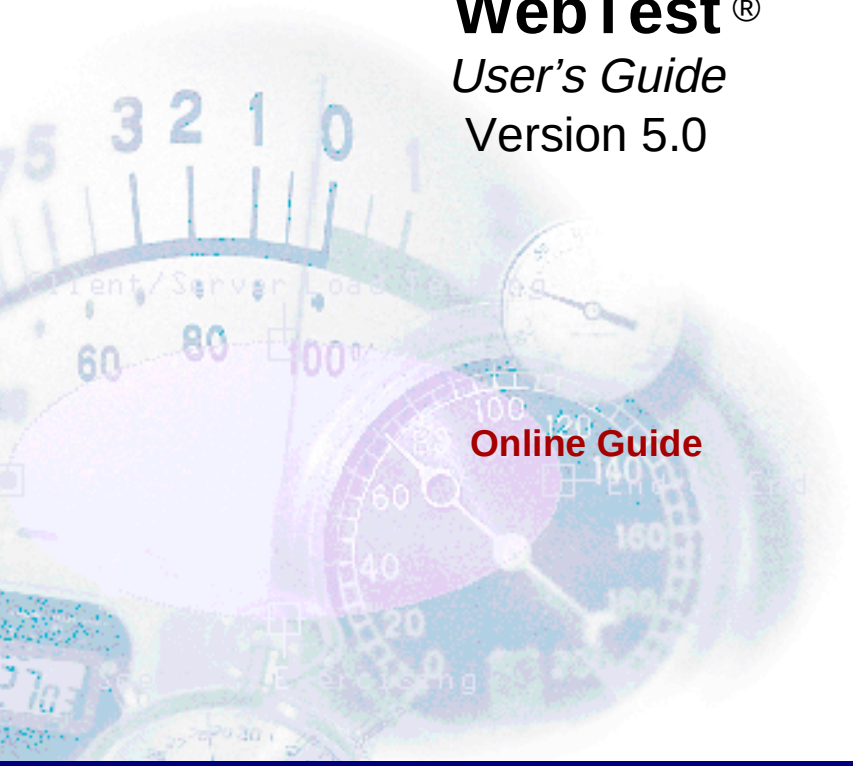
WebTest®

User's Guide

Version 5.0



Online Guide

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Introduction

Welcome to WebTest, Mercury Interactive's automated software testing tool for the Netscape Navigator web browser and the Microsoft Internet Explorer web browser.

This chapter describes:

- **Using WebTest to Test Web Sites**
- **How WebTest Identifies GUI Objects**
- **Setting Up WebTest**
- **Starting WebTest**

Using WebTest to Test Web Sites

WebTest enables you to test and verify the functionality of your web site while using the Netscape Navigator web browser or the Microsoft Internet Explorer web browser. WebTest is an add-in to WinRunner, Mercury Interactive's automated GUI testing tool for Microsoft Windows applications.

With WebTest you can create a suite of tests, and then run the tests each time you change your web site. To create a test, use WinRunner to record the operations you perform on your web site. As you click on hypertext and hypergraphic links, WinRunner generates a test script in TSL, Mercury Interactive's C-like test script language.

You can further enhance the recorded test script by inserting GUI checkpoints. A GUI checkpoint captures the text content, links, images, tables, and standard properties of a web page or a frame. This information is stored in the test's expected results directory.

When you run a test, WinRunner performs the operations you recorded earlier. For each GUI checkpoint it compares the expected results with the actual results on the page. If WinRunner detects any discrepancies, it sends this information to a report which you can view after the test run is completed.

This guide explains how to use WebTest for the Netscape Navigator web browser and the Microsoft Internet Explorer web browser. For additional information on using WinRunner, refer to the **WinRunner User's Guide** and the **TSL Online Reference**.

How WebTest Identifies GUI Objects

WinRunner learns a set of default properties for each object you operate on while recording a test. These properties enable WinRunner to obtain a unique identification for every object that you test. This information is stored in the GUI map. WinRunner uses the GUI map to help it locate frames and objects during a test run.

WinRunner identifies each HTML page and frame that it encounters as a separate window. The *class* property indicates the class of the GUI object. The *html_name* property indicates the name assigned to the HTML page or frame. The *html_url* property indicates the Internet address of the page in which it is displayed.

For example, a web page may have the following information in the GUI map:

```
{
 class: window,
 html_name: "Mercury Interactive Home Page",
 html_url: "http://www.merc-int.com/index.html"
}
```

WinRunner assigns the *html_name* property to standard objects. For example, a search button may have the following information in the GUI map:

```
{
 class: push_button,
 html_name: Search
}
```

Non-standard objects are assigned the *value* property. For example, a hypertext link may have the following information in the GUI map:

```
{
 class: object,
 MSW_class: html_text_link,
 value: Mercury Interactive's Products
}
```

You can view the contents of your GUI map files in the GUI Map Editor, by choosing Tools > GUI Map Editor. The GUI Map Editor displays the logical names and the physical descriptions of GUI objects. For more information, refer to the section "Understanding the GUI Map," in the *WinRunner User's Guide*.

Setting Up WebTest

Before you install WebTest, you must first install WinRunner version 5.01. For more information, refer to the *WinRunner Installation Guide*.

After the WinRunner installation is complete, install the WebTest software. Webtest supports Netscape Navigator 4.0 and higher, and Microsoft Internet Explorer 4.01.

If you have an existing installation of WebTest, you will need to overwrite it during the installation process.

Note: If your web sites contain Java applets, you need to install Java add-in support for WinRunner.

To install WebTest from disk:

1. Insert **WebTest Disk 1** into a floppy drive.
2. Click **Start** on the **Task Bar** to open the **Start** menu. Choose **Run**.
3. In the **Open** box, type the drive name and **setup.exe**. For example, type a:\setup.exe.
4. Click **OK**. The WebTest setup program starts. Follow the instructions on your screen.
5. When the WebTest installation is completed, restart WinRunner.

To install WebTest from CD:

1. Insert **WebTest CD** into the CD drive.
2. Click **Install**.
3. The WebTest setup program starts. Follow the instructions on your screen.

Note: If WinRunner was installed previously, clear the GUI map before running any WebTest scripts. In WinRunner, choose **Tools > GUI Map Editor** to open the GUI Map Editor. Then, choose **Edit > Clear All** and close the GUI Map Editor.

Starting WebTest

Before you begin testing your web site, make sure that you have installed all the necessary files and made any necessary configuration changes. For more information, see **Setting Up WebTest** on page 8, and the *WinRunner Installation Guide*.

To start WebTest, click **Programs > WinRunner > WinRunner** in the Start menu. After several seconds, the WinRunner window opens on your desktop. You are now ready to launch a browser.

Creating Tests

You can quickly create a test script by recording the operations you perform in your web browser.

This chapter describes:

- **Planning Tests**
- **Recording Tests**
- **Understanding Your Test Script**
- **Enhancing WebTest Scripts with TSL**

About Creating Tests

You can create a test by recording, programming, or a combination of both methods. The easiest way to create a test is by recording. When you record a test, the operations that you perform on a web site are recorded in the test script as statements in Test Script Language (TSL). Usually you create a script by recording, and then you use programming to enhance the recorded script.

You can increase the power of your test script by adding GUI checkpoints. GUI checkpoints help you examine GUI objects in your web site and detect defects. When you run a test, a GUI checkpoint compares the current state of the GUI objects in your web site to the expected results captured when you created the test. If any differences are detected, WinRunner sends this information to the test report. For example, you can create checkpoints to compare an old version of a web page with a new version.

Planning Tests

Before you start recording, you should plan your test. You should consider the following:

- The functionality you want to test. Short tests that check specific functions of the application are better than long tests that perform several tasks.
- The types of GUI checkpoints that you want to use. A GUI checkpoint can check for differences in the HTML content, links, tables, and standard attributes of a page. For more information, see Chapter 3, **Checking Web Pages**.

For more information on planning tests, refer to the section “Creating Tests”, in the *WinRunner User’s Guide*.

Recording Tests

After planning your test, you are ready to start recording your test script using WinRunner's Context Sensitive recording mode. In this mode, WinRunner records the operations you perform on your web site by uniquely identifying Graphical User Interface (GUI) objects.

To create a test script:

1 Start WinRunner.

2 Start your web browser.

Note: You must start WinRunner before you start your browser. Otherwise, WinRunner will not record your test script properly.

3 In WinRunner, choose **File > New**, or click the **New** button to create a new test.

4 Choose **Create > Record-Context Sensitive**, or click the **Record** button. WinRunner starts recording your operations.

5 Perform the sequence in your web browser that you want to record.

As you record, each operation you perform generates a TSL statement in your test script.

You can insert checkpoints in your test by choosing **Create > Check GUI > Object/Window**. For more information, see Chapter 3, **Checking Web Pages**.

6 To stop recording, choose **Create > Stop Recording** or click the **Stop** button.

7 To save your test, choose **File > Save As** and assign the test a name.

Note: To prevent valuable GUI information from being overwritten during a new recording session, save the temporary GUI map file for your test script in a permanent GUI map file. For more information, refer to Chapter 4, "Creating the GUI Map", in the *WinRunner User's Guide*.

Understanding Your Test Script

As you record, each operation you perform generates a statement in Mercury Interactive's Test Script Language (TSL), in your test script. The following is a sample of a recorded WinRunner test script.

```
set_window("Mercury Interactive Home Page", 10);
web_link_click("Products");
set_window("Mercury Interactive Products", 10);
web_image_click("WebTest", 48, 6);
win_check_gui("Mercury Interactive Products-WebTest", "list1.ckl", "gui1", 1);
```

set_window Function

Each time you click a link in a page, WinRunner generates a **set_window** statement. The **set_window** statement directs input to the currently displayed page in the browser. It has the following syntax:

set_window (window, time);

window is the name of the current web page (the title of the page as it was written in HTML).

time is the maximum interval in seconds that WinRunner waits for the page to open when your run the test, plus the timeout value defined in the WinRunner Set Options dialog box. If it takes longer than the default timeout to load the page (the default is 10+10=20 seconds), WinRunner waits up to an additional 10 seconds for the page to finish loading in the browser.

For example, the statement:

set_window ("Mercury Interactive Home Page", 10);

indicates that "Mercury Interactive Home Page" is the name of the current web page. WinRunner waits a maximum of 10 seconds for the page to open, plus the timeout value defined in the WinRunner Set Options dialog box.

web_link_click Function

WinRunner records this function when you click a hypertext link. It has the following syntax:

web_link_click (*link_name* **);**

link_name is the logical name of the GUI object as it appears in the GUI map. For example, the statement:

web_link_click ("Products");

indicates that the "Products" hypertext link is clicked.

web_image_click Function

WinRunner records this function when you click a hypergraphic link or an image. It has the following syntax:

web_image_click (*image_name, x, y* **);**

image_name is the source name of the image. The position of the mouse click is expressed as *x* and *y* (pixel) coordinates. Coordinates are relative to the upper left corner of the image. For example, the statement:

web_image_click("WinRunner", 48, 6);

indicates that a bitmap called "WinRunner" is clicked. This image can be a hypergraphic link or a bitmap. The coordinates of the image are 48 and 6.

win_check_gui Function

The **win_check_gui** function captures and compares GUI data for a window. It has the following syntax:

win_check_gui (*window, checklist, GUI_file, time* **);**

window is logical name of the window.

checklist is the name of the checklist specifying the checks to perform.

GUI_file is the name of the file storing the expected GUI data.

time is the interval marking the maximum delay between the previous input and the capture of the current GUI data, in seconds. This interval is added to the timeout test option before the next statement is executed.

For example, the statement:

win_check_gui("Mercury Interactive Products-WinRunner", "list1.ckl", "gui1", 1);

indicates that a GUI checkpoint is added to verify the objects in the "Mercury Interactive Products-WinRunner" page.

For more information on TSL statements, refer to the **TSL Online Reference**.

Enhancing WebTest Scripts with TSL

You can enhance your recorded test scripts by adding TSL statements. In the Function Generator, the following functions are located in the *Web* category.

- The **web_browser_invoke** function invokes the browser and opens the specified site. It has the following syntax:

  web_browser_invoke (*browser, site* **);**

- The **web_cursor_to_image** function directs the cursor to move to an image on a page. It has the following syntax:

  web_cursor_to_image (*image_name, x, y* **);**

- The **web_cursor_to_label** function directs the cursor to move to a label on a page. It has the following syntax:

  web_cursor_to_label (*label_name, x, y* **);**

- The **web_cursor_to_link** function directs the cursor to move to a hypertext link on a page. It has the following syntax:

  web_cursor_to_link (*link_name, x, y* **);**

- The **web_file_browse** function directs the cursor to click on a browse button. It has the following syntax:

  web_file_browse (*web_object* **);**

- The **web_file_set** function sets the text value in a file type object. It has the following syntax:

  web_file_set (*web_object, value* **);**

- The **web_frame_get_text** function retrieves the text content of a page. It has the following syntax:

  web_frame_get_text (*frame_name, text* **);**

- The **web_get_timeout** function returns the maximum time that WinRunner waits for response from the web. It has the following syntax:

  web_get_timeout (*out_timeout* **);**

- The **web_image_click** function is recorded when you click a hypergraphic link or an image. It has the following syntax:

  web_image_click (*image_name, x, y* **);**

- The **web_label_click** function performs a click on a specified label. It has the following syntax:

  web_label_click (*label* **);**

- The **web_link_click** function is recorded when you click a hypertext link. It has the following syntax:

  web_link_click (*link_name* **);**

- The **web_obj_get_child_item** function returns the description of the children in an object. It has the following syntax:

  web_obj_get_child_item (*web_object, table_row, table_column, object_type, index, object* **);**

- The **web_obj_get_child_item_count** function returns the count of the children in an object. It has the following syntax:

  web_obj_get_child_item_count (*web_object, table_row, table_column, object_type, object_count* **);**

- The **web_obj_get_info** function returns the value of an object property. It has the following syntax:

  web_obj_get_info (*web_object, property_name, property_value* **);**

- The **web_set_timeout** function sets the maximum time WinRunner waits for a response from the web. It has the following syntax:

  web_set_timeout (*timeout* **);**

- The **web_sync** function is recorded when you navigate between links within the same frame. It has the following syntax:

  web_sync (*timeout* **);**

- The **web_text_exists** function returns text value if it is found in the frame. It has the following syntax:

  web_text_exists (*frame, text_to_find, parent_object, table_row, table_column* **);**

When testing tables, you can also use the following **tbl_get** functions:

- The **tbl_get_cell_data** function retrieves the contents of the specified cell from a table. It has the following syntax:

  tbl_get_cell_data (table, row, column, out_text);

- The **tbl_get_cols_count** function retrieves the number of columns in a table. It has the following syntax:

  tbl_get_cols_count (table, out_cols_count);

- The **tbl_get_column_name** function retrieves the column header name of the specified column in a table. It has the following syntax:

  tbl_get_column_name (table, col_index, out_col_names);

- The **tbl_get_rows_count** function retrieves the number of rows in the specified table. It has the following syntax:

  tbl_get_rows_count (*table, out_rows_count*);

In the Function Generator, the **tbl_get** functions are located in the *Table Functions* category.

For more information on TSL functions, refer to the **TSL Online Reference**.

Checking Web Pages

You can check the contents of a web page by inserting GUI checkpoints into the test script.

This chapter describes:

- **Checking Contents of Cells or Frames**
- **Checking Links**
- **Checking the Source, Type, or Url of an Image**
- **Checking All Images in a Cell or Frame**
- **Checking Table Contents**
- **Checking Table Size**
- **Checking Standard Properties**

About Checking Web Pages

Use GUI checkpoints in your test script to help you examine your web site and detect defects. Using the Web Check GUI dialog box, you can create GUI checkpoints that check for differences between test runs in the text content, links, images, tables, and standard properties of a web page.

You can define GUI checkpoints according to default properties recommended by WinRunner, or you can define custom checks by selecting other properties.

Checking Contents of Cells or Frames

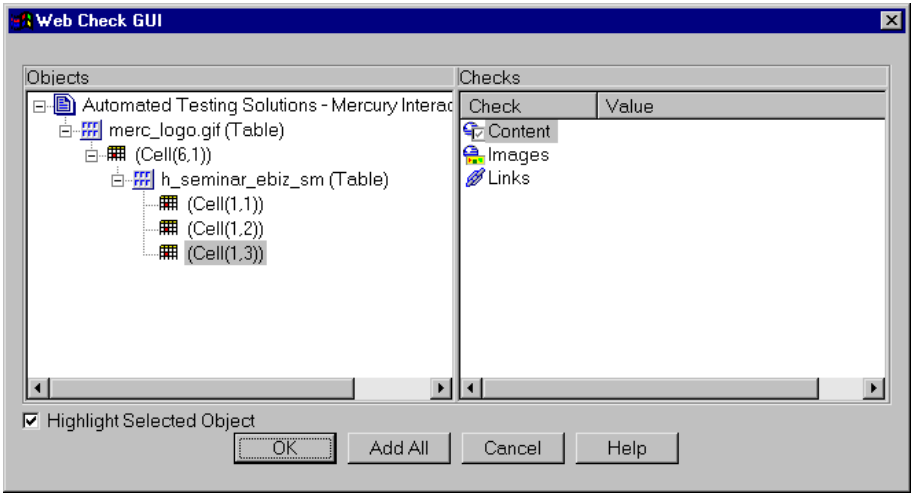
You can use a GUI checkpoint to check the text contents of a cell or a frame. To check the contents of a table, see see **Checking Table Contents,** on page 39.

To check the contents of a cell or a frame:

1 Choose **Create > Check GUI > Object/Window**.

The WinRunner window is minimized to an icon, the mouse pointer turns into a pointing hand, and a help window opens.

2 Double-click the page. The Web Check GUI dialog box opens.



3 In the **Objects** column, the object you clicked on the web page is highlighted. You can check the contents for that object or click on any other object in the Objects column.

4 In the **Checks** column, click the **Content** check.

5 Click **OK**.

WinRunner captures the GUI information and stores it in the test's expected results directory. The WinRunner window is restored and a **win_check_gui** statement is inserted into your test script. For more information on **win_check_gui**, refer to the *TSL Online Reference*.

Checking Links

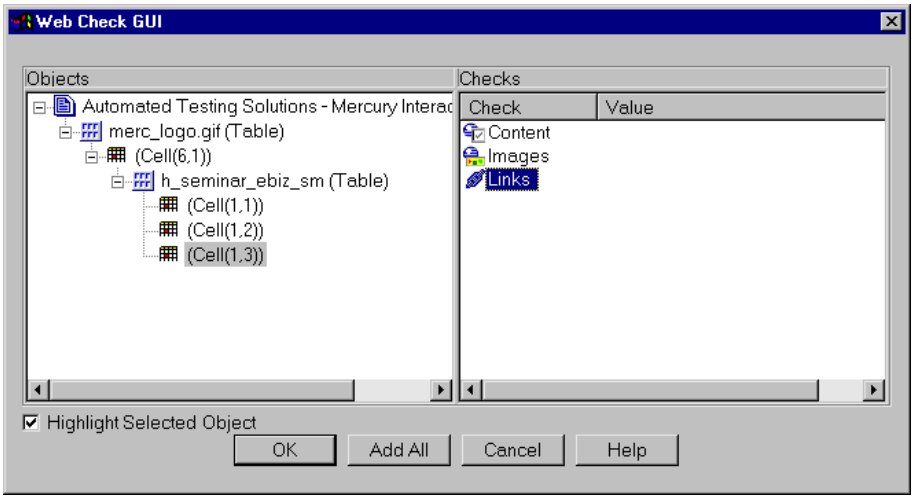
You can use a GUI checkpoint to check the HTML links in a frame or a cell.

To check the HTML links:

1 Choose **Create > Check GUI > Object/Window**.

The WinRunner window is minimized to an icon, the mouse pointer turns into a pointing hand, and a help window opens.

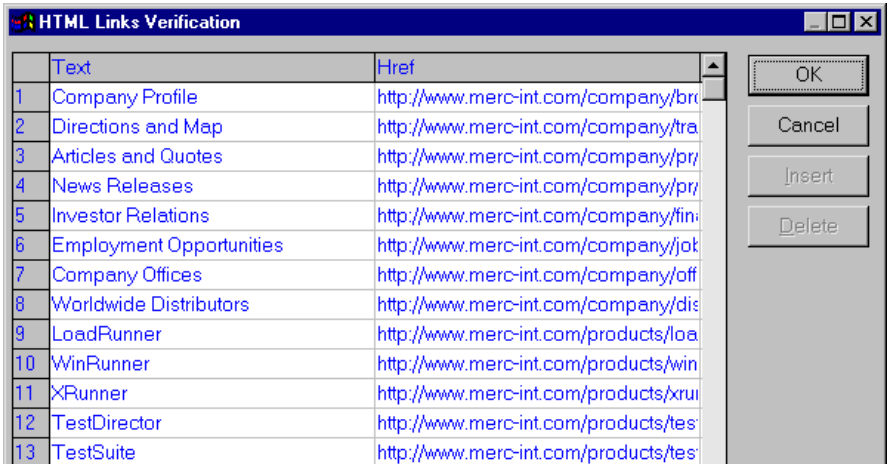
2 Double-click a web page. The Web Check GUI dialog box opens.



3 In the **Objects** column, the object you clicked on the page is highlighted. You can check the links for that object or click on any object.

4 In the **Checks** column, click the **Links** check and click **OK**.

If you are checking links for a cell, the Cell Links Verification dialog box opens. If you are checking links for a frame, the HTML Links Verification dialog box opens.



The HTML Links Verification dialog box and the Cell Links Verification dialog box, both list the links according to the order they appear in your source code. The dialog boxes include the following columns:

- **Text** indicates the name of the link.
- **Href** indicates the address of the link.

5 Select the type of check from the **Verification Type** list.

The following verification types are available:

- **Case Sensitive** (default), checks the text content of the links, ignoring any differences in font size, type, and color. Any difference in case or text content between the expected and actual data results in a mismatch.
- **Case Insensitive** checks the text content of the links, ignoring any differences in font size, type, color, and case. Only differences in text content between the expected and actual data result in a mismatch.
- **Numeric Content** evaluates the selected data according to numeric values. WinRunner recognizes, for example, that "2" and "2.00" are the same number. It also ignores the alignment of numerals within a cell.
- **Numeric Range** compares the selected data against a numeric range. This verification type is not relevant for the links verification check.

6 Specify the parts of the table that you want to check.

- To include all links, click the upper left cell and click **Insert**.
- To include one or more full columns, click the column header(s) and click **Insert**.
- To include one or more full rows, click the row number(s) and click **Insert**.
- To include any block of cells, highlight the block and click **Insert**.

A description of the checks inserted appears in the List of Checks field at the bottom of the dialog box.

7 To add more checks, repeat steps **4**, **5**, and **6**.

8 Select a verification method for the entire list of checks, using the **Verification Method** check boxes.

- **Row Sensitive** checks the rows in the list of checks according to a unique identifier, called a key. A shift in the position of a row does not result in a mismatch. For example, suppose you select Row Sensitive and define the key as the Href column. When running a test, WinRunner looks for the rows according to the Href column, ignoring any changes in the position of the row.
- **Column Names** checks the selected cells according to their physical position. The column names are included in the verification. This option is not relevant for the links verification check.

9 Click **OK** to close the dialog box.

WinRunner captures the GUI information and stores it in the test's expected results directory. The WinRunner window is restored and a **win_check_gui** statement is inserted into your test script. For more information on **win_check_gui**, refer to the *TSL Online Reference*.

Checking the Source, Type, or Url of an Image

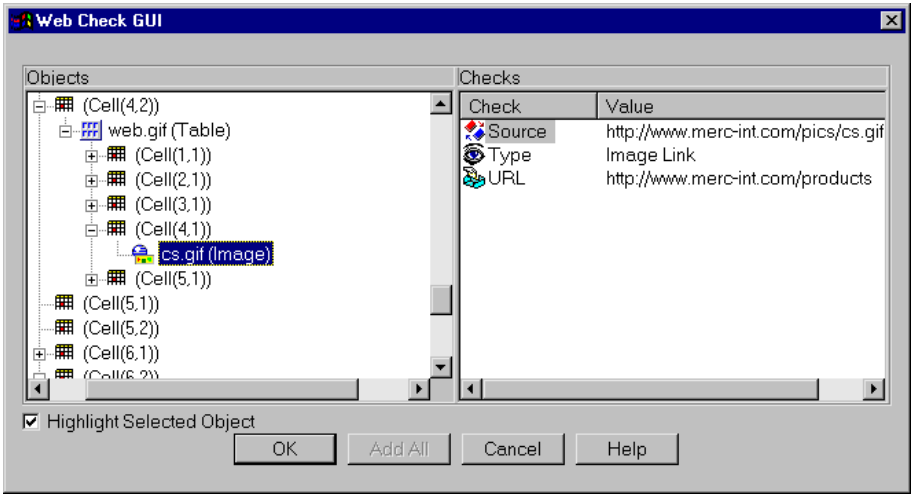
You can use a GUI checkpoint to check the source, image type, and the Url of a single image in your web page.

To check the source, type, or url of an image:

1 Choose **Create > Check GUI > Object/Window**.

The WinRunner window is minimized to an icon, the mouse pointer turns into a pointing hand, and a help window opens.

2 Double-click an images on a page. The Web Check GUI dialog box opens. The image you clicked on the page is highlighted in the **Objects** column.



3 In the **Checks** column, click one of the following checks:

- **Source** indicates the location of the image.
- **Type** indicates that the image is a plain image, image map, or an image link.
- **Url** indicates the address of an image link.

4 Click **OK** to close the dialog box.

WinRunner captures the GUI information and stores it in the test's expected results directory. The WinRunner window is restored and a **win_check_gui** statement is inserted into your test script. For more information on **win_check_gui**, refer to the *TSL Online Reference*.

Checking All Images in a Cell or Frame

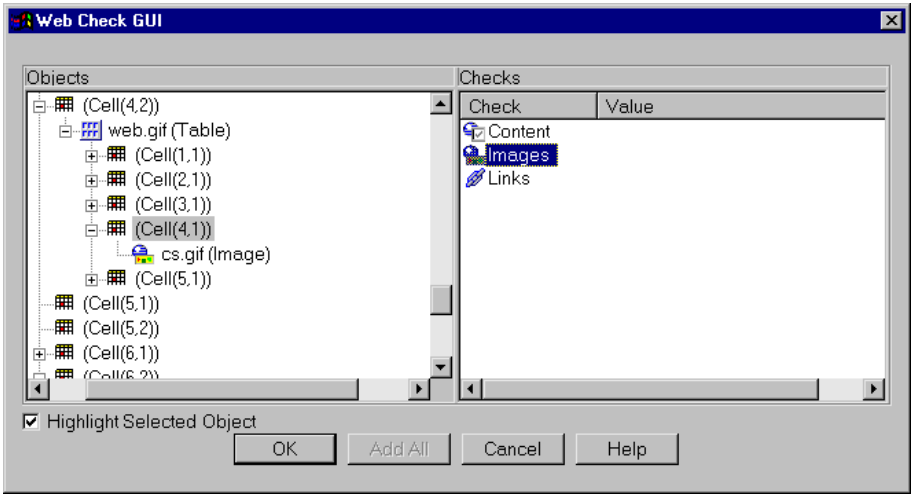
You can use a GUI checkpoint to check all images in a particular cell or frame.

To check all images in a cell or a frame:

1 Choose **Create > Check GUI > Object/Window**.

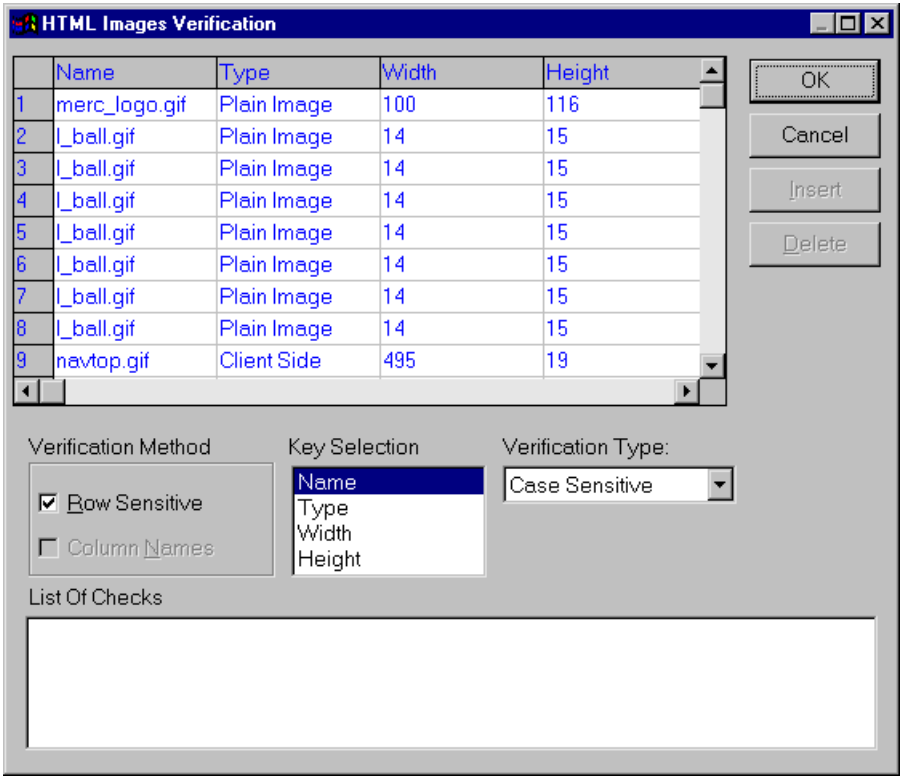
The WinRunner window is minimized to an icon, the mouse pointer turns into a pointing hand, and a help window opens.

2 Double-click on a page. The Web Check GUI dialog box opens.



3 In the **Objects** column, the cell you clicked on the web page is highlighted. You can check that cell or click on another cell or a frame.

4 In the **Checks** column, click the **Images** check and click **OK**. The HTML Images Verification dialog box opens.



The HTML Images Verification dialog box displays information about each image included in a cell or a frame. It lists the images according to the order they appear in your source code.

The table includes the following columns:

- **Name** indicates the name of an image.
- **Type** indicates that the image is a plain image, image map, or an image link.
- **Width** and **Height** indicate the dimensions of an image, (only when the image size is defined in the source page).

5 Select the type of check from the **Verification Type** list.

The following verification types are available:

- **Case Sensitive** (default), checks the text content, ignoring any differences in font size, type, and color. Any difference in case or text content between the expected and actual data results in a mismatch.
- **Case Insensitive** checks the text content, ignoring any differences in font size, type, color, and case. Only differences in text content between the expected and actual data result in a mismatch.
- **Numeric Content** evaluates the selected data according to numeric values. WinRunner recognizes, for example, that "2" and "2.00" are the same number. It also ignores the alignment of numerals within a cell.
- **Numeric Range** compares the selected data against a numeric range. This verification type is not relevant for this verification check.

6 Specify the parts of the table that you want to check.

- To include the entire table, click the upper left cell and click **Insert**.
- To include one or more full columns, click the column header(s) and click **Insert**.
- To include one or more full rows, click the row number(s) and click **Insert**.
- To include any block of cells, highlight the block and click **Insert**.
- A description of the checks inserted appears in the **List of Checks** field at the bottom of the dialog box.

7 To add more checks, repeat steps **4**, **5,** and **6**.

8 Select a verification method for the entire list of checks, using the Verification Method check boxes.

- **Row Sensitive** checks the rows in the list of checks according to a unique identifier, called a key. A shift in the position of a row does not result in a mismatch. For example, suppose you select Row Sensitive and define the key as the Src column. When running a test, WinRunner looks for the rows according to the Src column, ignoring any changes in the position of the row.
- **Column Names** checks the selected cells according to their physical position. The column names are included in the verification. This option is not relevant for the images verification check.

9 Click **OK** to close the dialog box.

WinRunner captures the GUI information and stores it in the test's expected results directory. The WinRunner window is restored and a **win_check_gui** statement is inserted into your test script. For more information on **win_check_gui**, refer to the *TSL Online Reference*.

Checking Table Contents

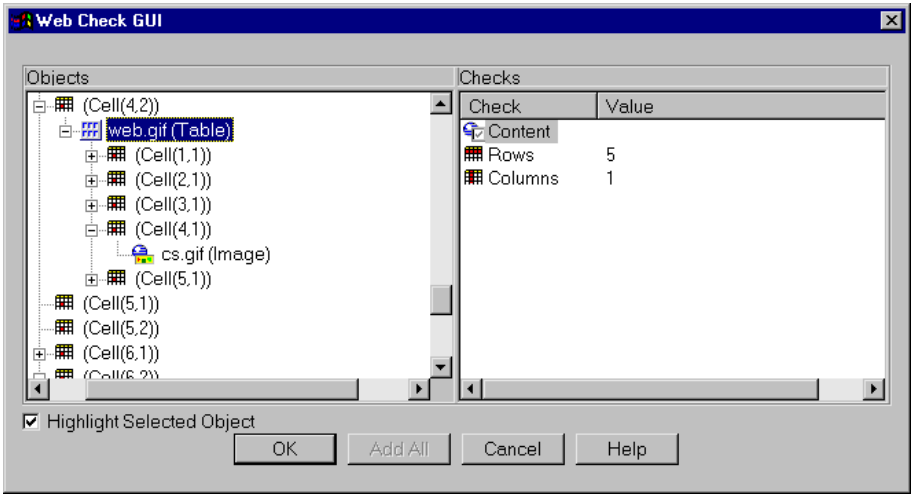
You can use a GUI checkpoint to check tables in a frame. You can check the contents of a table and the rows and columns count. Note that **y**ou can check only one table at a time. If a page contains several tables, you must create a new GUI checkpoint for each one.

To check the contents of a table:

1 Choose **Create > Check GUI > Object/Window**.

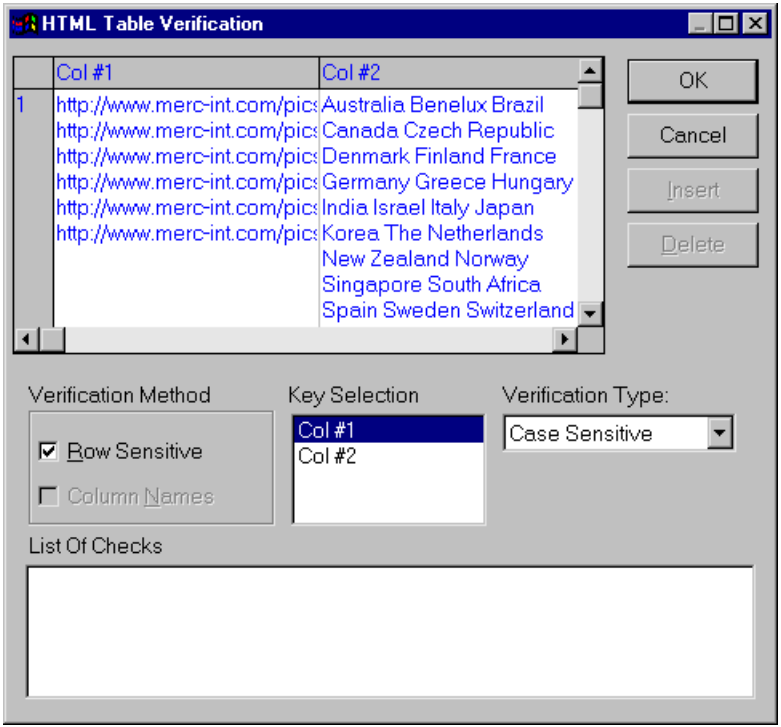
The WinRunner window is minimized to an icon, the mouse pointer turns into a pointing hand, and a help window opens.

2 Double-click a page. The Web Check GUI dialog box opens.



3 In the **Objects** column, click a table.

4 In the Checks column, click **Contents**. The HTML Table Verification dialog box opens.



The data of the table is displayed in the dialog box. The dialog box, according to the columns found in the table.

5 Select the type of check from the Verification Type list.

The following verification types are available:

- **Case Sensitive** (default), checks the text content of the selection (ignoring any differences in font size, type, and color). Any difference in case or text content between the expected and actual data results in a mismatch.
- **Case Insensitive** checks the text content of the selection, ignoring any differences in font size, type, color, and case. Only differences in text content between the expected and actual data result in a mismatch.
- **Numeric Content** evaluates the selected data according to numeric values. WinRunner recognizes, for example, that "2" and "2.00" are the same number. It also ignores the alignment of numerals within a cell.
- **Numeric Range** compares the selected data against a numeric range. Both the minimum and maximum values are any real number that you specify. This comparison differs from text and numeric content verification in that the actual data is compared against the range that you defined and not against the expected results.

6 Specify the parts of the table that you want to check.

- To include the entire table, click the upper left cell and click Insert.
- To include one or more full columns, click the column header(s) and click Insert.
- To include one or more full rows, click the row number(s) and click Insert.
- To include any block of cells, highlight the block and click Insert.
- A description of the checks inserted appears in the List of Checks field at the bottom of the dialog box.

7 To add more checks, repeat steps **4**, **5,** and **6**.

8 Select a verification method for the entire list of checks, using the Verification Method check boxes.

The following verification methods are available:

- **Row Sensitive** checks the rows in the selection according to a unique identifier, called a key. A shift in the position of a row does not result in a mismatch. For example, suppose you select Row Sensitive and define the key as the Product column. When running a test, WinRunner looks for the rows according to the Product column, ignoring any changes in the position of the row.
- **Column Names** checks the selected cells according to their physical position. The column names are included in the verification.

The following verification methods are available for a single-column table:

- **By Position** checks the selection according to the location of the selection.
- **By Content** checks the selection according to the content of the items, ignoring their location in the page.

9 Click **OK** to close the dialog box.

WinRunner captures the GUI information and stores it in the test's expected results directory. The WinRunner window is restored and a **win_check_gui** statement is inserted into your test script. For more information on **win_check_gui**, refer to the *TSL Online Reference*.

Checking Table Size

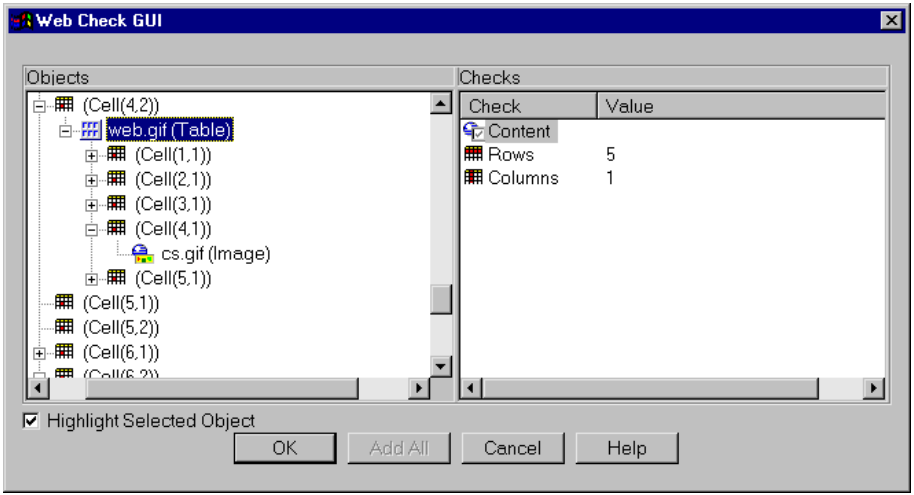
You can use a GUI checkpoint to check the number of rows and columns in a table. Note that **y**ou can check only one table at a time. If a page contains several tables, you must create a new GUI checkpoint for each one.

To check the table size:

1 Choose **Create > Check GUI > Object/Window**.

The WinRunner window is minimized to an icon, the mouse pointer turns into a pointing hand, and a help window opens.

2 Double-click a page. The Web Check GUI dialog box opens.



3 In the **Objects** column, click a table.

4 In the **Checks** column, click **Rows** or **Columns**.

5 Click **OK** to close the dialog box.

WinRunner captures the GUI information and stores it in the test's expected results directory. The WinRunner window is restored and a **win_check_gui** statement is inserted into your test script. For more information on **win_check_gui**, refer to the *TSL Online Reference*.

Checking Standard Properties

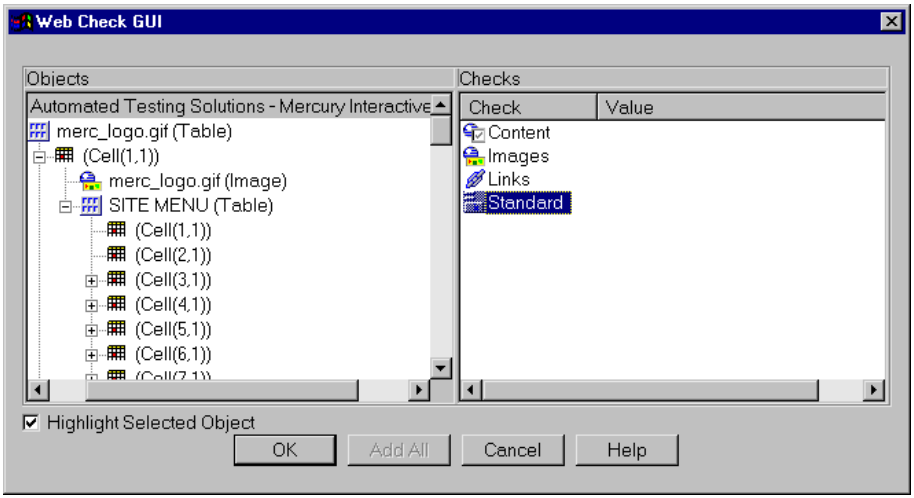
You can use a GUI checkpoint to check standard properties of a page.

To check standard properties:

1 Choose **Create > Check GUI > Object/Window**.

The WinRunner window is minimized to an icon, the mouse pointer turns into a pointing hand, and a help window opens.

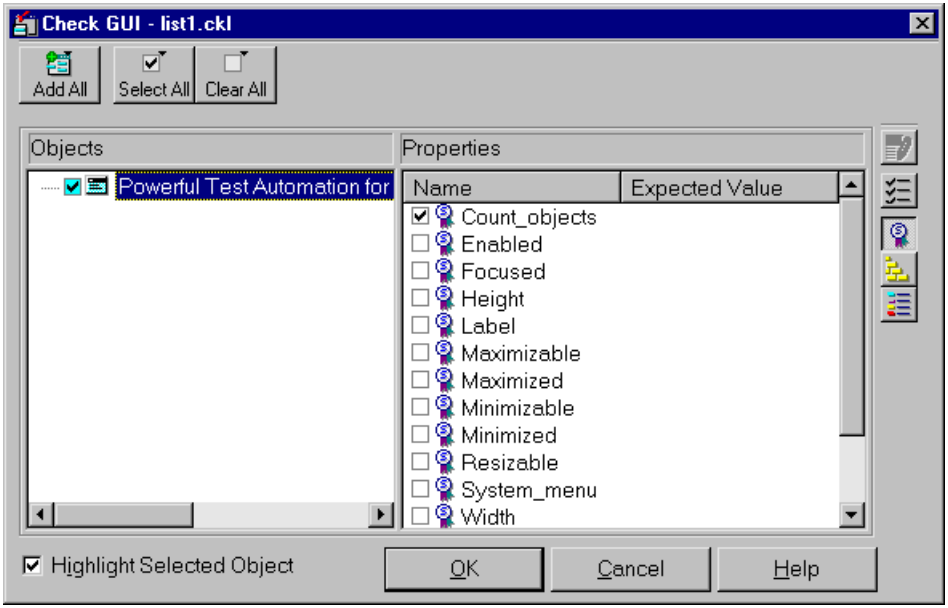
2 Double-click the page. The Web Check GUI dialog box opens.



3 In the **Objects** column, click the frame.

4 In the **Checks** column, click **Standard**.

5 Click **OK to close the dialog box**. The Check GUI dialog box opens.



The Check GUI dialog box displays the following standard properties:

- **Count_objects** counts the number of GUI objects in the window.
- **Enabled** checks whether the window can be selected.
- **Focused** checks whether keyboard input will be directed to this window.
- **Label** checks the window's label.
- **Minimizable** and **Maximizable** check whether the window can be minimized or maximized.
- **Minimized** and **Maximized** check whether the window is minimized or maximized.
- **Resizable** checks whether the window can be resized.
- **System_menu** checks whether the window has a system menu.
- **Width** and **Height** check the window's width and height, in pixels.
- **X** and **Y** check the x and y coordinates of the top left corner of the window.

6 Select the properties you want WinRunner to check.

7 Click **OK** to close the dialog box.

WinRunner captures the GUI information and stores it in the test's expected results directory. The WinRunner window is restored and a **win_check_gui** statement is inserted into your test script. For more information on **win_check_gui**, refer to the *TSL Online Reference*.

Running Tests

Once you have created a test script, you run the test to check the behavior of your web site.

This chapter describes:

- **WinRunner Test Run Modes**
- **Running a Test to Check Your Web Site**

About Running Tests

When you run a test, WinRunner interprets your test script, line by line, and performs the operations on your web site.

WinRunner provides three modes in which to run tests—Verify, Debug, and Update. You use each mode during a different phase of the testing process.

Use WinRunner's Run commands to run your tests. You can run an entire test or a portion of a test. For more information, refer to the *WinRunner User's Guide*.

Note: If you created permanent GUI map files for you tests, you must load the appropriate GUI map files before you run your tests. For more information, refer to Chapter 4, **Creating the GUI Map** in the *WinRunner User's Guide*.

WinRunner Test Run Modes

WinRunner provides three modes in which to run tests—Verify, Debug, and Update. You use each mode during a different phase of the testing process. You select a run mode from the list of modes on the WinRunner toolbar. The Verify mode is the default run mode.

Verify mode (default)**:** Use the Verify mode to check your web site. WinRunner compares the *current* response of your web page to its *expected* response. Any discrepancies between the current and expected responses are captured and saved as *verification results*.

You can save as many sets of verification results as you need. To do so, save the results in a new directory each time you run the test. You specify the directory name for the results using the Run Test dialog box.

Debug mode: Use the Debug mode to help you identify bugs in a test script. Running a test in the Debug mode is the same as running a test in the Verify mode, except that debug results are always saved in the *debug* directory. Because only one set of debug results is stored, the Set Results Directory dialog box does not appear when you run a test in Debug mode.

Once you run a test in Debug mode, this mode remains the default run mode for the current WinRunner session, until you choose another mode.

Update mode: Use the Update mode to update the *expected results* of a test. For example, you might choose to update the expected results for a GUI checkpoint that checks a push button, if the default status of the push button changes from enabled to disabled. By default, WinRunner saves expected results in the *exp* directory, overwriting any existing expected results.

For more information, refer to the *WinRunner User's Guide*.

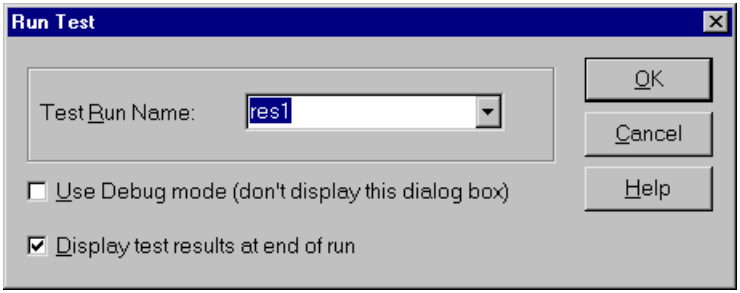
Running a Test to Check Your Web Site

When you run a test to check the behavior of your web site, WinRunner compares the current results with the expected results. You specify the directory in which the verification results for the test are saved.

To run a test to check your web site:

1. Open the test if it is not already open.
2. Make sure that **Verify** is selected from the dropdown list of run modes on the toolbar.

3. Choose **Run > Run from Top**, or click the **Run from Top** button.
4. In the Run Test dialog box, assign a name to the directory that will store the results, or accept the default name "res1".



To instruct WinRunner to display the test results automatically following the test run (the default), select the **Display test results at end of run** check box.

Click **OK**. The Run Test dialog box closes and WinRunner runs the test.

Analyzing Test Results

After you execute a test, you can view a report of all the major events that occurred during the test run in order to determine its success or failure.

This chapter describes:

- **Viewing Results of a Test Run**
- **Viewing Results of a Contents Check**
- **Viewing Results of a Check on Links, Images, or Tables**
- **Viewing Results of a Check on the Source, Type, or Url of an Image**
- **Viewing Results of a Table Size Check**
- **Viewing Results of a Standard Properties Check**

About Analyzing Test Results

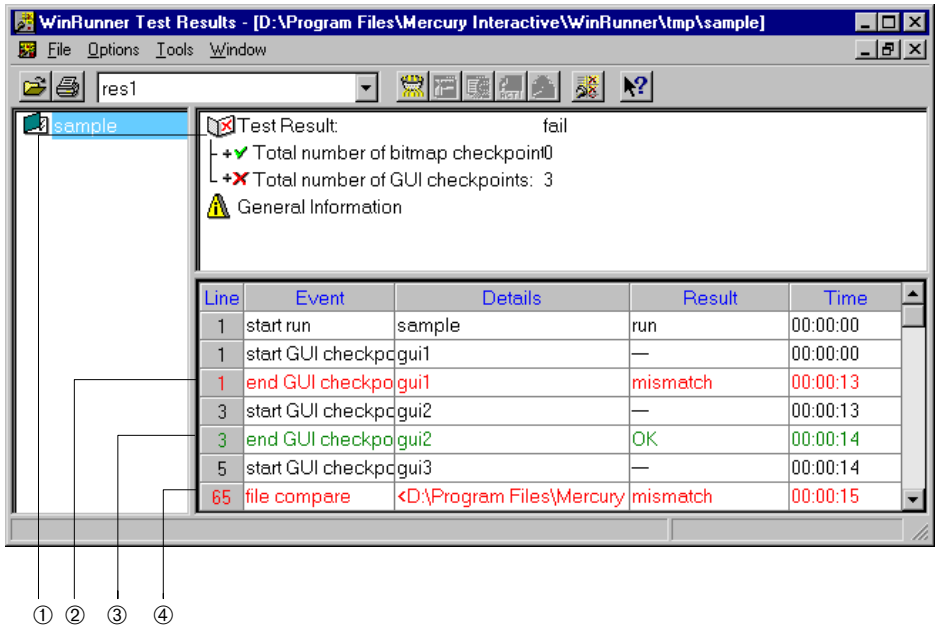
When a test run is completed, you can view detailed test results in the WinRunner Test Results window. The window contains a description of the major events that occurred during the test run, such as errors and GUI checkpoints. You can view expected, debug, and verification results in the Test Results window. By default, the Test Results window displays the results of the most recently executed test run. For more information, refer to the *WinRunner User's Guide.*

Viewing Results of a Test Run

When a test run is completed, test results are displayed in the WinRunner Test Results window.

To view test results:

1 To open the WinRunner Test Results window, choose **Tools > Test Results** or click the **Test Results** button. Note, if the **Display test results at end of run** check box was selected in the Run Test dialog box before you ran the test, the Test Results window opens automatically.



1 *Indicates whether the test passed or failed, and lists all checkpoints performed during the test run.*

2 *Failed GUI checkpoint.*

3 *Successful GUI checkpoint.*

4 *Checkpoint that verified the content of a web page.*

- In the Test Results section you can see whether the test passed or failed, and how many GUI checkpoints were included in the test.
- In the test log, look for GUI check statements. Failed GUI checkpoints appear in red; passed GUI checkpoints appear in green.
- If you created a checkpoint to verify the text content of a cell or a frame, a file compare statement will appear above that GUI checkpoint statement.

2 By default, the Test Results window displays the results of the most recently executed test run.

To view other test run results, click the results directory box and select a test run.

3 To view a text version of the test results, choose **Tools > Text Report** from the Test Results window; the report opens in Notepad.

4 To view only specific types of results in the events column in the test log, choose **Options > Filters** or click the **Filters** icon.

5 To print test results directly from the Test Results window, choose **File > Print** or click the **Print** icon.

In the Print dialog box, choose the number of copies you want to print and click OK. Test results print in a text format.

6 To close the Test Results window, choose **File > Exit**.

Viewing Results of a Contents Check

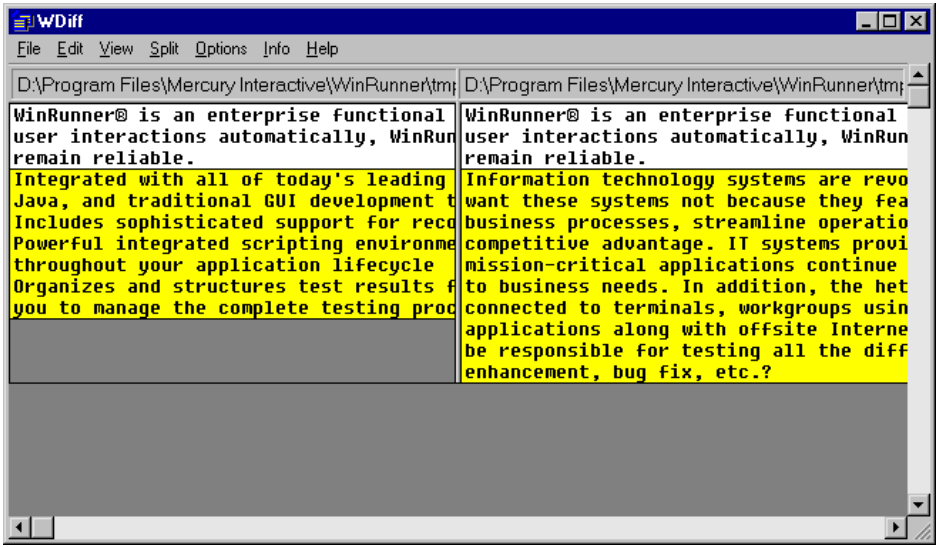
You can view the results of a contents check of a cell or a frame using the WDiff utility. This utility is accessed from the WinRunner Test Results window.

To view the results of a contents check:

1 Open the Test Results window.

2 Double-click a **file compare** entry in the **Event** column. The WDiff utility window opens. For an entry with no mismatch, the Notepad utility window opens.

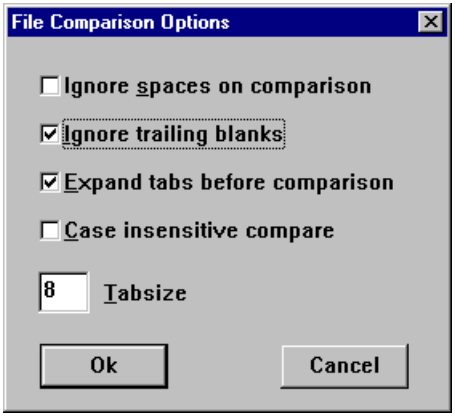
The WDiff utility displays the expected and actual results. Differences are highlighted.



3 To see the next mismatch in a file, choose **View > Next Difference**, or press **Tab**. The window scrolls to the next highlighted line. To see the previous difference, choose **View > Previous Difference** or press the **Backspace** key.

4 To view only the lines in the files that contain mismatches, choose **Options > View > Hide Matching Areas**, (a check mark at the left side of the menu identifies the current state). The window shows only the highlighted parts of both files.

5 To modify the way the actual and expected results text files are compared, choose **Options > File Comparison**.



Note that when you modify any of the options, the two text files are read and compared again.

- **Ignore spaces on comparison:** Tab characters and spaces are ignored on comparison.
- **Ignore trailing blanks** (default)**:** One or more blanks at the end of a line are ignored during the comparison.
- **Expand tabs before comparison** (default)**:** Tab characters (hex 09) in the text are expanded to the number of spaces which are necessary to reach the next tab stop. The number of spaces between tab stops is specified in the **Tabsize** parameter. This **expand tabs before comparison** option will be ignored, if the **Ignore spaces on comparison** option is selected at the same time.
- **Case insensitive compare:** Uppercase and lowercase is ignored during comparison of text files.
- **Tabsize:** The tabsize (number of spaces between tab stops) is selected between 1 and 19 spaces. The default size is 8 spaces. The option influences the file comparison, if the **expand tabs before comparison** options is also set. Tabs are always expanded to the given number of spaces in the Difference Display form.

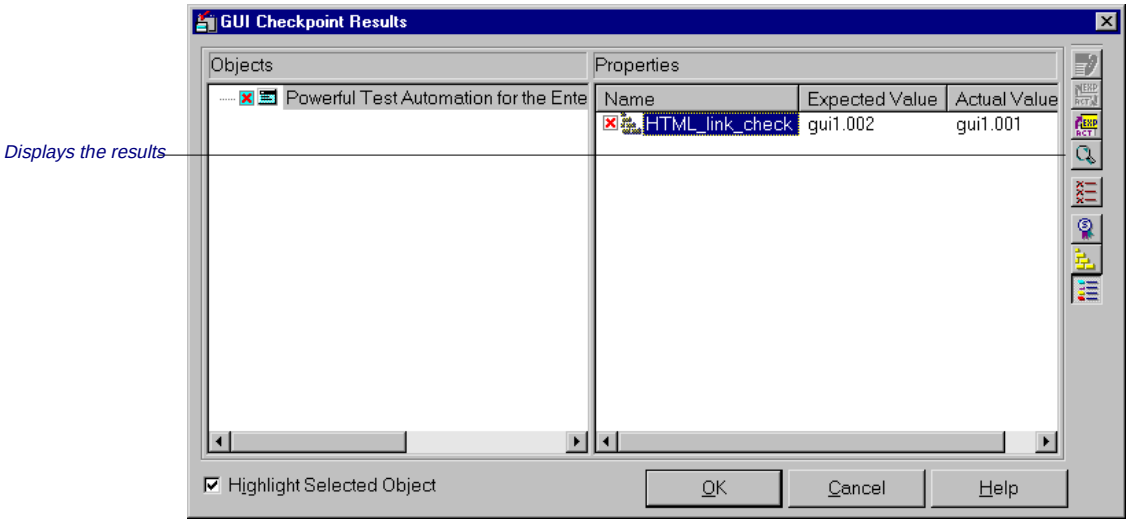
6 Choose **File > Exit** to close the WDiff utility.

Viewing Results of a Check on Links, Images, or Tables

You can view the results of GUI checkpoints on links, images in cells or frames, or table contents using the Data Comparison Viewer and Expected Data Viewer. For a check with no mismatches, the Expected Data Viewer opens. When you have a check with a mismatch the Data Comparison Viewer opens.

To view the results of checks on links, images, or tables:

1. Open the Test Results window. In the test log, look for an **end GUI checkpoint** entry in the **Event** column.
2. Double-click on an **end GUI checkpoint** entry. The GUI Checkpoint Results dialog box opens.

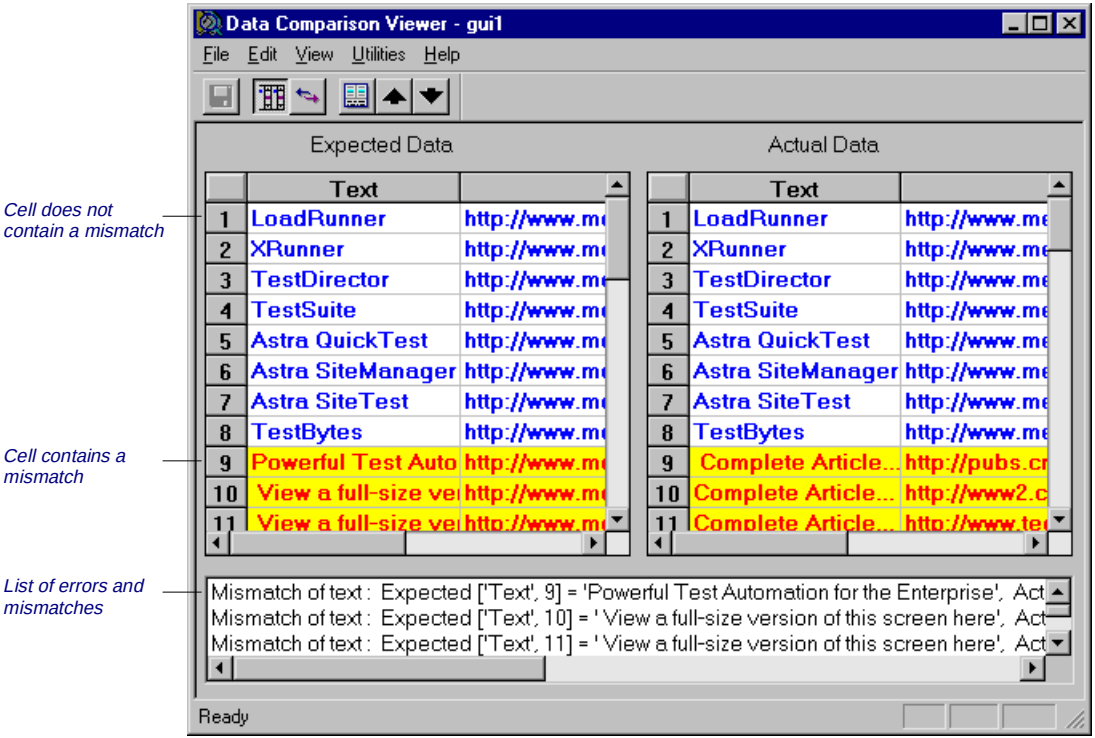


3 In the Properties column, click the name of the check and click **Display**, or double-click the name.

For a check with no mismatches, the Expected Data Viewer opens. When you have a check with a mismatch the Data Comparison Viewer opens.

4 If the **Expected Data Viewer** opens, it shows expected results only. To close the viewer, choose **File > Exit**.

5 If the **Data Comparison Viewer** opens, it shows both expected and actual results. All cells are color coded, and all errors and mismatches are listed at the bottom of the viewer.



Use the following color codes to interpret the differences that are highlighted in your window:

- **Blue on white background:** Cell was included in the comparison and no mismatch was found.
- **Cyan on ivory background:** Cell was not included in the comparison.
- **Red on yellow background:** Cell contains a mismatch.
- **Magenta on green background:** Cell was verified but not found in the corresponding table.
- **Background color only:** cell is empty (no text).

6 By default, scrolling between the expected and actual tables in the Data Comparison Viewer is synchronized. When you click any cell, the corresponding cell in the other table flashes red.

To scroll through the tables separately, clear **Synchronize Scrolling** from the **Utilities** menu. Use the scroll bar as needed to view hidden parts of the table.

7 To filter a list of errors and mismatches that appear at the bottom of the Differences Display form, use the following options:

- **To view mismatches for a specific column only:** Double-click a column heading (the column name) in either table.
- **To view mismatches for a single row:** Double-click a row number in either table.
- **To view mismatches for a single cell:** Double-click a cell with a mismatch.
- **To see the full list of mismatches:** Click **Full List** in the **Utilities** menu or double-click the empty cell in the upper left corner of the table.
- **To clear the list:** Double-click a cell with no mismatch.
- **To see the cell(s) that correspond to a listed mismatch:** Click a mismatch in the list at the bottom of the dialog box to see the corresponding cells in the table flash red. If the cell with the mismatch is not visible, one or both table scroll automatically to display it.

8 Choose **File > Exit** to close the Data Comparison Viewer.

Note: The cells in the Data Comparison Viewer can display up to 1,000 characters.

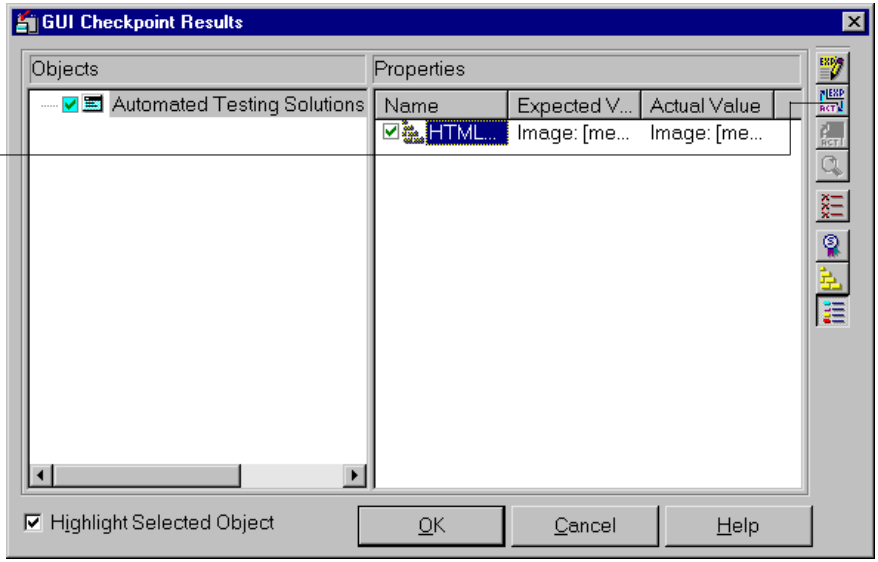
Viewing Results of a Check on the Source, Type, or Url of an Image

You can view the results of a GUI checkpoint on an image source, type, or Url.

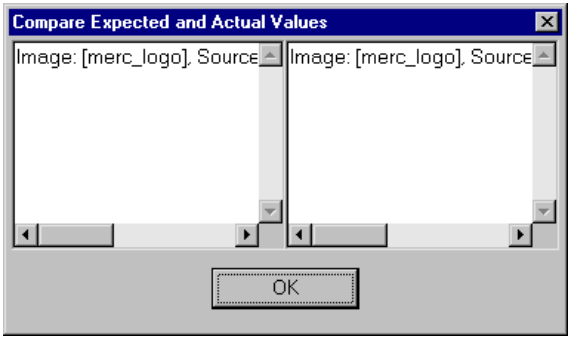
To view results of checks on the source, type, or Url of an image:

1. Open the Test Results window. In the test log, look for an **end GUI checkpoint** entry in the Event column.
2. Double-click an **end GUI checkpoint** entry in the Event column. The GUI Checkpoint Results dialog box opens.

Compare expected and actual values



3 In the Properties column, click the name of the check and click the **Compare expected and actual values** button. The Compare Expected and Actual Values dialog box opens.



4 Click **OK** to close the Compare Expected and Actual Values dialog box.

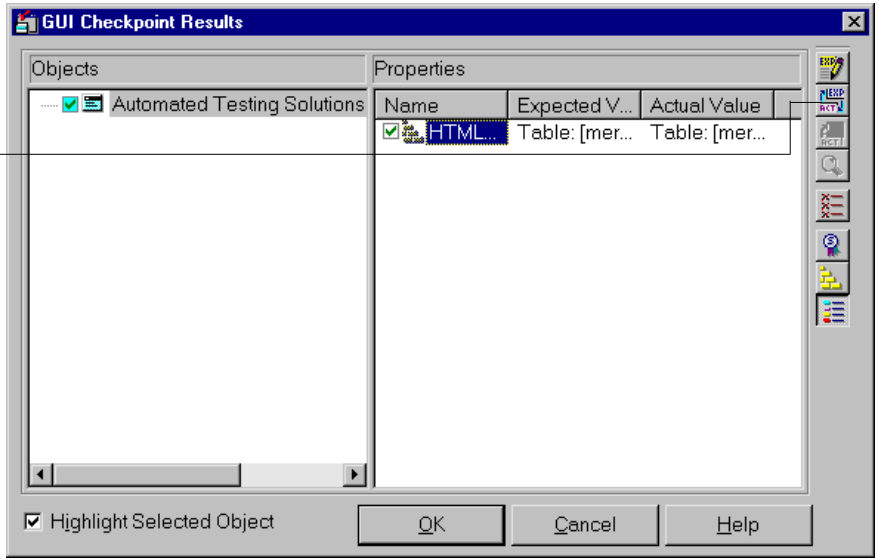
5 Click **OK** to close the GUI Checkpoint Results dialog box.

Viewing Results of a Table Size Check

You can view the results of a GUI checkpoint on rows and columns count in a table.

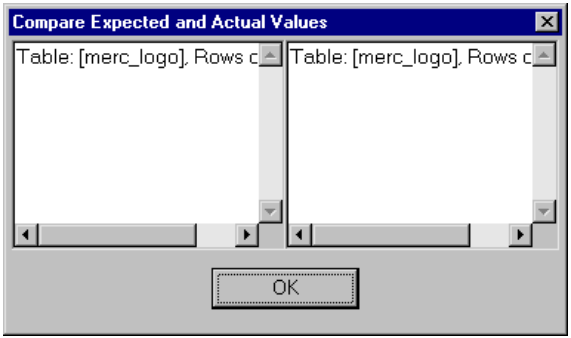
To view results of table size check:

1. Open the Test Results window. In the test log, look for an **end GUI checkpoint** entry in the Event column.
2. Double-click an **end GUI checkpoint** entry in the Event column. The GUI Checkpoint Results dialog box opens.



Compare expected and actual values

3 In the Properties column, click the name of the check and click the **Compare expected and actual values button**. The Compare Expected and Actual Values dialog box opens.



4 Click **OK** to close the Compare Expected and Actual Values dialog box.

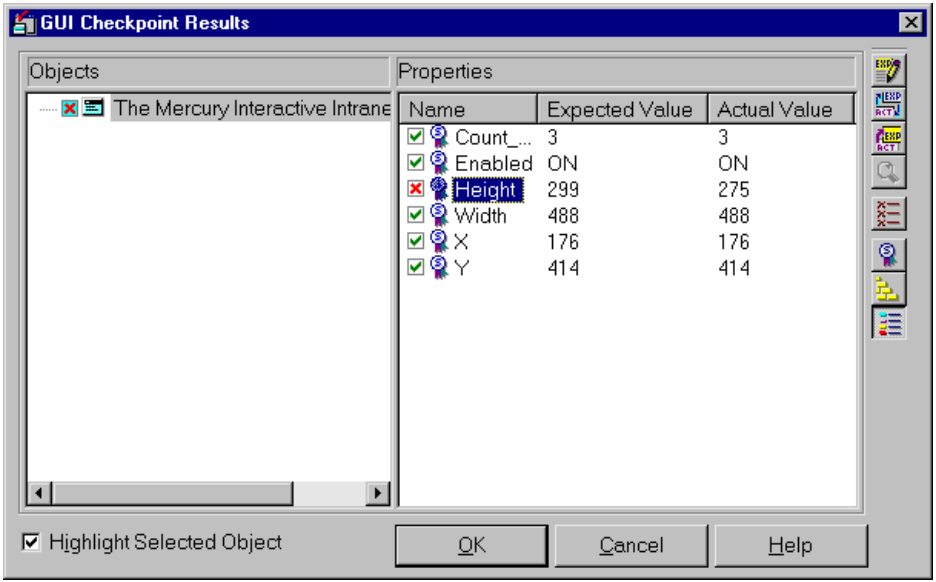
5 Click **OK** to close the GUI Checkpoint Results dialog box.

Viewing Results of a Standard Properties Check

You can view the results of a GUI checkpoint on standard properties using the GUI Checkpoint Results dialog box.

1 Open the Test Results window. In the test log, look for an **end GUI checkpoint** entry in the Event column.

2 Double-click an **end GUI checkpoint** entry in the Event column. The GUI Checkpoint Results dialog box opens.



For a standard checkpoint, the GUI Checkpoint Results dialog box lists the properties checked. Each check is marked as either passed or failed, and the expected and actual results are shown.

3 Click **OK** to close the dialog box.

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If you have any comments or suggestions regarding this document, please send them via e-mail to documentation@mercury.co.il.

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