	Navigate	"http://newtours.mercuryinteractive.com"	Navigate to "http://newtours.mercuryinteractive.com" in the browser.
userName	Set	"Mercury"	Enter "Mercury" in the "userName" edit box.
password	SetSecure	"41442073fc37b0fb9831d26e01b7aab...	Enter the encrypted string "41442073fc37b0fb9831d26e01b7aab8ce...
Sign-In	Click	9,8	Click the "Sign-In" image.
fromPort	Select	"New York"	Select the "New York" item in the "fromPort" list.
fromMonth	Select	"Dec"	Select the "Dec" item in the "fromMonth" list.
fromDay	Select	"29"	Select the "29" item in the "fromDay" list.
toPort	Select	"San Francisco"	Select the "San Francisco" item in the "toPort" list.
toMonth	Select	"Dec"	Select the "Dec" item in the "toMonth" list.
toDay	Select	"30"	Select the "30" item in the "toDay" list.
servClass	Select	"Business"	Select radio button "Business" in the "servClass" radio button group.
findFlights	Click	93,10	Click the "findFlights" image.
...Flights	Select	"DLK...Click...Airline...02C1027107100"	Select radio button "DLK...Click...Airline...02C1027107100" in the "...


Adding a Step to Your Component

After you create a new business component, the Keyword View is empty, as shown below (unless the associated application area contains steps).

Item	Operation	Value	Output	Documentation

When you add steps to it, each step is defined as a single row in the Keyword View. You can add a step below the currently selected step, at the end of an existing component, or at the beginning of a new component. You can also enter a comment.

Steps—A step represents an operation to be performed. After you create a step, you specify its contents. For example, you can choose the test object on which the step is performed, specify the operation to be performed in the step, and specify any relevant input or output values. When a business process test is run in Quality Center, the steps defined in the associated business components are performed. This section describes how to add a step to your business component.

Comments—A comment is a free text entry that spans an entire row. The  icon indicates a comment. You use comments to define manual steps or to provide information about adjacent steps in your business component. Comments are not processed when a business process test is run. For more information, see “Working with Comments” on page 81.

To add a step:

- 1 Select the row after which you want to add the new step and choose **Insert > New Step**, or press F8 or INSERT, or right-click a step and choose **New Step** from the context-sensitive menu. A new step is added to the Keyword View below the selected step.

Item	Operation	Value	Output	Documentation
<Select an item>				

Tip: If no steps are currently defined for your component, you can click anywhere in the Keyword View to add a new step. If you want to add a step at the end of your component, you can click anywhere in the Keyword View grid below the existing steps to add a new step.

2 Define the step by clicking in the cell for the part of the step you want to modify and specifying its contents, as described below. Each cell in the step row represents a different part of the step. For each step, you can define the following:

- ▶ **Item**—Either a test object on which you perform a step, or a user-defined function (**Operation**). You must select an option from the **Item** column before you can add additional content to a step. For more information, see “Selecting an Item for Your Step” on page 62.

Alternatively, you can choose to add a **Comment**, which enables you to add a manual step or other free text information between steps. For more information, see “Working with Comments” on page 81.

- ▶ **Operation**—The operation to be performed on the item. For more information, see “Selecting the Operation for Your Step” on page 67.
- ▶ **Value** (if relevant)—The argument values for the selected operation. For more information, see “Defining Values for Your Step Arguments” on page 69.
- ▶ **Output** (if relevant)—The parameter in which output values for the step are stored. For more information, see “Defining an Output Value for Your Step” on page 70.

Note: The **Documentation** cell is read-only. This cell displays an explanation of what the step does in an easy-to-understand sentence, for example, Click the “Sign-in” image. or Select “San Francisco” in the “toPort” list. In most cases, QuickTest can generate the description displayed in this cell.

If you created a function library and referenced it from the associated application area (or from the business component directly) using the Resources tab of the Application Area Settings dialog box (or the Business Component Settings dialog box), QuickTest can only display documentation for it if you defined the relevant text in the function library file. For more information, see “Documenting the Function” on page 121.

Tip: You can use the standard editing commands (**Cut**, **Copy**, **Paste** and **Delete**) in the **Edit** menu or in the context-sensitive menu to make it easier to define or modify your steps. You can also drag and drop steps to move them to a different location within your component. For more information, see “Managing Component Steps” on page 83.

- 3** After you make your changes, save the component to your Quality Center project. For more information, see “Saving a Business Component” on page 46.

Selecting an Item for Your Step

An *item* can be a test object in the shared object repository or a user-defined function—**Operation**. (The **Operation** item is available only if user-defined functions were added to a function library that is associated either with the application area or directly with the business component. For more information, see “Working with User-Defined Functions” on page 109.)

This section describes:

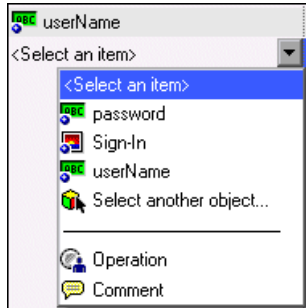
- “Selecting a Test Object from the Item List” on page 63
- “Selecting a Test Object from the Shared Object Repository” on page 63
- “Selecting a Test Object from Your Application” on page 64
- “Selecting the Operation Item” on page 66

After you select an item, you specify an operation for it. For more information, see “Selecting the Operation for Your Step” on page 67.

Note: In addition to selecting an item or **Operation** in the **Item** cell, you can also select **Comment**. This instructs QuickTest to convert the selected step into a free text cell that spans the entire row. After the step is converted into a comment, it cannot be restored to a step. You use the **Comment** option to enter manual steps or to provide information about adjacent steps. For more information, see “Working with Comments”, on page 81.

Selecting a Test Object from the Item List

The test objects available in the **Item** list are the sibling and child test objects of the previous step's test object, as defined in the shared object repository. The example below shows the objects available for the step following a **userName** test object.



To select a test object from the displayed Item list:

- 1 Click in the **Item** cell, then click the arrow button to display the **Item** list. If you have just created a new step, the list is displayed automatically as soon as you create the new step.
- 2 In the **Item** list, select the test object on which you want to perform the step. The item you select is displayed in the **Item** cell. You now need to specify an operation for the step. For more information, see “Selecting the Operation for Your Step” on page 67.

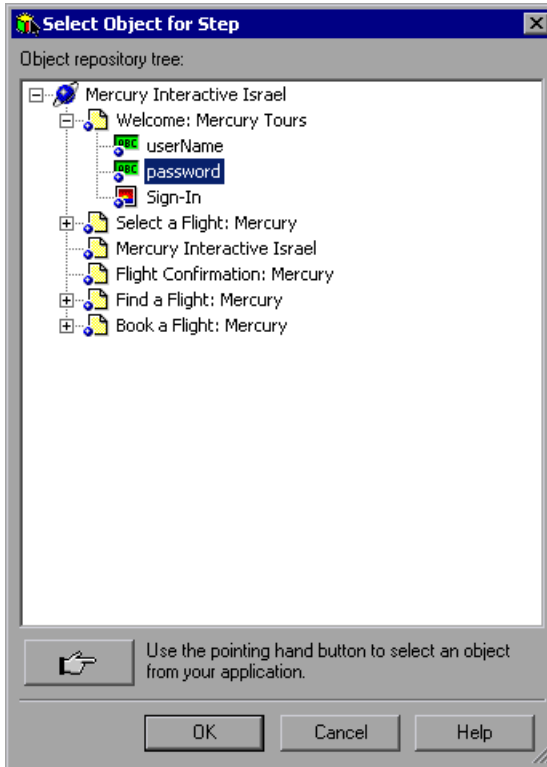
Selecting a Test Object from the Shared Object Repository

The shared object repository includes all of the test objects that are defined in the application area on which your component is based (including those displayed in the **Item** list, above). For more information on the shared object repository, refer to the *QuickTest Professional User's Guide*.

To select a test object from the shared object repository:

- 1 Click in the **Item** cell, then click the arrow button to display the **Item** list. If you have just created a new step, the list is displayed automatically as soon as you create the new step.
- 2 In the **Item** list, choose **Select another object**. The Select Object for Step dialog box opens.

- 3 Select a test object from the shared object repository tree and click **OK**.



The selected test object is displayed in the **Item** cell and is also added to the **Item** list. You now need to specify an operation for the step. For more information, see “Selecting the Operation for Your Step” on page 67.

Selecting a Test Object from Your Application

If the shared object repository does not include the test object that you need for this step, you can select it directly from your application and add it to the shared object repository so that you can use it in this and other steps.

To add a test object from your application:

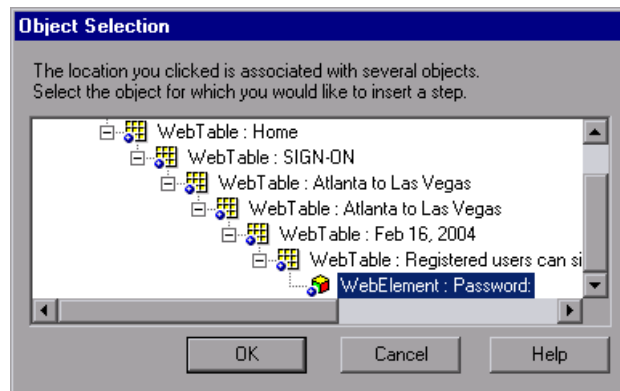
- 1 Click in the **Item** cell, then click the arrow button to display the **Item** list. If you have just created a new step, the list is displayed automatically as soon as you create the new step.
- 2 In the **Item** list, choose **Select another object**. The Select Object for Step dialog box opens.



- 3 Click the pointing hand button. QuickTest is minimized.
- 4 Use the pointing hand to click on the required object in your application.

Tip: You can hold the CTRL key to change the window focus or perform operations such as a right-click or mouseover to display a context menu. If the window containing the object you want to click is partially hidden by another window, you can also hold the pointing hand over the partially hidden window for a few seconds until the window comes into the foreground and you can point and click on the object you want. Note that pressing the CTRL key does not enable you to select an application from the Windows taskbar, therefore you must make sure that the window you want to access is not minimized.

If the location you clicked is associated with more than one object, the Object Selection dialog box opens.



- 5 Select the object for the new step and click **OK**. The object is displayed in the shared object repository tree in the Select Object for Step dialog box.
- 6 Click **OK**. The object is displayed in the **Item** column in the Keyword View. You can now specify the operation for the selected object. For more information, see “Selecting the Operation for Your Step” on page 67.

Tip: If you select an object in your application that is not in the shared object repository, a test object is added to the shared object repository when you insert the new step. After you add a new test object to the shared object repository, it is recommended to rename it, if its name does not clearly indicate its use. For example, you may want to rename a test object named **Edit** (that is used for entering a username) to **UserName**. This will enable Subject Matter Experts to select the appropriate test object when adding steps using test objects located in this shared object repository.

If you are adding a container test object, it is also recommended to specify its context, for example, if you are adding a confirmation message box from a Login page, you may want to name it **Login > Confirm**. For more information, see “Modifying Test Object Names” on page 34.

Selecting the Operation Item

If your business component references a function library that contains at least one user-defined function, or if it is based on an application area that references a function library file, you can select the **Operation** item and select a function for the step.

User-defined functions enable you to perform a variety of additional operations, for example, open an application at the start of a business component or check the value of a specific property.

Note: If your component or the application area on which it is based are not associated with any function library files, the **Operation** option does not appear in the **Item** list.

To select an Operation item:

- 1** Click in the **Item** cell, then click the arrow button to display the **Item** list. If you have just entered a new step, the list is displayed automatically as soon as you create the new step.
- 2** In the **Item** list, choose **Operation**. The **Operation** item is displayed in the **Item** cell. You now need to specify an operation for the step. For more information, see “Selecting the Operation for Your Step” on page 67.

Note: If the associated function library is no longer valid, for example, if the user-defined function was removed from the function library or if another function library is now associated with the component, an error message displays and **Operation** is removed from the **Item** list. You can check which function library files are not valid using the Resources tab of the Business Component Settings dialog box. For more information, see “Defining Resources for Your Component or Application Area” on page 101.

Selecting the Operation for Your Step

The **Operation** cell specifies the action to be performed on the item listed in the **Item** column. The available operations vary according to the item selected in the **Item** column. Only the most commonly used operations are listed. For example, if you selected a browser test object, such as a WebButton object, the list contains the most commonly used methods available for the button object, such as **Click**. If you selected **Operation** in the **Item** column, the list contains the user-defined function(s) defined in the function library file(s) associated with the business component.

You specify function library files in the Resources tab of the Application Area Settings dialog box when you create the application area. If you want to associate a function library file with a specific business component, you can add the file to the Resources tab in the Business Component Settings dialog box. For more information, see “Defining Resources for Your Component or Application Area” on page 101.

To select an operation for the step:

Click in the **Operation** cell, then click the arrow button and select the operation to be performed on the item. The operation can be either a standard operation or a user-defined function. For more information on user-defined functions, see “Working with User-Defined Functions” on page 109.

Note: When you position the cursor over an operation in the list, a tooltip describes the action that this operation performs. For user-defined functions, the tooltip is taken from the description that you provided in the associated function library file. For more information, see “Documenting the Function” on page 121.




If you selected a test object in the **Item** column, the default operation (most commonly-used operation) for the test object item is automatically displayed in the **Operation** column. The **Operation** list for that test object includes out-of-the-box operations and any user-defined functions that were registered to that specific test object type.


If you selected **Operation** in the **Item** column, QuickTest displays the functions that you defined in the function library file, alphabetically. (You manage the function library files for components in the **Resources** tab of the Application Area Settings dialog box or the Business Component Settings dialog box (if defined only for this component). For more information, see “Defining Resources for Your Component or Application Area” on page 101.

Defining Values for Your Step Arguments

The **Value** cell lists the value(s) for the operation argument(s). You can insert a constant value or a parameter. If you insert a parameter, it can be either a local parameter or a component parameter. For more information, see “Working with Parameters” on page 73 and “Defining Parameters for Your Component” on page 103.

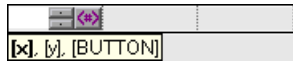
The **Value** cell is partitioned according to the number of possible arguments of the selected operation. Each partition contains different options, depending on the type of argument that can be entered in the partition, as follows:

Argument Partition	Argument Type	Instructions
	String	Enables you to enter any alphanumeric string enclosed by quotes. If you do not enter the quotes, QuickTest adds them automatically. If you modify a cell that contains a string enclosed by quotes by removing the quotes, QuickTest will not restore the quotes.
	Integer	Enables you to enter any number, or use the up and down arrows to select a number.
	Boolean	Enables you to select a True or False value from the drop-down list.

You can parameterize the value for an argument, using a local or component parameter, by clicking the  button in the required **Value** cell. For information on parameterizing a local value, see “Working with Parameters” on page 73. For information on parameterizing a component value, see “Defining Parameters for Your Component” on page 103.

To define or modify a value:

Click in each partition of the **Value** cell and enter the argument values for the selected operation. Note that when you click in the **Value** cell, a tooltip displays information for each argument. In the tooltip, the argument for the partition that is currently highlighted is displayed in bold, and any optional arguments are enclosed in square brackets.



Defining an Output Value for Your Step

You define the output type and settings for the output value in the **Output** cell. These determine where the output value is stored and how it is used during the component run session. When the output value step is reached, QuickTest retrieves each value selected for output and stores it in the specified location for use later in the run session.


When you create a new output value step, QuickTest assigns a default definition to each value selected for output. When you output a value for a step in a business component:

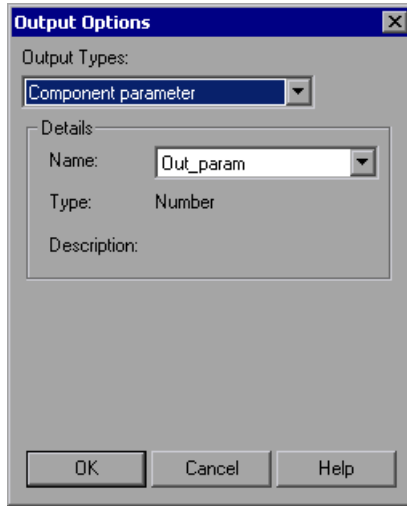
- if at least one output component parameter is defined in the component, the default output type is **Component parameter** and the default output name is the first output parameter displayed in the Parameters tab of the Business Component Settings dialog box.
- if no output component parameter is defined in the component, the default output type is **Local parameter** and the default name is **p_Local**.

You modify the output parameter, as required. If you select a local parameter, you can modify it directly in the Output Options dialog box. If you select a component parameter, the details for the output parameter are read-only. You can modify the parameter details in the Parameters tab of the Business Component Settings dialog box. For more information, see “Defining Parameters for Your Component” on page 103.

If, after you specify an output value, you choose not to save the output value, you can cancel it. For more information, see “Canceling Output to a Parameter” on page 72.

To configure output to a parameter:

- 1 Click in the **Output** cell to create or edit an output to a parameter. Click the **Output** button  or press CTRL + F11. The Output Options dialog box opens.



- 2 In the **Output Types** box, select either **Component parameter** or **Local parameter**. The **Details** area displays the options available for the selected component type.

Note: The **Component parameter** type is available only if an output component parameter is defined for the component. If you select a component parameter, the information displayed is read-only. For more information, see “Defining Parameters for Your Component” on page 103.

- 3 Select the required parameter from the **Name** box. If no local parameter is defined, then **p_Local** is the default parameter name displayed.
 - ▶ You can create a new local parameter, if needed. For more information, see “Working with Parameters” on page 73.
 - ▶ If you select a local parameter, specify the details for it. For more information, see “Working with Parameters” on page 73.
 - ▶ If you select a component parameter, its details are read-only.
- 4 Click **OK**. The **Output** cell displays the parameter to which the output value will be saved.

Tip: If you click in the **Output** cell after you specify an output parameter for it, an icon specifying the type of parameter is displayed in the cell:



Indicates a component parameter.




Indicates a local parameter.

Canceling Output to a Parameter

If you do not want to store the output value for a component step, you can cancel it.

To cancel output to a parameter:

Click in the **Output** cell. Then click the **Cancel** button  or press DELETE to cancel output to the parameter.

Working with Parameters

You can define input parameters that pass values into your business component and output parameters that pass values from your component to external sources or from one step to another step. You can then use these parameters to parameterize input and output values in steps.

You can define two types of parameters—*local parameters* and *component parameters*.

Local parameter—A local parameter is defined for a specific business component. It is not accessible by other business components. You define local parameters in the Business Component Keyword View using the Configure Value Options dialog box for input parameters and the Output Options dialog box for output parameters. You cannot delete local parameters, but you can cancel the input or output to them.

Component parameter—A component parameter is a parameter that may be used by multiple business components. You define component parameters in the Parameters tab of the Business Component Settings dialog box or in the Quality Center Business Components module.


This section describes how to configure local parameters and parameterize input and output values using local and component parameters. For information on configuring component parameters, see “Defining Parameters for Your Component” on page 103.

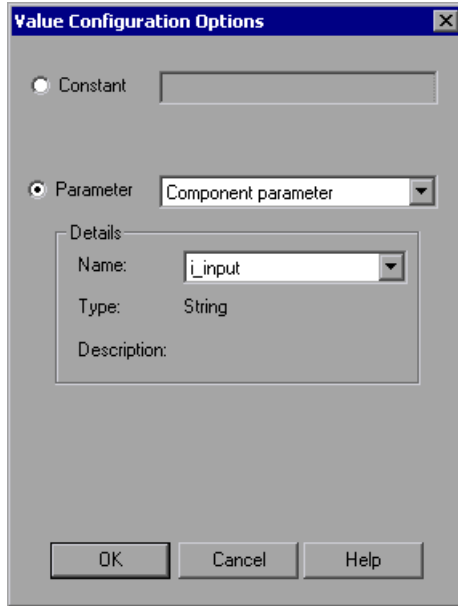
After you define a parameter you can use it to parameterize a value. Alternatively, you can apply a constant value to the parameter by typing it directly in the **Value** cell.

Parameterizing Input Values

In the **Value** cell, you can parameterize input values for a step using local or component parameters.

To parameterize an input value using a local parameter:

- 1 In the **Value** cell, click the parameterization button  or press CTRL + F11. The Value Configuration Options dialog box opens.



Note: If at least one input component parameter is defined in the component, the default input type is **Component parameter** and the default input name is the first output parameter displayed in the Parameters tab of the Business Component Settings dialog box.

- 2** In the **Parameter** box, select **Local parameter**. The details for the local parameter type are displayed.


The screenshot shows a dialog box titled 'Parameter' with a radio button selected for 'Local Parameter'. Below this, there is a 'Details' section with four fields: 'Name' (a dropdown menu showing 'p_Text'), 'Value' (an empty text box), and 'Description' (an empty text box).

- 3** Specify the property details for the local parameter:
- **Name**—Enter a meaningful name for the parameter or choose one from the list.
 - **Value**—Enter an input value for the parameter. If you do not specify a value, QuickTest assigns a default value, as follows:

Value Type	QuickTest Default Value
String	Empty string
Boolean	True
Date	The current date
Number	0
Password	Empty string

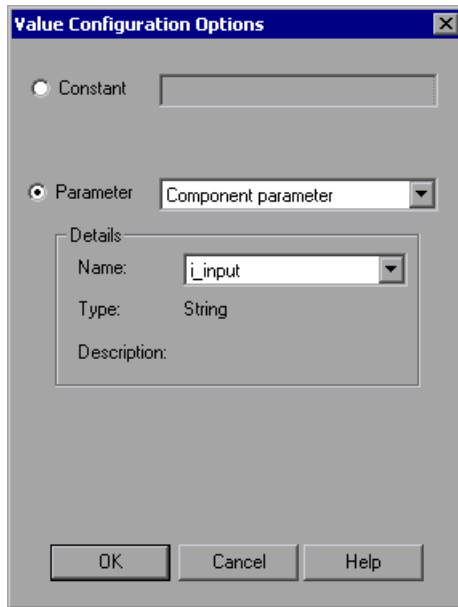
- **Description**—Enter a brief description for the parameter.
- 4** Click **OK**. The local parameter is displayed in the **Value** cell of your step. When the component is run, it will use the value specified in the parameter for the step.

Tips: You can cancel the parameterization of a value by selecting the **Constant** option in the Value Configuration Options dialog box and entering a constant value.

If you click in the **Value** cell after you define a local parameter for it, the  icon is displayed in each part of the cell for which a local parameter is defined.

To parameterize an input value using a component parameter:

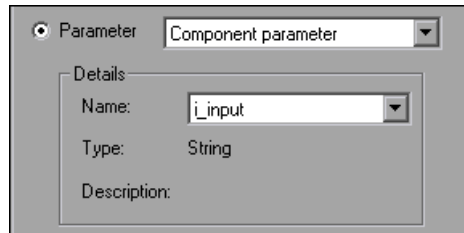
- 1 In the **Value** cell, click the parameterization button  or press CTRL + F11. The Value Configuration Options dialog box opens.



Note: If at least one input component parameter is defined in the component, the default input type is **Component parameter** and the default input name is the first output parameter displayed in the Parameters tab of the Business Component Settings dialog box.


If no component parameter is defined, you must define one before you can use it to parameterize an input value. For more information, see “Defining Parameters for Your Component” on page 103.

- 2** In the **Name** box, select the component parameter you want to use for the parameterized value. The details for the component parameter are displayed as read-only.



- 3** Click **OK**. The component parameter is displayed in the **Value** cell of your step. When the component is run, it will use the value specified in the parameter for the step.
-


Tips: You can cancel the parameterization of a value by selecting the **Constant** option in the Value Configuration Options dialog box and entering a constant value.

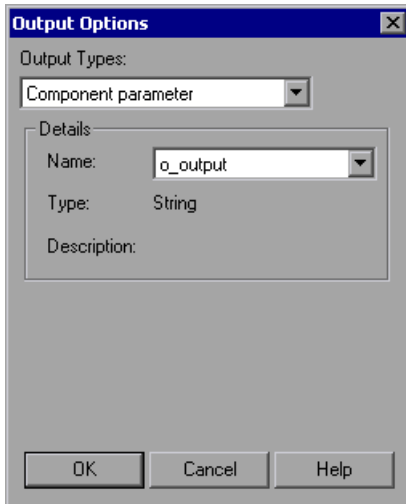
If you click in the **Value** cell after you define a component parameter for it, the  icon is displayed in each part of the cell for which a component parameter is defined.

Parameterizing Output Values

You can parameterize output values for a step using local or component parameters, in the step **Output** cell. You can then use the output parameter value as an input value in a later step in the component, or in a later component in the business process test.

To parameterize an output value using a local parameter:

- 1 In the **Output** cell, click the output value button  or press CTRL + F11. The Output Options dialog box opens.




Note: If at least one output component parameter is defined in the component, the default output type is **Component parameter** and the default output name is the first output parameter displayed in the Parameters tab of the Business Component Settings dialog box.

- 2 In the **Output Types** box, select **Local parameter**. The details for the local parameter type are displayed.




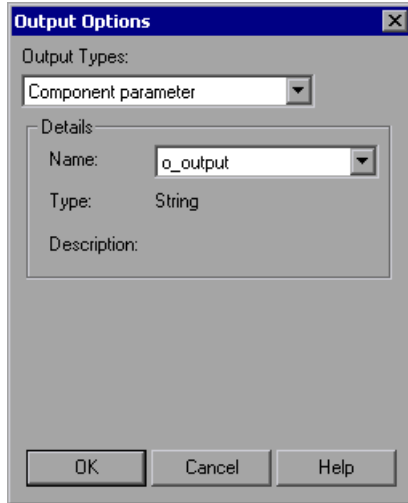
The image shows a dialog box titled "Details" with two input fields. The first field is labeled "Name:" and contains the text "p_Local". The second field is labeled "Description:" and is currently empty.

- 3 Specify the property details for the local parameter:
 - **Name**—Enter a meaningful name for the parameter or choose one from the list.
 - **Description**—Enter a brief description for the parameter.
- 4 Click **OK**. The local parameter is displayed in the **Output** cell of your step. When the component is run, it will output the value to the output parameter specified for the step.

Tip: If you click in the **Output** cell after you define a local parameter for it, the  icon is displayed in each part of the cell for which a local parameter is defined.

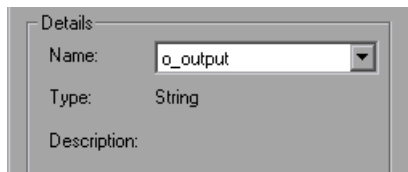
To parameterize an output value using a component parameter:

- 1 In the **Output** cell, click the output value button  or press CTRL + F11. The Output Options dialog box opens.




Note: If at least one output component parameter is defined in the component, the default output type is **Component parameter** and the default output name is the first output parameter displayed in the Parameters tab of the Business Component Settings dialog box. If no component parameter is defined, you must define one before you can use it to parameterize an output value. For more information, see “Defining Parameters for Your Component” on page 103.


- 2 In the **Name** box, select the component parameter in which to store the output value. The details for the component parameter are displayed as read-only.



- 3 Click **OK**. The component parameter is displayed in the **Output** cell of your step. When the component is run, it will output the value to the output parameter specified for the step.

Tip: If you click in the **Value** cell after you define a local parameter for it, the  icon is displayed in each part of the cell for which a local parameter is defined.

Working with Comments

A **Comment** is a free text entry that can be entered in a business component. The  icon indicates a comment in the Keyword View. You can use comments for several purposes. For example, you may want to plan steps to be included in a business component before your application is ready to be tested. Then, when your application is ready to be tested, you can use your plan to verify that every item that needs to be tested is included in the component steps.

You may want to add comments to a business component to improve readability and make it easier to update. For example, you may want to add a comment before each section of a component to specify what that section includes.

You may also want to use the **Comment** option to add notes to your application area. For example, you may want to add a suggestion that will be displayed in the Steps tab when the Subject Matter Expert creates a new business component based on a specific application area, or you may want to make notes to yourself about tasks to do.


After you add a comment, it is always visible in your component, as long as one or more columns are displayed. For information on selecting columns to display, see “Setting Keyword View Display Options” on page 19. In addition, as you scroll from side to side across the grid, the comment can always be seen. QuickTest does not process comments when it runs a business component.

Note: After you insert a comment, you cannot change it to a step.

To add a comment to your component:

- 1** Choose **Insert > Comment**, click in the **Item** cell and choose **Comment** from the displayed list, or right-click on a component step and select **Insert Comment**. A comment row is added below the selected step.
- 2** Enter text in the Comment row. If you do not enter text, QuickTest deletes the comment when the cursor focus is removed.

To modify an existing comment:

Double-click the comment. The text box becomes a free text field. Alternatively, you can click the  icon, which acts as a toggle, making the comment either editable or read-only.

To delete a comment:

- 1** Select the comment and choose **Edit > Delete**, press the DELETE key on your keyboard, or right-click and select **Delete** from the context-sensitive menu.
- 2** Click **Delete Comment** to confirm. The comment is permanently removed from the business component.

Managing Component Steps

You can move a component step before or after any other step or comment in your component. You can also delete it if it is no longer required.

Moving a Component Step

You can move a step to a different location within a component.

To move a step in the component:

- ▶ In the **Item** column, drag the step up or down and drop it at the required location.
- ▶ Copy or cut the step to the Clipboard and then paste it in the required location. You can use **Edit > Copy** or CTRL + C to copy the step, and **Edit > Cut** or CTRL + X to cut the step, and **Edit > Paste** or CTRL + V to paste the step.

Deleting a Component Step

You can delete a component step, if required. Before you delete a step, make sure that removing it will not prevent the component from running correctly.

Note: You cannot delete a step if one of its cells is in edit mode.

To delete a step:

- 1** Select the step that you want to delete and choose **Edit > Delete**, press the DELETE key, or right-click on the step and select **Delete** from the context-sensitive menu. A warning message displays.
- 2** Click **Delete Step** to confirm. The step is deleted from the component.

7

Defining Business Component and Application Area Settings

You can define specific settings for an individual component or for an application area. Settings defined for an application area are automatically copied to any component based on that application area.

This chapter describes:

- ▶ About Working with Business Component and Application Area Settings
- ▶ Accessing the Settings Dialog Boxes
- ▶ Defining Properties for Your Component or Application Area
- ▶ Defining a Snapshot for Your Component
- ▶ Defining Application Settings for Your Component or Application Area
- ▶ Defining Resources for Your Component or Application Area
- ▶ Defining Parameters for Your Component
- ▶ Defining Recovery Scenario Settings for Your Component or Application Area

About Working with Business Component and Application Area Settings

Before you create or debug a business component, you can use the Business Component Settings dialog box to modify your options for the specific component. You can also define settings for an application area using the Application Area Settings dialog box. When you (or a Subject Matter Expert) create a new component, the component automatically inherits the settings defined in the application area on which it is based.

When you create a new component, the Business Component Settings dialog box displays the settings that were defined for the application area on which the component is based. Any settings that you define locally in the Business Component Settings dialog box override the settings inherited by the component from its application area. For example, if the **MyRepository.tsr** shared object repository was defined in the application area on which the component is based, and you select a different shared object repository (for example, **ForComponent.tsr**) for the specific component, the business component will access the **ForComponent.tsr** shared object repository. This enables you to customize specific business components, if needed.

Note: If resources are used in component steps, and you later modify these resources (either for a specific component or for the application area on which the component is based), your component may not run correctly. For example, if a component uses test objects from the **MyRepository.tsr** shared object repository, and you change the shared object repository by choosing **ForComponent.tsr**, the component will not be able to access the required test objects because they are located in a different shared object repository.

If you modify resources for an application area, it is recommended to notify the Subject Matter Experts working with components based on the application area to update their components with the latest changes. For more information, refer to the *Business Process Testing User's Guide*.

Accessing the Settings Dialog Boxes

The Business Component Settings dialog box and the Application Area Settings dialog box enable you to define specific options for a component or application area.

The Business Component Settings dialog box and the Application Area Settings dialog box are similar. Any differences are pointed out in the relevant sections in this chapter.

To open the relevant Settings dialog box:

- 1 Open the component or application area whose settings you want to define.
- 2 Choose **Component > Settings** or **Application Area > Settings**, or click the **Business Component Settings** or **Application Area Settings** toolbar button. The Business Component Settings dialog box or Application Area Settings dialog box opens. It is divided by subject into tabbed pages.



Business Component Settings

Properties | Snapshot | Applications | Resources | Parameters | Recovery

Name: CreateOrder
 Author: mercury
 Application Area: FlightReservationModule
 Location: [QualityCenter] Components\Flight components\CreateOrder
 Description: This component orders a flight.

Associated add-ins:
 ActiveX
 Web

Modify...

Business component status: Under Development

Allow iterations

OK Cancel Apply Help

- 3 Select the required tab and set the options as necessary. See the table below for more information on the available options in each tab.
- 4 Click **Apply** to apply your changes and keep the dialog box open, or click **OK** to save your changes and close the dialog box.

Note: If you close the Application Area Settings dialog box before you select a shared object repository in the Resources tab, a message box opens asking you to select a shared object repository for the application area. It is strongly recommended that you use a different shared object repository for each application area (and not use the default shared object repository provided with QuickTest).

The Business Component Settings dialog box and the Application Area Settings dialog box contain the following tabbed pages:

Tab Heading	Tab Contents
Properties	Options for setting the properties of the component, for example, its description and associated add-ins. For more information, see “Defining Properties for Your Component or Application Area” on page 90.
Snapshot	Options for capturing a snapshot image to be saved with the component for display in Quality Center. This tab is not available for application areas. For more information, see “Defining a Snapshot for Your Component” on page 96.
Applications	Options for specifying the Windows-based applications on which the component can record and run. For more information, see “Defining Application Settings for Your Component or Application Area” on page 98.

Tab Heading	Tab Contents
Resources	Options for specifying resources you want to associate with your component, including the location of any function library files and the shared object repository to use with your component. For more information, see “Defining Resources for Your Component or Application Area” on page 101.
Parameters	Options for specifying input and output parameters for your component. This tab is not available for application areas. For more information, see “Defining Parameters for Your Component” on page 103.
Recovery	Options for setting how your component recovers from unexpected events and errors that occur in your testing environment during a run session. For more information, see “Defining Recovery Scenario Settings for Your Component or Application Area” on page 106.

In addition to these tabs, the Business Component Settings dialog box or Application Area Settings dialog box may contain additional tabs for scripted components. There may also be other tabs corresponding to any built-in or external add-ins that are loaded, for example, Web or SAP. For information on tabs related to built-in add-ins, refer to the *QuickTest Professional User's Guide*. For information on tabs related to external add-ins, refer to the relevant QuickTest add-in documentation.

Defining Properties for Your Component or Application Area

You can use the Properties tab to view and define general information about your component or application area, including its description and any add-ins associated with it. For an application area, it is important to include a clear description because the name and description are the only indications that a Subject Matter Expert has when determining which application area to choose for a specific business component. For a component, you can also set its status, and you can choose whether iterations can be specified for it in Quality Center.

The screenshot shows a 'Properties' dialog box with the following fields and values:

- Name:** Login_FindFlight
- Author:** mercury
- Application Area:** Log In
- Location:** [QualityCenter] Components\Flight components\Login_FindFlight
- Description:** Log in to Mercury Tours
- Associated add-ins:** ActiveX, Visual Basic, Web
- Business component status:** Under Development
- Allow iterations**

The Properties tab includes the following items:

Option	Description
Name	Indicates the name of the component or application area. You assign a name to the component or application area when you save it.
Author	Indicates the Quality Center user name of the person who created the component or application area.

Option	Description
<p>Application Area</p>	<p>Indicates the name of the application area on which the component is based. This option is not displayed for application areas. For more information, see “Creating a New Business Component,” on page 43.</p> <p>Note: If no application area is available, this is indicated by Not selected. Before business component steps can be implemented, an application area must be selected.</p>
<p>Location</p>	<p>Indicates the Quality Center path and filename of the component or application area. If the component or application area is not yet saved, the location indicates Not saved.</p>
<p>Description</p>	<p>Indicates the description specified for your component or application area.</p> <p>For business components, this field is read-only and can be modified only in Quality Center.</p> <p>For application areas, this field is mandatory and it is important that it includes a clear description of the application area. This is because the Subject Matter Expert decides which application area to choose when creating a new component in Quality Center based on the Name and Description of the application area. For more information, refer to the <i>Business Process Testing User's Guide</i>.</p> <p>You can update the description, as needed. For example, if you created an application area but have not finished defining it, you can note this in the Description area. Later, after you finalize the application area, you can update the Description. Then, you can notify the Subject Matter Experts to update the application area associated with their components with the latest changes. For information on how to update the application area for a business component in Quality Center, refer to the <i>Business Process Testing User's Guide</i>.</p> <p>Note: For an application area, if you do not enter a description here in the Properties tab, you are prompted to do so when saving the application area. For more information, see “Saving an Application Area” on page 35.</p>

Option	Description
Associated add-ins	Displays the add-ins associated with the component or application area. The associated add-ins are those that are loaded by business components when they are accessed. For more information, see “Associating Add-ins with Your Component” on page 94.
Modify	Enables you to select the add-ins to associate with your component or application area. For more information, see “Modifying Associated Add-Ins” on page 95.
Business Component Status	Specifies the status of the component. You can change the status of the component by selecting a different option from the list. This option is not displayed for application areas. For more information about status options, see “Understanding Component Statuses”, below.
Allow iterations	<p>Controls whether iterations can be specified for this component in a Quality Center business process test. This option is not displayed for application areas.</p> <p>Component iterations are defined in Quality Center, using the Details tab in the Business Components module. However, some components may not be designed for multiple iterations, if the last step in the component does not end at the same point in the application as the first step.</p> <p>In such cases, you can clear the Allow iterations check box to prevent iterations from being allowed for the component in Quality Center.</p> <p>This option can also be modified directly in Quality Center by the Subject Matter Expert.</p>

Understanding Component Statuses

Business components can be assigned statuses either in QuickTest or in Quality Center. A business component status can either be manually specified, or in certain cases may be automatically assigned by Quality Center. For example, you can use a **Ready** status to indicate that a business component is ready to be run in a business process test, or a component that has errors that prevent it being successfully run in a business process test may automatically be assigned an **Error** status.

Knowing the status of a business component is important because it affects the status of any business process tests of which it is a part. In general, the component with the most severe status determines the status of the business process test. For example, a business component with an Error status causes any business process test of which it is a part to have an Error status.

A component can be assigned one of the following statuses:

- ▶ **Error**—The component contains errors that need to be fixed, for example, due to a change in the application. When a business process test contains a component with this status, the status of the entire business process test is also **Error**.
- ▶ **Maintenance**—The component is currently being developed and tested and is not yet ready to run, or it was previously implemented and is now being modified to adapt it for changes that have been made in the application.
- ▶ **Ready**—The component is fully implemented and ready to be run. It answers the requirements specified for it and has been tested according to the criteria defined for your specific system.
- ▶ **Under Development**—The component is currently under development. This status is initially assigned to:
 - ▶ New components created in the Business Components module of Quality Center with Business Process Testing support.
 - ▶ Component requests dragged into the component tree in Quality Center with Business Process Testing support.

Associating Add-ins with Your Component

When you open QuickTest, you can select the add-ins to load from the Add-in Manager dialog box. You can record on any environment for which the necessary add-in is loaded.

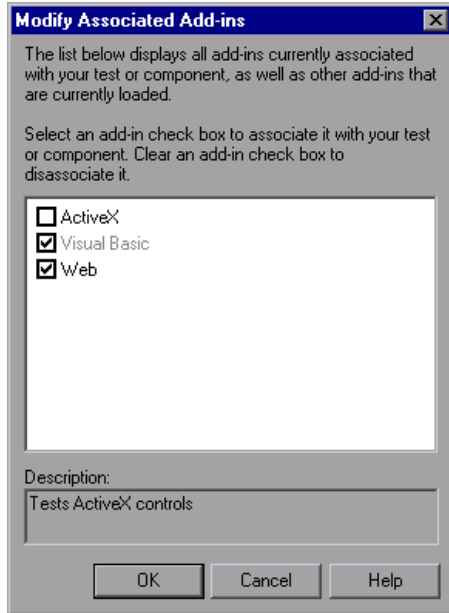
Choosing to associate an add-in with your component (using the Application Area Settings dialog box or the Business Component Settings dialog box) instructs QuickTest to check that the associated add-in is loaded each time you open that component. When you create a new component, the default associated add-ins are those defined in the application area on which the component is based.

When you open a component, QuickTest notifies you if an associated add-in is not currently loaded, or if you have loaded add-ins that are not currently associated with your component. This process ensures that your run session will not fail due to unloaded add-ins and reminds you to add required add-ins to the associated add-ins list if you plan to use them with the currently open component.

When a Subject Matter Expert opens a business process test in Quality Center, the QuickTest Professional add-ins that are associated with the first component in the business process test are loaded automatically. Add-ins associated with other components in the business process test are not loaded. Therefore, it is important to ensure that all required QuickTest add-ins are associated with the first component in the business process test.

Modifying Associated Add-Ins

You can associate or disassociate add-ins with your component in the Modify Associated Add-ins dialog box.



This dialog box lists all the add-ins currently associated with your component, as well as any other add-ins that are currently loaded in QuickTest. Add-ins that are associated with your component but not currently loaded are shown dimmed.

You can select the check boxes for add-ins that you want to associate with your component, or clear the check boxes for add-ins that you do not want to associate with your component.

In the above example:

- ▶ Web is loaded and associated with the component.
- ▶ ActiveX is loaded, but not associated with the component.
- ▶ Visual Basic is associated with the component, but is not loaded.

Note: If a specific add-in is not currently loaded, but you want to associate it with your component, reopen QuickTest and load the add-in from the Add-in Manager. If the Add-in Manager dialog box is not displayed when you open QuickTest, you can choose to display it the next time you open QuickTest. To do so, select **Display Add-in Manager on startup** from the General tab of the Options dialog box. For more information, refer to the *QuickTest Professional User's Guide*.

Defining a Snapshot for Your Component

The Snapshot tab of the Business Component Settings dialog box enables you to capture an image and save it with the component. This image is displayed in the business process test in Quality Center and provides a visual indication to the Subject Matter Expert of the main purpose of the component. The Snapshot options are not available for application areas.

Credit Card

Card Type: **Discover** Number: Expiration: **None**

First Name: Middle: Last:

Billing Address

Address:

City:

Change snapshot

Capture snapshot from application Load from file

Capture Snapshot

Note: The snapshot image can also be captured and saved with the component from the Snapshot tab in Quality Center when installed with Business Process Testing support.

For information about capturing a snapshot for a component in Quality Center, refer to the *Business Process Testing User's Guide*.

The Snapshot tab contains the following options:

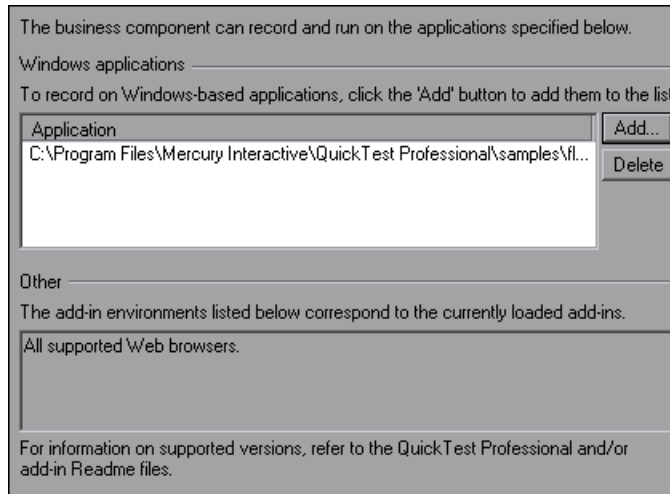
Option	Description
Capture snapshot from application	Enables you to define the image to be captured by clicking the Capture Snapshot button. You can then drag the crosshairs pointer to select the area to be captured. When you release the mouse button, the captured area is displayed in the Snapshot pane.
Load from file	Specifies the .png or .bmp file containing the required image. You can enter the path and filename or use the browse button to locate the file.

When you click **Apply** or **OK**, the image is saved with the component and is displayed in the business process tests containing this component in Quality Center.

Defining Application Settings for Your Component or Application Area

In the Applications tab, you can specify the Windows-based applications on which the component (or components based on the current application area) can record and run. You can record steps only on the specified applications.

You can also view the environments on which the component can currently record (based on the currently loaded add-ins).



Notes: If you are recording a new component and have not yet set your application settings in the Applications tab of the Business Component Settings dialog box, the Applications dialog box opens when you start to record. The Applications dialog box contains the same options as the Applications tab, described in this section.

The Applications dialog box and Applications tab may also contain options applicable to any QuickTest external add-ins installed on your computer. For information regarding these options, refer to the documentation provided with the specific add-in.

You can use the Applications tab to set or modify your application preferences in the following scenarios:

- ▶ You have already recorded one or more steps in the component and you want to modify the settings before you continue recording.
- ▶ You want to run the component on a different application than the one you previously used.

If you are recording a new component and have not yet set your application settings in the Applications tab of the Business Component Settings dialog box, the Applications dialog box opens with the same options as in the Applications tab. For more information on recording, refer to the *QuickTest Professional User's Guide*.

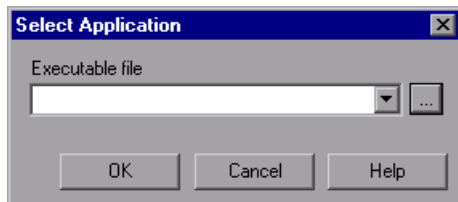
Note: To record on an application, you must open it manually. There are no settings available for automatically opening applications for components.

The following options are available in the Applications dialog box and the Applications tab:

Option	Description
Application	Lists the applications on which to record the component. If you do not want to record on any Windows application, leave the Application area blank. (This is the default setting.) You can manually add standard Windows steps to your component and then run them, even if the Application area is left blank (or does not list the application for which you want to add a step).
Add	Adds an application to the application list. You can add up to ten applications. For more information, see “Specifying an Application for a Component”, below.
Delete	Removes the selected application from the Application area.

Specifying an Application for a Component

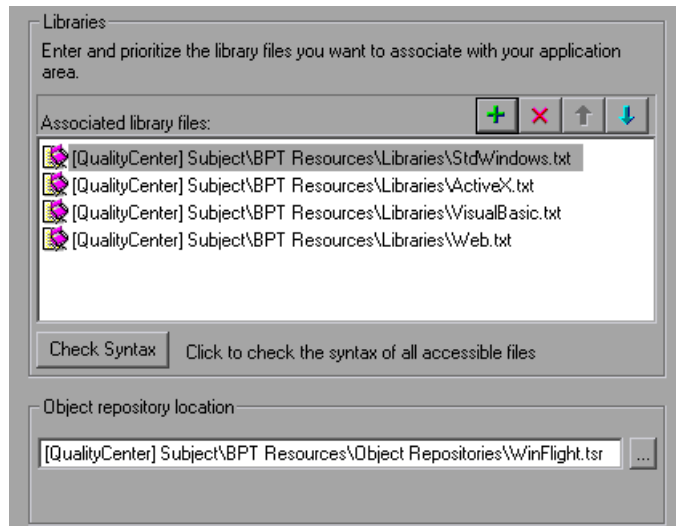
When you click **Add** in the Applications tab, the Select Application dialog box opens. You can specify the executable file on which you want QuickTest to record your component.



You can enter the path and filename of the executable file in the **Executable file** box, or click the browse button to locate the file.

Defining Resources for Your Component or Application Area

You can use the Resources tab to associate specific files with your component or application area, such as VBScript function library files. You can also specify the location of the shared object repository file to use for your component or application area. All specified resources files must be saved in your Quality Center project.



The Resources tab includes the following items:

Option Area	Description
Libraries	<p>Displays the list of library files currently associated with your component or application area and enables you to add, delete, and prioritize the files. You can associate only library files that are stored in your Quality Center project. For more information about function library files, see “Working with Associated Library Files” on page 127.</p> <p>Note: QuickTest provides you with sample library files containing pre-defined functions. These files are associated by default with all new components and application areas.</p>

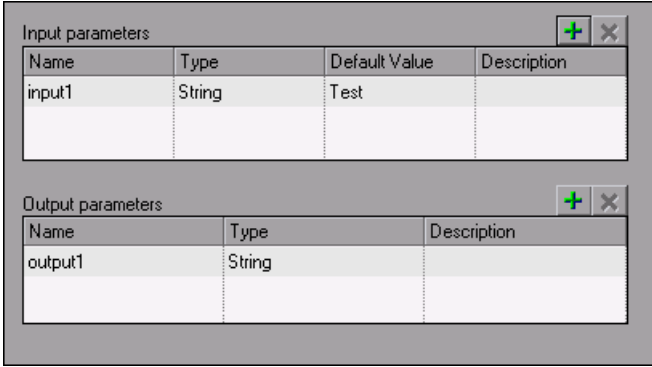
Option Area	Description
<p>Check Syntax</p>	<p>Verifies whether any of the associated library files contain syntax errors that will prevent the component from running properly. Click the Check Syntax button to check the files for syntax errors before finalizing the application area. If any syntax errors are found, a dialog box opens listing the files containing syntax errors. Otherwise, an information box opens confirming that the syntax in all of the library files is valid.</p> <p>Note: When you work with (or debug) a business component, if you choose an operation from an invalid function library, a warning message displays. You can verify which of the associated files has invalid syntax by clicking the Check Syntax button in the Resources tab of the Business Component Settings dialog box or Application Area Settings dialog box. For more information, see “Selecting the Operation for Your Step” on page 67.</p>
<p>Object repository location</p>	<p>Specifies the location of the shared object repository file to use with your component or application area. Components use shared object repository files stored in Quality Center.</p> <p>For each application area, it is strongly recommended to use a unique shared object repository—not the default shared object repository provided with QuickTest.</p> <p>Although QuickTest provides you with a default shared object repository (located in the Subject/BPT Resources/Object Repositories folder), it is strongly recommended not to use it. If you associate this default shared object repository with your application area or a specific component, any components using this shared object repository may not run correctly. To choose a different object repository file or create a new one, enter the full Quality Center path and filename or use the browse button to locate the file.</p>

Defining Parameters for Your Component

In the Parameters tab, you can define input component parameters that pass values into your component and output component parameters that pass values from your component to external sources. You can also use the Parameters tab to modify or delete existing component parameters. The Parameters options are not available for application areas.

Component parameters are parameters that can be used to parameterize input and output values in component steps. For information on using parameter values in component steps, see “Working with Parameters” on page 73.

The Subject Matter Expert can also define component parameters in Quality Center. For information, refer to the *Business Process Testing User’s Guide*.



The screenshot shows a window titled "Parameters" with two sections: "Input parameters" and "Output parameters". Each section contains a table with columns for Name, Type, Default Value, and Description. The "Input parameters" table has one row with Name "input1", Type "String", and Default Value "Test". The "Output parameters" table has one row with Name "output1" and Type "String". Both tables have a "+" button to add new parameters and an "X" button to delete existing ones.

Input parameters			
Name	Type	Default Value	Description
input1	String	Test	

Output parameters		
Name	Type	Description
output1	String	



The Parameters tab contains two parameter lists:

- **Input parameters**—Specifies the parameters that the component can receive values from the source that runs or calls it.
- **Output parameters**—Specifies the parameters that the component can pass to the source that runs or calls it.

You can edit an existing parameter by selecting it in the appropriate list and modifying its details (except for its name which cannot be modified).

Note: The input and output parameter lists can also be modified in the Quality Center Business Components module. For more information, refer to the *Business Process Testing User's Guide*.

You can add and remove input and output parameters for your business component using the following buttons:

Option	Description
	<p>Adds a parameter to the appropriate parameter list. Enter a name for the new parameter and select the parameter type. Possible value types: String, Boolean, Date, Number, or Password. You can enter a description for the parameter, for example, the purpose of the parameter in the component.</p> <p>If you are defining an input parameter, a default value for the specified parameter type is automatically entered. You can enter or modify a default value for the parameter in the Default Value column. For more information, see “Defining Default Values for Input Component Parameters”, below.</p>
	<p>Removes the selected parameter from the component.</p>

Defining Default Values for Input Component Parameters

When a business component runs, the actual values used for parameters are generally those sent by the application calling the component (either QuickTest or Quality Center) as described in the table below:

Business Component Called From:	Parameter Values Specified In:
QuickTest	Input Parameters tab of the Run dialog box. For more information, refer to the <i>QuickTest Professional User's Guide</i> .
Quality Center	Component Iterations dialog box (Test Plan module). For more information, refer to the <i>Business Process Testing User's Guide</i> .

If, when a component runs, a value is not supplied by QuickTest or Quality Center for one or more input parameters, QuickTest uses the default value for the parameter.

When you define a new parameter in the Parameters tab of the Business Components Settings dialog box, you can specify the default value for the parameter or you can keep the default value that QuickTest assigns for the specified parameter type as follows:

Value Type	QuickTest Default Value
String	Empty string
Boolean	True
Date	The current date
Number	0
Password	Empty string

Using Component Parameters in Steps

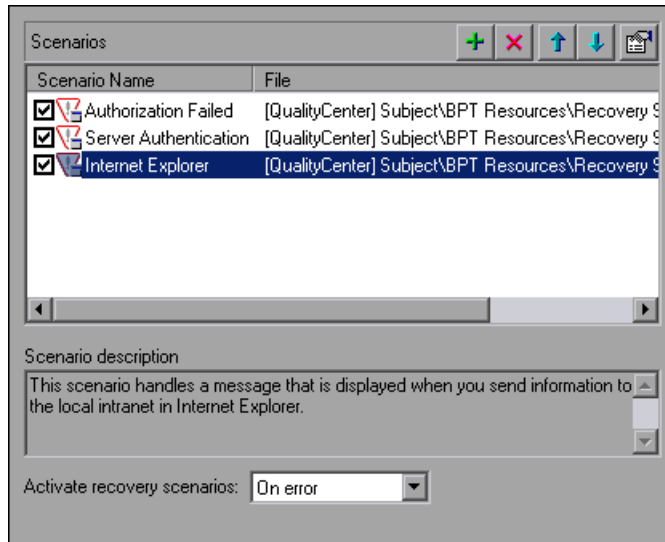
After you define component parameters, you can use them to parameterize values in the steps of your component by selecting input component parameters in the Value Configuration Options dialog box, or by selecting output component parameters in the Output Options dialog box. You can also use local parameters in steps. For more information on using component and local parameters in steps, see “Working with Parameters” on page 73.

Defining Recovery Scenario Settings for Your Component or Application Area

Recovery scenario settings enable you to specify how a business component recovers from unexpected events and errors during a run session. The Recovery tab displays a list of all recovery scenarios associated with the current component or application area. It also enables you to associate additional recovery scenarios with the component or application area, remove scenarios from the component or application area, change the order in which they are applied to the run session, and view a read-only summary of each scenario.

You can enable or disable specific scenarios or the entire recovery mechanism for the component.

You define recovery scenarios for components and application areas in exactly the same way as for tests. For more information about recovery scenarios, refer to the *QuickTest Professional User's Guide*.



The Recovery tab includes the following option areas:






Option Area	Description
Scenarios	Displays the name and recovery file path for each recovery scenario associated with your component or application area. You can add, delete, and prioritize the scenarios in the list, and you can edit the file path for a selected file. For more information, see “Specifying Associated Recovery Scenarios”, below.
Scenario description	Displays the textual description of the scenario selected in the Scenarios box.
Activate recovery scenarios	Instructs QuickTest to check whether to run the associated scenarios as follows: <ul style="list-style-type: none"> • On every step—The recovery mechanism is activated after every step. • On error—The recovery mechanism is activated only after steps that return an error return value. • Never—The recovery mechanism is disabled. <p>Note: Choosing On every step may result in slower performance during the run session.</p>

Specifying Associated Recovery Scenarios






You can select or clear the check box next to each scenario to enable or disable it for the current component or application area.

You can also edit the recovery scenario file path by clicking the path once to highlight it, and then clicking it again to enter edit mode. If you modify a recovery scenario file path, ensure that the recovery scenario exists in the new path location before running your component.

Scenario types are indicated by the following icons:

Icon	Description
	Indicates that the recovery scenario is triggered by a specific pop-up window in an open application during the run session.
	Indicates that the recovery scenario is triggered when the property values of an object in an application match specified values.
	Indicates that the recovery scenario is triggered when a step in the component does not run successfully.
	Indicates that the recovery scenario is triggered when a specified application fails during the run session.
	Indicates that the recovery scenario is no longer available for the component. This may be because the recovery file has been renamed or moved, or can no longer be accessed by QuickTest. When an associated recovery file is not available during a run session, a message is displayed in the results.

You can add, delete, and prioritize the recovery scenario files associated with your component using the following buttons:

Option	Description
	Opens the Add Recovery Scenario dialog box, which enables you to associate one or more recovery scenarios with the component. For more information, refer to the <i>QuickTest Professional User's Guide</i> .
	Removes the selected recovery scenario from the component.
	Moves the selected scenario up in the list, giving it a higher priority during the component run session.
	Moves the selected scenario down in the list, giving it a lower priority during the component run session.
	Displays summary properties for the selected recovery scenario in read-only format. For more information, refer to the <i>QuickTest Professional User's Guide</i> .

8

Working with User-Defined Functions

You can provide additional functionality for tests and components by making user-defined functions available to them. A user-defined function encapsulates activities or steps that require programming into operations (or keywords). These operations can then be used to enhance your test or component.

This chapter describes how to include additional functionality using the Function Definition Generator. For more information on registering and unregistering user-defined functions, refer to the *QuickTest Professional User's Guide*.

Note: The terms function, method, and operation are used interchangeably in this chapter. This is because in the Business Component Keyword View, functions and methods are known as operations, which is a more intuitive term for Subject Matter Experts.

This chapter describes:

- ▶ About Working with User-Defined Functions
- ▶ Using the Function Definition Generator
- ▶ Additional Tips for Working With User-Defined Functions
- ▶ Working with Associated Library Files

About Working with User-Defined Functions


You can provide additional functionality for tests and components by defining user-defined functions. This enables you and other users, such as Subject Matter Experts, to choose functions that perform complex operations, such as adding if/then statements and loops to test or component steps, or working with reserved objects—without needing any programming knowledge.

You can register a new function to a test object (or override an existing function) to enable it to be called by that test object. When you register a function to a test object, you can define it as the default operation for that test object, if required. If you choose not to define the function as the default operation for a test object, it will be listed alphabetically within the list of available operations for that test object.

If you choose not to register a function to a test object, it becomes a global function. Global functions can be called by selecting the **Functions** category in the Step Generator (for tests), or the **Operation** item in the Keyword View (for components).

You can make a function available only within a specific action in a test by defining it in that action using the Expert View. Alternatively, you can make the function available to multiple tests or components by defining it in a function library file. Any text file written in standard VBScript syntax can act as a library file.

After you add the function to a library file, you store the file in your file system (for tests), or in your Quality Center project (for tests or components), and associate the file with a test, application area, or specific component using the Resources tab of the Test Settings dialog box, Business Component Settings dialog box, or Application Area Settings dialog box (whichever is relevant). For more information, see “Working with Associated Library Files” on page 127. As long as the test or component can access these user-defined functions, these functions can be seen and used in the Step Generator (for tests), and the **Operation** column in the Keyword View (for components).

Note: If a test or component can no longer access a function that was used in a step (for example, if the function was deleted from the associated library file), the  icon is displayed adjacent to the step in the Keyword View. When you run the test, component, or business process test, an error will occur when it reaches the step using the non-existent function.

You can define functions manually in an editor or using the QuickTest Function Definition Generator, which creates the basic function definition for you automatically. Even if you prefer to define functions directly in an editor or in the Expert View, you may still want to use the Function Definition Generator to view the syntax required to add header information, register a function to a test object, or set the function as the default method for the test object.

For more information about defining user-defined functions manually, refer to the *QuickTest Professional User's Guide*. For more information on using the Function Definition Generator to create a user-defined function, see “Using the Function Definition Generator” on page 112.

Using the Function Definition Generator

QuickTest provides a Function Definition Generator, which enables you to generate definitions for new user-defined functions and add header information to them. You can also use the Function Definition Generator to register a function to a test object. You fill in the required information and the Function Definition Generator creates the basic function definition for you. You can then copy the definition to a library file and associate it with your test or component, or you can copy the definition directly to a test script in the Expert View. You can complete the function by adding its content (code).

Note: If you paste the function directly in the Expert View, the test will be able to access the function anywhere within the specific action. For more information, refer to the *QuickTest Professional User's Guide*.

You can register the function to a test object. This enables it to be called by that test object, and displays it in the list of available operations for that test object in the Step Generator (for tests), and in the Keyword View (for components). If you do not register the function to a test object, it becomes a global operation and is displayed in the list of operations in the **Operation** box in the Step Generator, and in the **Operation** list when the **Operation** item is selected in the Keyword View. If you register a function, you can define it as the default operation that is displayed in the Step Generator or the Keyword View when the test object to which it is registered is selected.

Finally, you can document your user-defined function by defining the tooltip that displays when the cursor is positioned over the operation in the Step Generator (for tests), or in the Keyword View (for tests or components). You can also add a sentence that describes what the step that includes the user-defined function actually does. This sentence is then displayed in the **Step documentation** box of the Step Generator, and in the **Documentation** column of the Keyword View.

As you add information to the Function Definition Generator, the **Preview** area displays the emerging function definition. After you finish defining the function, you can copy the definition to an associated library file, enabling it to be accessed by multiple tests or components, or you can paste it directly in a test in the Expert View. You can then add the content (code) of the function.

The following section provides an overview of the steps you perform when using the Function Definition Generator to create a function.

To use the Function Definition Generator:

- 1** Open the Function Definition Generator, as described in “Opening the Function Definition Generator” on page 114.
- 2** Define the function and its arguments, as described in “Defining the Function and Its Arguments” on page 115.
- 3** Register the function to a test object, if needed. By default, functions that are not registered to a test object are automatically defined as global functions that can be called by selecting the **Functions** category in the Step Generator, or the **Operation** item in the Keyword View. Note that if you register the function to a test object, you can also define the function (operation) as the default operation for that selected test object. See “Registering a Function” on page 118.
- 4** Document the function by adding header information to it, as described in “Documenting the Function” on page 121.
- 5** Preview the function before finalizing it, as described in “Previewing the Function” on page 123.
- 6** Finalize the function by copying it to an associated library file or to a test using the Expert View, and adding content to the function, as described in “Finalizing the User-Defined Function” on page 123.

Note: Each of the steps listed in this section assumes that you have performed the previous steps.

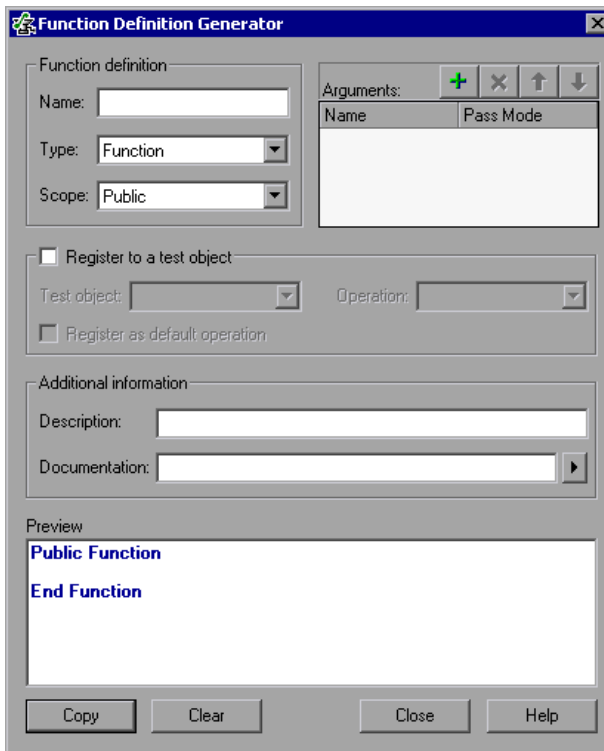
Opening the Function Definition Generator

You can open the Function Definition Generator from the **Start** menu or from your QuickTest installation folder. You do not need to open QuickTest to work with the Function Definition Generator.

Note: If you are planning to register functions, before you open the Function Definition Generator for the first time, make sure that you open QuickTest at least once. This enables the Function Definition Generator to access all of the test objects and their operations.

To open the Function Definition Generator:

From the **Start** menu, choose **QuickTest Professional > Tools > Function Definition Generator**. The Function Definition Generator opens.

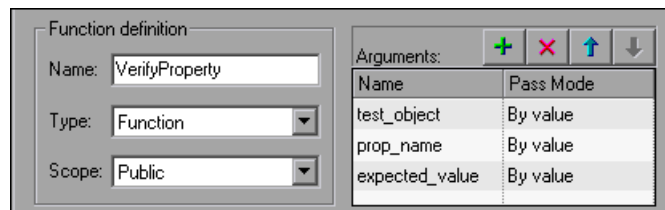


Tip: You can also open the Function Definition Generator by double-clicking the **FunctionDefGen.exe** file in your <QuickTest installation path>\Bin folder.

After you open the Function Definition Generator, you can begin to define a new function, as described in “Defining the Function and Its Arguments”, below.

Defining the Function and Its Arguments

After you open the Function Definition Generator, you can begin defining a function and its arguments.



For example, if you want to define a function that verifies the value of a specified property, you might name it **VerifyProperty**, define it as a public function, and assign it the following arguments: **test_object** (the test object), **prop_name** (the name of the property to check), and **expected_value** (the expected value of the property).

If you want to register the function to a test object, you must add at least one argument to it (the first argument must receive the test object). You can add as many additional arguments as needed. If you register the function to a test object, but do not define the first argument to receive the test object, QuickTest automatically requires the first argument to receive the test object. You must define the required argument(s) for your function to run correctly.


The function you define can be public or private. If you define it as public, the function can be called from any associated test or component file. If you define it as private, the function can only be called from elsewhere in the same function library file. Private functions cannot be registered to a test object.

To define a function and its arguments:

- 1** In the **Name** box, enter a name for the new function. The name should clearly indicate what the operation does so that it can be easily selected from the Step Generator or the Keyword View. Function names may not contain non-English letters or characters. In addition, function names must begin with a letter and cannot contain spaces or any of the following characters:
! @ # \$ % ^ & * () + = [] \ { } | ; ' : "" , / < > ?
- 2** From the **Type** list, choose **Function** or **Sub**, according to what you want to define.
- 3** From the **Scope** list, choose the scope of the function—either **Public** (to enable the function to be called by any test or component that is associated with this function library), or **Private** (to enable the function to be called only from elsewhere in the same function library file). By default, the scope is set to **Public**. (Only public functions can be registered to a test object.)




Note: If you create a user-defined function manually and do not define the scope as **Public** or **Private**, it will be treated as a public function, by default.

4 In the **Arguments** area, specify the argument(s) for the function. You can add as many arguments as needed. If you are registering the function to a test object, the value of the first argument must receive the test object. The name for each argument should indicate the value that needs to be entered. For example, you may want to name the argument `test_object`. (If you do not include this as the first argument in the list, the function will not run correctly.)

- To add an argument, click  and enter a name for the argument. The argument name should clearly indicate the value that needs to be entered for the argument. Argument names may not contain non-English letters or characters. In addition, argument names must begin with a letter and cannot contain spaces or any of the following characters:

! @ # \$ % ^ & * () + = [] \ { } | ; ' : "" , / < > ?

By default, the **Pass Mode** is set as **By value**. This instructs QuickTest to pass the argument to the function by value. If you want to pass the argument by reference, choose **By reference** in the **Pass Mode** box.

- To remove an argument, select it and click . The argument is removed from the Function Definition Generator.
- To set the order of the arguments, use the  and  arrows. The order of the arguments only affects the readability of the function code (except if you want to register the public function—in this case, the first argument must receive the test object).

After you define a public function and its arguments, you can register the function, as described in “Registering a Function” on page 118. Alternatively, if you defined a private function and its arguments, or if you do not want to register the function, you can continue by adding documentation for the function. For more information, see “Documenting the Function” on page 121.

Registering a Function

You can register a public function to a test object to enable the function (operation) to be performed on a test object. When you register a function to a test object, you can choose to override the functionality of an existing operation, or you can register the function as a new operation for the test object.

After you register a function to a test object, it is displayed as an operation in the Step Generator when that test object is selected (for tests), and in the Keyword View **Operation** list when that test object is selected from the **Item** list (for components). When you register a function to a test object, it can only be called by that test object.

If you choose to register your function to a test object, the Function Definition Generator automatically adds a **RegisterUserFunc** statement with the correct argument values immediately after your function definition.

When you register a function to a test object, you can optionally define it as the default operation for that test object. This instructs QuickTest to display the function in the **Operation** column, by default, when you or the Subject Matter Expert choose the associated test object in the **Item** list. When you define a function as the default function for a test object, the value **True** is specified as the fourth argument of the **RegisterUserFunc** statement.

If you do not register the function to a specific test object, the function is automatically defined as a global function. Global functions can be called by selecting the **Functions** category in the Step Generator, or the **Operation** item in the Keyword View. A list of global functions can be viewed in the **Operation** box when the **Functions** category is selected in the Step Generator (for tests), and in the **Operation** list when the **Operation** item is selected from the **Item** list in the Keyword View (for components). Global functions are displayed alphabetically in the **Operation** box in the Step Generator (for tests), and in the **Operation** cell in the Keyword View (for components).

For tests, during run-time, QuickTest first searches the test for the specified function and then searches the function library files in the order in which they are listed in the Resources tab. For components, QuickTest searches the function library files in the order in which they are listed in the Resources tab. If QuickTest finds more than one function that matches the function name in a specific test or function library file, it uses the last function it finds in that test or file. To avoid confusion, it is recommended that you verify that within the resources associated with a test, application area, or component, each function has a unique name.

Tip: If you choose not to register your function at this time, you can manually register it later by adding a **RegisterUserFunc** statement after your function as shown in the following example:

```
RegisterUserFunc "WebEdit", "MySet", "MySetFunc"
```

In this example, the **MySet** method (operation) is added to the WebEdit test object using the **MySetFunc** user-defined function. If you or the Subject Matter Expert choose the WebEdit test object from the **Item** list in the Keyword View, the **MySet** operation will then be displayed in the **Operation** list (together with other registered and out of the box operations for the WebEdit test object).

You can also register your function to other test objects by duplicating (copying and pasting) the **RegisterUserFunc** statement and modifying the argument values as needed when you save the function code in a library file.

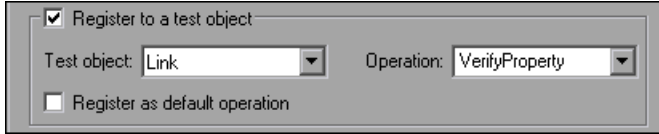
To define this function as the default function, you define the value **True** as the fourth argument of the **RegisterUserFunc** statement, for example:

```
RegisterUserFunc "WebEdit", "MySet", "MySetFunc", True
```

Note: A registered or global function can only be called from a test or component after it is added to the test script or a library file that is associated with the test or component.

To register the function to a test object:

- 1 Select the **Register to a test object** check box. The options in this area are enabled.



The screenshot shows a dialog box with a title bar. Inside, there are three main elements: a checked checkbox labeled "Register to a test object", two dropdown menus, and an unchecked checkbox labeled "Register as default operation". The first dropdown menu is labeled "Test object:" and has "Link" selected. The second dropdown menu is labeled "Operation:" and has "VerifyProperty" selected.

- 2 Choose a **Test object** from the list of available objects. For example, for the sample **VerifyProperty** function, you might want to register it to the **Link** test object.
- 3 Specify the **Operation** that you want to add or override for the test object.
 - ▶ To define a new operation, enter a new operation name in the **Operation** box. For example, for the sample **VerifyProperty** function, you may want to define a new **VerifyProperty** operation.
 - ▶ To override the standard functionality of an existing operation, choose an operation from the list of available operations in the **Operation** box.
- 4 If you want the function to be displayed as the default operation in the **Operation** column when you or the Subject Matter Expert choose the associated item, select the **Register as default operation** check box.

For example, if you were to define the **VerifyProperty** operation as the default operation for the **Link** test object, the value **True** would be defined as the fourth argument of the **RegisterUserFunc** statement, and the syntax would appear as follows:

```
RegisterUserFunc "Link", "VerifyProperty", "VerifyProperty", True
```

After you specify the test object registration information, you add documentation for the function. For more information, see “Documenting the Function” on page 121.

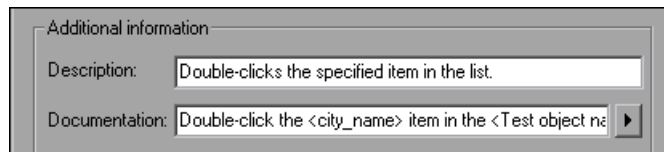
Documenting the Function

The Function Definition Generator enables you to add header information to your user-defined function. You can add a description, which is displayed as a tooltip when the cursor is positioned over the operation in the Step Generator (for tests), and in the Keyword View (for tests or components). You and Subject Matter Experts can then use this tooltip to determine which operation to choose from the list of available operations. As the description text is displayed as a tooltip, it is advisable to keep the text as brief and clear as possible.

In addition, you can add documentation that specifies exactly what a step using your function does. You can include the test object name, test object type, and any argument values in the text. You can also add text manually, as needed. The text that you add here is displayed in the **Step documentation** box in the Step Generator (for tests), and in the **Documentation** column of the Keyword View (for tests or components). Therefore, it must be a clear and understandable English sentence.

For example, using the sample Mercury Tours application, you might define the following documentation using the Function Definition Generator:
'@Documentation Double-click the <city_name> item in the <Test object name> <Test object type>.

After choosing values for the arguments in the Keyword View, the above documentation might appear as follows: Double-click the San Francisco item in the toPort list.





Note: Using the Keyword View, both you and Subject Matter Experts can select the **Documentation only** option to view or print a list of steps. This instructs QuickTest or Quality Center to display only the **Documentation** column (and any comments for business components). Therefore, the sentence displayed for the step in this column must also be clear enough to use for manual testing instructions.

To document the function:

- 1** In the **Description** box, enter the text to be displayed as a tooltip when the cursor is positioned over the function name in the **Operation** list in the Step Generator (for tests), and in the **Operation** column in the Keyword View (for components).

For example, for the sample **VerifyProperty** function, you may want to enter: Checks whether a property value matches the actual value.

- 2** In the **Documentation** box, enter the text to be displayed in the **Step documentation** box in the Step Generator (for tests), and in the **Documentation** column of the Keyword View (for tests or components). You can use arguments in the **Documentation** text by clicking  and selecting the relevant argument. If you selected the **Register to a test object** check box, clicking  also enables you to add the **Test object name** and/or **Test object type** items to the documentation column from the displayed list. If you use these test object and argument items in the **Documentation** text, they are replaced dynamically by the relevant test object names and types or argument values.

For example, for the sample **VerifyProperty** function, you may want to enter Check whether the <Test object name> <Test object type> <prop_name> value matches the expected value: <expected_value>.

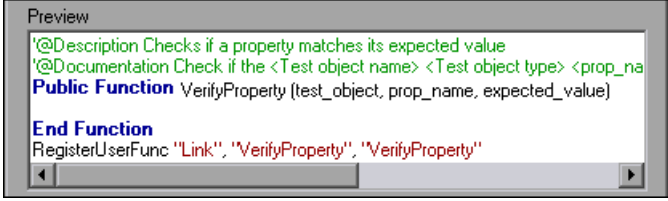
In the Keyword View, actual values would be inserted into the sentence, and the generated documentation would appear as follows: Check whether the Customer check box Enabled value matches the expected value: True.

After you provide documentation for the function, you can review it. For more information, see “Previewing the Function” on page 123.

Previewing the Function

The **Preview** area displays the function code as you define it, in read-only format. You can review your function and make any changes, as needed, in the various areas of the Function Definition Generator.

For example, for the sample **VerifyProperty** function, the **Preview** area displays the following code.



```

Preview
'@Description Checks if a property matches its expected value
'@Documentation Check if the <Test object name> <Test object type> <prop_na
Public Function VerifyProperty (test_object, prop_name, expected_value)
End Function
RegisterUserFunc "Link", "VerifyProperty", "VerifyProperty"

```

After you review the code, you copy it to the location in which it will be stored, for example, a library file or a test. For more information, see “Finalizing the User-Defined Function”, below.

Finalizing the User-Defined Function

After you preview the code, you can copy it to the location in which you want to store it. If you want to enable multiple tests or components to access the function, you can store it in a library file and then link the tests or components to it. You can also copy the function directly to a test (in the Expert View) to enable the specific test to call the function anywhere within an action.

After you paste the code in the required location, you can finalize the function. For example, for the **VerifyProperty** function, you would copy the following code and save it in a library file or paste it directly into a test:

```

'@Description Checks whether a property matches its expected value
'@Documentation Check whether the <Test object name> <Test object type>
<prop_name> value matches the expected value: <expected_value>.
Public Function VerifyProperty (test_object, prop_name, expected_value)

```

```

End Function
RegisterUserFunc "Link", "VerifyProperty", "VerifyProperty"

```

Note that the **RegisterUserFunc** statement (in the last line) registers the **VerifyProperty** function to the Link test object. If you wanted to register the function to more than one test object, you could copy this line and duplicate it for each test object, changing the argument values, as required.

To finalize the function, you add its content. For example, if you wanted the function to verify whether the expected value of a property matches the actual property value of a specific test object, you might add the following to the body of the function:

```
Dim actual_value
  ' Get the actual property value
  actual_value = obj.GetROProperty(prop_name)
  ' Compare the actual value to the expected value
  If actual_value = expected_value Then
    Reporter.ReportEvent micPass, "VerifyProperty Succeeded", "The " &
prop_name & " expected value: " & expected_value & " matches the actual
value"
    VerifyProperty = True
  Else
    Reporter.ReportEvent micFail, "VerifyProperty Failed", "The " &
prop_name & " expected value: " & expected_value & " does not match the
actual value: " & actual_value
    VerifyProperty = False
  End If
```

To finalize the user-defined function:

- 1 Click **Copy** or select the text in the **Preview** box and press CTRL + C to copy the code to the Clipboard. Then paste the function in the required location—either in the Expert View of a test or in a function library file. For information on working with library files, see “Using Associated Library Files” on page 129.

Note: For tests, if you define a function directly in an action, the function can be called only in that action.

- 2 Add content to the function code, as required.

Tip: To display the function in the test results tree (Test Results window) after a run session, add a **Reporter.ReportEvent** statement to the function code (as shown in the example above).

Note that if your user-defined function uses a default test object method, this step will appear in the Test Results window after the run session. However, you can still add a **Reporter.ReportEvent** statement to the function code to provide additional information and to modify the test or component status, if required.


- 3 If you pasted the code in a library file, you must associate the library file with the test, application area, or component to enable access to the user-defined function(s). You also need to check its syntax to ensure that tests and components will have access to the functions, and that you and the Subject Matter Expert will be able to see and use the functions. For more information, see “Working with Associated Library Files” on page 127.

Additional Tips for Working With User-Defined Functions

When working with user-defined functions, consider the following tips and guidelines:

- If you want to call the function from additional test objects, you can copy the **RegisterUserFunc** line, paste it immediately after another function and replace any relevant argument values.
- By default, steps that use user-defined function are not displayed in the test results tree of the Test Results window after a run session. If you want the function to appear in the test results tree, you must add a **Reporter.ReportEvent** statement to the function code.

Note: If your user-defined function uses a default test object method, this step will appear in the Test Results window after the run session. However, you can still add a **Reporter.ReportEvent** statement to the function code to provide additional information and to modify the test or component status, if required.

- For an in-depth view of the required syntax, you can define a function using the Function Definition Generator and experiment with the various options.
- If you delete a function in use from an associated library file, the test or component step using the function will display the  icon. In subsequent run sessions for the test, component, or business process test, an error will occur when the step using the non-existent function is reached.
- If you modify a function library file that is referenced by a test or component, the changes will be displayed in the **Operation** column of the Keyword View only after the test or component is reopened.
- When more than one function with the same name exists in the test script or library file, the last function will always be called. (QuickTest searches the test script for the function prior to searching the library files.) To avoid confusion, make sure that you verify that within the resources associated with a test, component, or application area, each function has a unique name.
- For more information about creating functions and sub-routines using VBScript, you can view the VBScript documentation from the QuickTest Help menu (**Help > QuickTest Professional Help > VBScript Reference**).

Working with Associated Library Files

You can create VBScript library files containing VBScript functions and subroutines, and then associate the files with your test or component. You can call any public VBScript function or subroutine contained within any library file that is associated with your test or component. Any text file written in standard VBScript syntax can act as a library file. For more information about library files, refer to the *QuickTest Professional User's Guide*.

You use the Resources tab of the relevant Settings dialog box to associate library files. You specify the library files for all new tests in the Test Settings dialog box. You specify the library files for all new components based on an application area in the Application Area Settings dialog box. You specify the library files for a specific component in the Business Component Settings dialog box. You can also edit the list of associated library files for an existing test or component in the relevant Settings dialog box. For more information, see “Defining Business Component and Application Area Settings” on page 85.

Adding a Library File to Your Quality Center Project

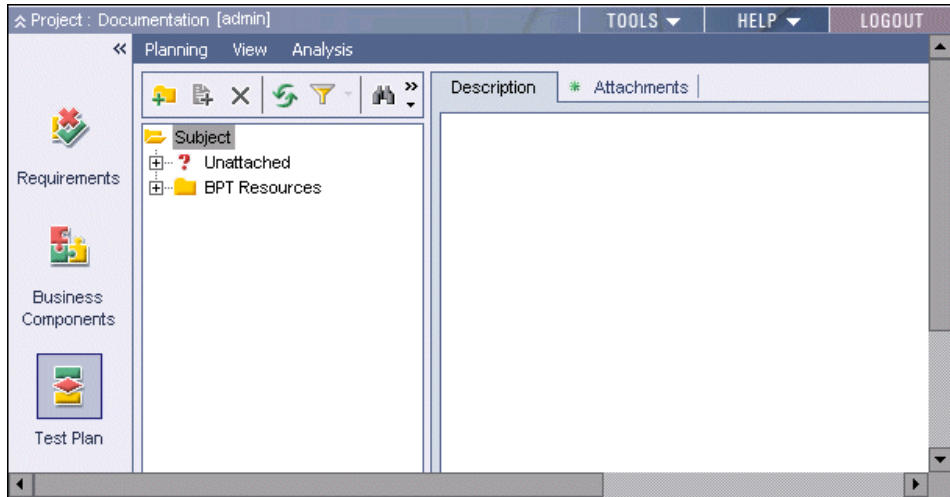
Before you can associate a library file with an application area or a specific component, the library file must be stored in your Quality Center project. (You can associate tests with library files that are stored in your file system or in your Quality Center project.) For components, QuickTest provides a default location in which you can store your library files: **[Quality Center] Subject\BPT Resources\Libraries**.

After you add the library file to your project, you can associate it with a test, application area, or specific component, as described in “Using Associated Library Files” on page 129.

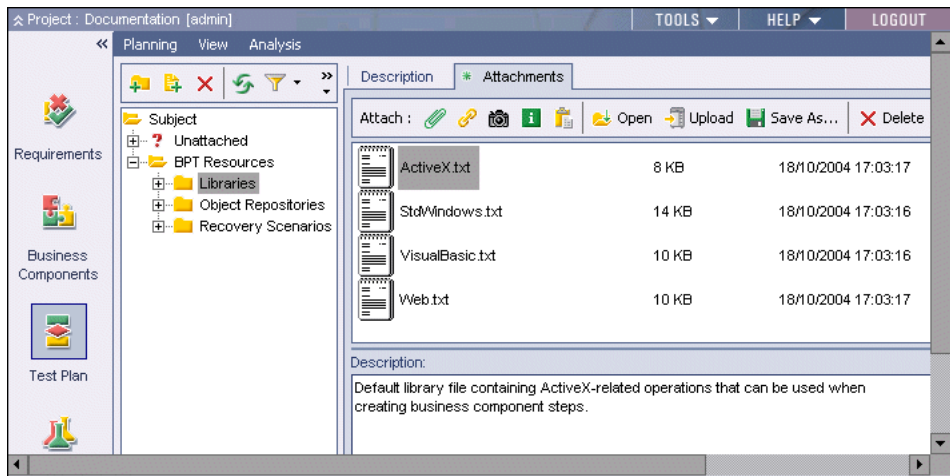
To add a library file to your Quality Center project:

- 1** In QuickTest, save your application area, as described in “Saving an Application Area” on page 35. This saves the default library file to your Quality Center project and sets up the required folders. (This step is relevant only for components.)
- 2** Create a VBScript library file or text file and save it with a **.vbs** or **.txt** suffix to a convenient location.

- 3 Open the Test Plan module in your Quality Center project. For more information on opening Quality Center projects, refer to the *Mercury Quality Center User's Guide*.



- 4 Expand the **BPT Resources** branch in the test plan tree and select **Libraries**.
- 5 Click the **Attachments** tab in the right pane. The Attachments tab opens and displays the default function library files.



- 6 In the right pane, click the **File** button. The Open dialog box opens.

- 7 Browse to the location of your saved library file and click **Open**. The library file name appears in the Attachments list, together with the size and date modified. An icon for the application associated with the file appears next to the file name.
- 8 In the **Description** box, add any comments.
- 9 Close Quality Center, if desired.
- 10 You can now associate the library file with your application area, test, or component. For more information, see “Using Associated Library Files”, below.

Using Associated Library Files

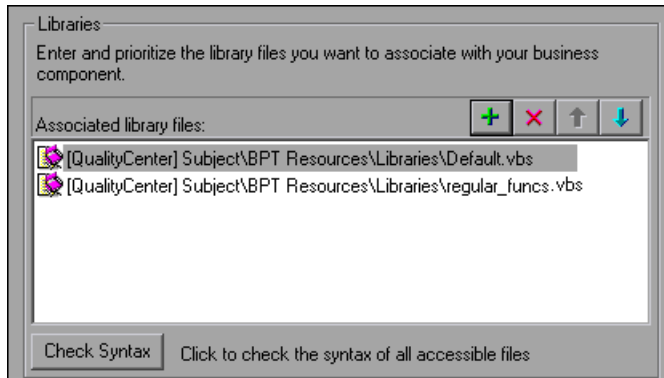
In order to access functions in a library file from your test or component, you must associate it as a resource file.

Business components can only access library files that are saved in your Quality Center project. When working with Quality Center and associated library files, you must save the associated library file as an attachment in your Quality Center project *before* you specify the associated file in the Resources tab of the Test Settings dialog box. You can add a new or existing library file to your Quality Center project.

To use an associated library file with your test or component:

- 1 If you want to add a new library file, create a new file in your file system with a **.vbs** or **.txt** extension.
- 2 Copy the function code that you created using the Function Definition Generator or manually, and save it in this library file.
- 3 If you want to associate the library file with an application area or with components, in the Quality Center Test Plan module, add the library file to the project as an attachment. (This step is optional for tests.) For more information, see “Adding a Library File to Your Quality Center Project” on page 127.

- 4 In the QuickTest Test Settings dialog box, Business Component Settings dialog box, or Application Area Settings dialog box, click the **Resources** tab.



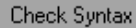
- 5 To add a new file to the associated library files list, when connected to Quality Center, click the **Add** button. QuickTest adds [QualityCenter], and displays a browse button so that you can locate the Quality Center path. You can also type the entire Quality Center path manually. If you do, you must add a space after [QualityCenter]. For example: [QualityCenter] Subject\Tests.

To add [QualityCenter] to the path (if you are working in a test and are not currently connected to Quality Center, hold the SHIFT key and click the **Add** button. QuickTest adds [QualityCenter], and you enter the path. Note that QuickTest searches Quality Center project folders only when you are connected to the corresponding Quality Center project.

If you want to associate a library file from your file system (outside of your Quality Center project) with a test, click the **Add** button and browse to the file.

Set as Default

Tip: You can specify that the library files you added will be associated with all new tests (not components) by default by clicking the **Set As Default** button.



6 Click the **Check Syntax** button to check the files for syntax errors. If any syntax errors are found, a dialog box opens listing the files containing syntax errors. Otherwise, an information box opens confirming that the syntax in all of the library files is valid. Note that if a library file contains syntax errors, the functions you stored in that file will not be accessible and cannot be used in tests or components that are associated with the library file.



7 To reorder the library files, use the **Up** and **Down** buttons. This specifies the order in which QuickTest searches for functions.



8 To remove a file from the associated library files list, select the file and click the **Delete** button. The library file remains in the Quality Center project or file system, but is no longer associated with your test or component (and therefore the function defined in it cannot be accessed by or used in the test or component).

Note: If the library file was associated with an application area, any components that were created using that application area before you deleted the library file from the Resources tab will still be able to access the library file functions, unless you update the copy of the application area settings from the business component in Quality Center. For more information on updating application area settings, refer to the *Mercury Business Process Testing User's Guide*.

You can now view and use all public functions in your function library file from your test or component. If the library file is associated with an application area, all new business components based on the application area will be able to access the functions stored in the library file.

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