WinRunner®

TSL Reference Guide

Version 7.01

MERCURY INTERACTIVE

TSL Reference Guide, Version 7.01

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

Mercury Interactive Corporation
1325 Borregas Avenue
Sunnyvale, CA 94089 USA

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Welcome to TSL

Welcome to TSL, Mercury Interactive's Test Script Language (TSL).

Using This Guide

This book is a comprehensive guide to Mercury Interactive's Test Script Language (TSL). It provides a detailed description of TSL and how to use it in your test scripts. It lists all TSL functions alphabetically and by category, and describes the parameters, return values, and availability for each function. This book assumes that you are already familiar with WinRunner. For information on using WinRunner, see the *WinRunner User's Guide*.

This book contains the following chapters:

Introduction

Provides an overview of TSL and the different types of TSL functions. Read this section to learn which groups of TSL functions are relevant for your product.

Language

Describes the basic elements of the TSL programming language, such as: constants and variables, operators and expressions, statements, control-flow, arrays, input/output.

Guidelinesfor Working with TSL

Provides guidelines to assist you in creating intuitive and readable test scripts and libraries.

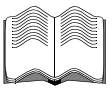
Functions by Category

Provides a list of TSL functions grouped according to the type of tasks they perform. Functions are arranged alphabetically within each category, and a brief description of each function is included.

Alphabetical Reference

Lists all TSL functions alphabetically. The name of each function is listed along with the type and the category to which it belongs. A description and complete syntax are provided. The definition of the function's parameters and its return values and availability are also described.

WinRunner Documentation Set



In addition to this guide, WinRunner comes with a complete set of documentation:

WinRunner Installation Guide describes how to install WinRunner on a single computer or a network.

WinRunner Tutorial teaches you basic WinRunner skills and shows you how to start testing your application.

WinRunner User's Guide explains how to use WinRunner to meet the special testing requirements of your application.

WinRunner Customization Guide explains how to customize WinRunner to meet the special testing requirements of your application.

Online Resources

WinRunner includes the following online resources:

Read Me First provides last-minute news and information about WinRunner.

What's New in WinRunner describes the newest features in the latest versions of WinRunner.

Books Online displays the complete documentation set in PDF format. Online books can be read and printed using Adobe Acrobat Reader 4.0, which is included in the installation package. Check Mercury Interactive's Customer Support web site for updates to WinRunner online books.

WinRunner Context-Sensitive Help provides immediate answers to questions that arise as you work with WinRunner. It describes menu commands and dialog boxes, and shows you how to perform WinRunner tasks. Check Mercury Interactive's Customer Support Web site for updates to WinRunner help files.

TSL Online Reference provides additional information on each function and examples of usage. You can open the *TSL Online Reference* from the WinRunner group in the Start menu or from WinRunner's Help menu. To open the online reference to a specific function, click the context-sensitive Help button and then click a TSL statement in your test script, or place your cursor on a TSL statement in your test script and then press the F1 key. Check Mercury Interactive's Customer Support Web site for updates to the *TSL Online Reference*.

WinRunner Sample Tests includes utilities and sample tests with accompanying explanations. Check Mercury Interactive's Customer Support Web site for updates to WinRunner sample tests.

Technical Support Online uses your default Web browser to open Mercury Interactive's Customer Support Web site.

Support Information presents Mercury Interactive's home page, its Customer Support web site, and a list of Mercury Interactive's offices around the world.

Mercury Interactive on the Web uses your default web browser to open Mercury Interactive's home page. This site provides you with the most up-to-date information on Mercury Interactive, its products and services. This includes new software releases, seminars and trade shows, customer support, training, and more.

Typographical Conventions

This book uses the following typographical conventions:

Bold	**Bold** text indicates function names and the elements of the functions that are to be typed in literally.
Italics	*Italic* text indicates variable and parameter names.
Helvetica	The Helvetica font is used for examples and statements that are to be typed in literally.
[ ]	Square brackets enclose optional parameters.
{ }	Curly brackets indicate that one of the enclosed values must be assigned to the current parameter.
...	In a line of syntax, three dots indicate that more items of the same format may be included. In a program example, three dots are used to indicate lines of a program that have been intentionally omitted.
|	A vertical bar indicates that either of the two options separated by the bar should be selected.

1

Introduction

The scripts you create with Mercury Interactive systems are written in Test Script Language (TSL). TSL is an enhanced, C-like programming language designed for testing. At the heart of Mercury Interactive's integrated testing environment, TSL is high-level and easy to use. It combines the power and flexibility of conventional programming languages with functions specifically developed for use with Mercury Interactive's products. This enables you to modify recorded material or to program sophisticated test suites.

This reference manual is intended to help you read, edit, and write TSL scripts. It contains a description of the programming language capabilities of TSL and a list of TSL functions.

This chapter provides overviews about:

- Function Types
- Analog Functions
- Context Sensitive Functions
- Customization Functions
- Standard Functions

Function Types

There are four types of TSL functions. Each type of function addresses a different requirement.

Function Type	Requirement
Analog	perform mouse and keyboard input
Context Sensitive	perform operations on GUI objects
Standard	perform basic programming-language operations
Customization	configure the testing tool according to your requirements

The functions that are available depend on which testing product you are using.

WinRunner: If you work with WinRunner, you can use functions from all of the categories. Some functions are supported only when working with applications developed in a specific environment such as PowerBuilder or Visual Basic. To check the availability of a specific function, click the Availability button at the top of the Help screen for that function.

LoadRunner GUI Vusers on PC platforms: This type of GUI Vuser uses WinRunner to create system load. For this reason, you can use functions from any of the categories. You can also use the LoadRunner functions described in the "GUI Vuser Scripts" section of the *LoadRunner Creating Virtual User Scripts User's Guide for Windows and UNIX Platforms*.

LoadRunner Scenarios: In LoadRunner scenario scripts (UNIX only), you can use standard functions in addition to the LoadRunner functions described in the *LoadRunner Controller User's Guide*.

Note for XRunner users: Many TSL functions are supported for both WinRunner and XRunner. For a list of these functions, refer to the *TSL Online Reference*.

Analog Functions

Analog functions record and execute operations at specified screen coordinates. When you record in Analog mode, these functions are used to depict mouse clicks, keyboard input, and the exact coordinates traveled by the mouse. When you run a test, Analog functions retrace the mouse tracks and exactly resubmit the input you recorded. Analog functions also support different test operations such as synchronization, verification, and text manipulation.

Analog functions are available for:

- WinRunner
- LoadRunner GUI Vusers on PC Platforms

Coordinate and Numbering Conventions

Many of the Analog functions refer to screen coordinates. In the system of coordinates used by Mercury Interactive's products, the origin (0,0 coordinate) is located in the upper left corner of the screen. The maximum value of *x* is the width of the screen, in pixels, minus one. The maximum value of *y* is the height of the screen, in pixels, minus one.

Context Sensitive Functions

Context Sensitive functions depict actions on the application under test in terms of GUI objects (such as windows, lists, and buttons), ignoring the physical location of an object on the screen. In Context Sensitive mode, each time you record an operation on the application under test (AUT), a TSL statement is generated in the test script which describes the object selected and the action performed.

Context Sensitive functions are available for:

- WinRunner
- LoadRunner GUI Vusers on PC Platforms

Context Sensitive Object Naming Conventions

Most Context Sensitive functions include parameters which refer to an object's logical name.

Note that you can replace the logical name of the object with the physical description. During recording, the logical name is automatically used by the system. However, the function will also work with the physical description of the object.

For example, the syntax of **button_press** function is:

button_press (*button* **[,** *mouse_button* **]);**

The *button* parameter may be the logical name of the button—for example:

```
button_press("OK");
```

But it can also be the physical description—for instance:

```
button_press("{class:push_button, label:\"OK\"}");
```

Numbering Conventions

Numbering for most Context Sensitive functions starts from 0. For example, the function **list_get_item** returns 0 for the first item of the given list.

Position coordinates for the "edit" Context Sensitive functions, such as **edit_get_info**, are denoted by row and column. The first row is numbered "0." Columns are denoted by insertion position, not by character index. In other words, the position before the first character in any line is "0", the position between the first and second characters is "1", and so on.

Customization Functions

Customization functions allow you to enhance your testing tool so that it better supports your specific needs. For example, you can add functions to the Function Generator, or create custom GUI checkpoints.

Customization functions are available for WinRunner.

Standard Functions

Standard functions include the general elements of a programming language, such as basic input and output, control-flow, mathematical, and array functions. By combining these elements with Analog and Context Sensitive functions, you can transform a simple test into an advanced testing program.

Standard functions are available for all Mercury Interactive products.

2

Language

This chapter describes the basic elements of the TSL programming language, including:

- Variables and Constants
- Operators and Expressions
- Statements
- Control Flow
- Arrays
- Input-Output
- Comments
- Built-in Functions
- User-Defined Functions
- External Function Declarations

Variables and Constants

Variables and constants may be either strings or numbers. Declaration is optional; if variables are not declared, their type is determined at run time according to their context.

Variable names can include English-language letters (a-z and A-Z), digits, and underscores (_). The first character must be a letter or an underscore. TSL is case-sensitive; *y* and *Y* are therefore two different characters. Note that names of built-in functions and keywords (such as if, while, switch) cannot be used as variable names.

Types of Variables and Constants

TSL supports two types of constants and variables: *numbers* and *strings*. Numbers may be either integer or floating point, and exponential notation is also acceptable. For example, -17, .05, -3e2, and 3E-2 are all legal values.

Strings consist of a sequence of zero or more characters enclosed within double quotes. When a backslash (\) or double-quote (") character appears within a string, it must be preceded by a backslash. Special characters can be incorporated in a string using the appropriate representation:

backspace	\b	vertical tab	\v
carriage return	\r	newline	\n
formfeed	\f	octal number	\ooo
horizontal	\t		

In the case of octal numbers, the zeroes represent the ASCII code of a character. For example, “\126” is equivalent to the letter “v.”

For example, to represent the string “The values are: 12 14 16”, type:

```
"\"The values are:\t12\t14\t16\""
```

At a given moment, the value of a constant or variable can be either a string or a number. The TSL interpreter determines the type according to the operation performed. For example:

```
x = 123;
s = x & "Hello";
y = x + 1;
```

Variable *x* is assigned the value *123*. In the second statement, because the operation is concatenation (&), *x* is treated as a string. The interpreted value of *s* is therefore *123Hello*. In the third line, because the operation is addition, *x* is treated as a number. Variable *y* is therefore assigned the value *124*.

In the case of an expression where a mathematical operation is performed on a string, such as

```
"6RED87" + 0
```

the numeric value of the string is the first part of the string that can be evaluated to a number. Here, the numeric value of the expression is 6.

Since relational operators are valid for both strings and numbers, a numeric comparison is always performed if both operands can be evaluated to a number. For instance, in the relational expression below,

```
"0.01" == "1e-2"
```

although both constants are written like strings (enclosed within quotation marks), both expressions are also valid numbers so a numeric comparison is performed. But in the next expression,

```
"0.01" == "1f-2"
```

the second expression is not a number, so a string comparison is performed.

Undeclared Variables

If a variable is not declared, it is created implicitly when it is assigned or used in an expression. If a variable is not initialized, it is given the string value "" (null) at run time.

All undeclared variables are global, unless they are on the formal Parameter List of a called test. For more information on parameters, see the *WinRunner User's Guide*.

Variable Declarations

Note that while constant and variable declarations are optional in tests, they are required in user-defined functions. Variable declarations have the following syntax:

class variable [= *init_expression*];

The *init_expression* assigned to a declared variable can be any valid expression. If an *init_expression* is not set, the variable is assigned an empty string. The variable *class* can be any one of the following:

auto: An auto variable can only be declared within a function and is local to that function. It exists only while the function is running. A new copy of the variable is created each time the function is called.

static*:* A static variable is local to the function, test, or compiled module in which it is declared. The variable retains its value until the test is terminated by a Stop command.

public*:* A public variable can only be declared within a test or module, and is available for all functions, tests, and compiled modules.

extern*:* An extern declaration indicates a reference to a public variable declared outside of the current test or module.

With the exception of the auto variable, all variables continue to exist until the Stop command is executed. For example, the statement

```
static a=175, b=get_time( ), c = 2.235;
```

defines three variables (a, b, and c), and assigns each an initial value. This value is retained between invocations of the test. The following script segment demonstrates how a static variable can be used so that a message is printed only the first time that the test, T_2, is called.

```
static first = 1;
    pause ("first = " & first);
    if (first == 1) {
    first = 0;
    report_msg ("Test T_2 was called.");
}
```

The following table summarizes the scope, lifetime, and location of the variable declarations for each class:

Declaration	Scope	Lifetime	Declare the variable in...
auto	local	end of function	function
static	local	until stop	function, test, or module
public	global	until stop	test or module
extern	global	until stop	function, test, or module

Constant Declarations

The **const** specifier indicates that the declared value cannot be modified. The syntax of this declaration is:

[*class*] **const** *name* [= *expression*];

The *class* of a constant may be either public or static. (If no class is explicitly declared, the constant is assigned the default class public.) Once a constant is defined, it remains in existence until the Stop command is executed.

For example, defining the constant TMP_DIR using the declaration:

```
const TMP_DIR = "/tmp";
```

means that the assigned value /tmp cannot be modified. (This value can be changed only by explicitly making a new constant declaration for TMP_DIR.)

Operators and Expressions

TSL supports six types of operators: arithmetical, concatenation, relational, logical, conditional, and assignment. Operators are used to create expressions by combining basic elements. In TSL, expressions can consist of constants, variables, function calls, and other expressions.

Arithmetical Operators

TSL supports the following arithmetical operators:

+	addition
-	subtraction (unary)
-	subtraction (binary)
*	multiplication
/	division
%	modulus
^ or **	exponent
++	increment (adds 1 to its operand - unary operator)
--	decrement (subtracts 1 from its operand - unary operator)

The result of the modulus operation is assigned the sign of the dividend. For example:

```
7 % -4 = 3
-4.5 % 4 = -0.5
```

The increment and decrement operators may be placed before the variable (++*n*), or after (*n*++). As a result, the variable is incremented either before or after the value is used. For example:

```
i = 5;
j = i++;
k = ++i;
print(i & j & k);
```

prints the values 7, 5, 7. Note that the increment and decrement operators may be applied only to variables, and not to expressions, such as (a + b).

Concatenation Operator

The ampersand (&) character is used to concatenate strings. For example, the statement

```
x = "ab" & "cd";
```

assigns the string value *abcd* to variable *x*.

Relational Operators

The relational operators used in TSL are:

>	greater than
>=	greater than or equal to
<	less than
<=	less than or equal to
==	equal to
!=	not equal to

Relational expressions are evaluated to the value 1 if true, and 0 if false. When the value of an expression is null or zero, it is considered false. All other values are considered true.

Strings are compared character by character according to their ASCII value. Letter strings are evaluated in terms of alphabetical order; the string which comes first alphabetically is considered smaller. For instance, “galactic” < “galaxy”.

Logical Operators

Logical operators are used to create logical expressions by combining two or more basic expressions. TSL supports the following logical operators:

&&	and
||	or
!	not (unary)

Logical expressions are assigned the value 1 if true, and 0 if false. When the value of an expression is null or zero, it is considered false. All other values are considered true. Logical expressions are evaluated from left to right, and as soon as the value of an expression is determined, interpretation stops. For example, in the expression

```
(g != 0) && (d/g > 17)
```

if the first expression is false, then the second expression is not evaluated.

Conditional Operator

The conditional operator is the ? (question mark) character. Conditional expressions have the format:

expression1 **?** *expression2* **:** *expression3*

expression1 is evaluated first; if it is true, expression2 is evaluated and becomes the value of the expression. If expression1 is false (zero or null), then *expression3* is executed and becomes the value of the expression. In the following statement,

```
(g != 0) ? 17 : 18;
```

if the first expression is true (*g* is not equal to zero), then the value of the conditional expression is 17. If the first expression is false, then the value of the conditional expression is 18.

For more information, see “Control Flow” on page 17.

Assignment Operators

Assignment operators are used to assign values to variables and arrays. All of the binary arithmetical operators have corresponding assignment operators:

Operator	Example	Meaning
=	a = b	assign the value of *b* to *a*
+ =	a += b	assign the value of *a* plus *b* to *a*
- =	a -= b	assign the value of *a* minus *b* to *a*
* =	a *= b	assign the value of *a* times *b* to *a*
/ =	a /= b	assign the value of *a* divided by *b* to *a*
% =	a %= b	assign the value of *a* modulo *b* to *a*
^= or **=	a ^ = b	assign the value of *a* to the power of *b* to *a*

For example, in the following segment of a test script,

```
for (i=0; i<200; i+=20)
    move_locator_abs(i,i);
```

the value of *i* is incremented by 20 after each repetition of the loop. The mouse pointer is then moved to the new position defined by *i*. For more information about for loops see “Control Flow” on page 17.

Precedence and Associativity of Operators

The rules of precedence and associativity determine the order in which operations are performed when more than one operator appears in an expression. Operators with higher precedence are interpreted before operators with lower precedence. For example, multiplication is performed before addition.

When more than one operator of the same level of precedence appears in an expression, the associativity indicates the order in which they are interpreted. For example, in

```
x / 2 + i - q
```

division is performed first. Addition is performed before subtraction because the associativity of these operators, which have the same level of precedence, is left to right.

The following table lists the precedence, in descending order, and the associativity of operators:

Operator (in order of precedence)	Associativity
( ) (parentheses)	none
++ --	none
^ **	right to left
! - + (unary)	none
* / %	left to right
+ - (binary)	left to right
&	left to right
< <= > >= == !=	none
in (array operator)	none
&&	left to right
||	left to right
?	right to left
= += -= *= /= %= ^= **=	right to left

Statements

Any expression followed by a semicolon is a statement. A statement can continue beyond one line.

In a control-flow structure, a single statement can be replaced by a group of statements, or block. Statements are grouped by enclosing them within curly brackets { }. Each individual statement within brackets is followed by a semicolon, but the brackets themselves are not. This is illustrated below:

```
for (i = 0; i < 10; i++) {
    st = "Iteration number " & i;
    type (st);
}
```

Control Flow

TSL control-flow statements include:

- *if/else* and *switch* for decision-making
- *while*, *for*, and *do* for looping
- *break* and *continue* for loop modification

If/Else Statement

TSL provides an *if/else* statement for decision-making. The *else* clause is optional. The syntax of this statement is:

if (*expression* **)**
    statement1
[**else**
    statement2]

The *expression* is evaluated; if the value of the *expression* is true (nonzero or non-null), *statement1* is executed; if the value is false (zero or null), and the [else *statement2*] clause is included, *statement2* is executed.

When if statements are nested, the TSL interpreter associates each *else* with the if that appears closest to it. For example, a statement such as:

```
if (b1) if (b2) s1; else s2;
```

is interpreted as follows:

```
if (b1) {
    if (b2)
        s1;
    else
        s2;
}
```

The following example shows how to use an if/else statement with multiple TSL statements:

```
if ( win_exists(...) == E_OK)
{
    win_activate(...);
    set_window(...);
}
else
    invoke_application(...);
```

Switch Statement

The *switch* statement provides the mechanism for a multi-way decision. The syntax of this structure is:

switch (*expression* **)**
{
    case *case_expr1***:**
        statement(s)
    case *case_expr2***:**
        statement(s)
    case *case_exprn***:**
        statement(s)
[**default:** *statement(s)*]
}

The *switch* statement consecutively evaluates each of the enumerated case expressions (*case_expr1, case_expr2,.... case_exprn*), until one is found that equals the initial *expression*. If no case expression is equal to the specified *expression*, then the optional default statements are executed.

Note that the first time a case expression is found to be equal to the specified initial *expression*, no further case expressions are evaluated. However, all subsequent statements enumerated by these cases are executed, unless you use a *break* statement within a case to end the loop. For example:

```
switch (a) {
case"xyz":
    b = a & "tw";
    break;
case"uv":
    pause ("hello");
    x = a;
    break;
default:
    x = a;
}
```

Note that while the initial expression can be any regular expression, case expressions can only be constants or variables.

Looping Statements

TSL provides several statements that enable looping.

while (*expression* **)**
    statement

While the *expression* is true, the *statement* is repeatedly executed. At the start of each repetition of the loop, the *expression* is evaluated; if it is true (nonzero or non-null), the *statement* is executed, and the *expression* is re-evaluated. The loop ends when the value of the *expression* is false. For example,

```
i = 1;
while (i < 21)
    type (i++);
```

types the value of *i* 20 times.

for ([*expression1*]**;** [*expression2*]**;** [*expression3*]**;)**
    statement

First, *expression1* is implemented as the starting condition. While *expression2* is true, the *statement* is executed, and *expression3* is evaluated. The loop repeats until *expression2* is found to be false. This statement is equivalent to:

```
expression1              # state initial condition
while (expression2) {    # while this is true
    statement            # perform this statement and
    expression3          # evaluate this expression
}
```

For example, the *for* loop below performs the same function as the *while* loop above.

```
for (i=1; i<21; i++)
    type (i);
```

Note that if *expression2* is missing, it is always considered true, so that

```
for (i=1;i++)
    type (i);
```

is an infinite loop.

```
do
    statement
while ( expression );
```

The *statement* is executed and then the *expression* is evaluated. If the *expression* is true, then the cycle is repeated. This statement differs from the *while* and *for* statements in that the *expression* is evaluated at the end. Therefore, the loop is always executed at least once. For example, in the following statement,

```
i = 20;
do
    type (i++);
while (i < 17);
```

the structure of the loop ensures that the value of *i* is typed at least once.

Loop Modification

The following statements can be used to exit a loop or to jump to the next iteration.

break;
The *break* statement causes an exit from within a loop. If loops are nested, *break* affects the innermost *for*, *while*, or *do* loop that encloses it.

For example, a *for* loop where *expression2* is undefined can be terminated using *break*:

```
for (i = 1;; i++) {
    type (i);
    if (i > 29)
        break;
}
continue;
```

The *continue* statement causes the next cycle of the loop to begin. In a *do/while* loop, execution resumes with the test expression. In a *for* loop, execution resumes with *expression3*. For example:

```
for (i = 1; i<=300; i++) {
    if (i % 3 != 0) {
        continue; # to next number
    }
    ...              # long processing
    type(i & "<kReturn>");
}
```

Here, a certain process should only be performed on every third number. Therefore, if *i* cannot be divided equally by three, execution continues with the next iteration of the loop.

Arrays

TSL supports associative arrays. Arrays in TSL are unique in that:

- Array declaration and initialization are optional.
- Each element has a user-defined string subscript.

Rather than arrays of fixed length with numeric subscripts, TSL arrays contain an undefined number of elements, each with a user-defined string subscript.

For example, the statement

```
capitals["Ohio"] = "Columbus";
```

assigns the value "Columbus" to the element with subscript "Ohio" in the array *capitals*. If array elements are not declared, they are created the first time they are mentioned and the order of the elements in the array is not defined. Any uninitialized array element has the numeric value zero and the string value null ("").

Arrays can be used to store both numbers and strings. In the following test script, an array is used to store a series of dates and times:

```
for (i=0; i<5; i++) {
    date = time_str();
    date_array[i] = date;
    wait(5);
}
```

Here, each array element includes the date and time of the call to the **time_str** function. The subscript of the array element is the value of *i*.

Array Declaration

Array declaration is optional within a test but required within user-defined functions (initialization is optional). Using the following syntax, you can define the class and/or the initial expression of an array. Array size need not be defined in TSL.

class *array_name* **[ ]** [**=***init_expression*]

The array *class* may be any of the classes listed under Variable Declarations. The *init* expression can take one of two formats: C language syntax, or a string subscript for each element.

An array can be initialized using the C language syntax. For example:

```
public hosts [ ] = {"lithium", "silver", "bronze"};
```

This statement creates an array with the following elements:

```
hosts[0]="lithium"
hosts[1]="silver"
hosts[2]="bronze"
```

Note that, as in C, arrays with the class *auto* cannot be initialized.

In addition, an array can be initialized using a string subscript for each element. The string subscript may be any legal TSL expression. Its value is evaluated during interpretation or compilation. For example:

```
static gui_item [ ]={
    "class"="push_button",
    "label"="OK",
    "X_class"="XmPushButtonGadget",
    "X"=10,
    "Y"=60
    };
```

creates the following array elements:

```
gui_item ["class"]="push_button"
gui_item ["label"]="OK"
gui_item ["X_class"]="XmPushButtonGadget"
gui_item ["X"]=10
gui_item ["Y"]=60
```

Array Initialization

Arrays are initialized once during a test run. The TSL interpreter maintains the original initialization values throughout the test run. If you edit an array's initialization values, the new values will not be reflected during test execution. To reset the array with new initialization values, perform one of the following:

- stop/abort the test run
- define the array elements explicitly

When you stop the test run, all of the script's variables are destroyed. The next time you execute the script, the array is initialized with the new values.

Alternatively, you can explicitly define an array's elements. When you assign a value to each array element, you ensure that the array is updated with the new values for each test run. In the following example, the regular array initialization is replaced with explicit definitions:

Regular Initialization	Explicit Definitions

public array[] = {1,2,3};	array[0] = 1;
	array[1] = 2;
	array[2] = 3;

Multidimensional Arrays

TSL supports multidimensional arrays such as a[i,j,k]. Multidimensional arrays can be used like records or structures in other languages. For example, the following script uses a multidimensional array to store the date and time:

```
for (i = 0;i < 10; i++) {
    date=time_str();
    split(date,array," ");
    multi_array[i, "day"] = array[1];
    multi_array[i, "time"] = array[4];
    wait(5);
}
```

TSL simulates multidimensional arrays using one-dimensional arrays. The element multi_array[i_1, i_2,...i_n] is stored in the one-dimensional array called multi_array, in the element [i_1 & SUBSEP & i_2 & SUBSEP... & i_n]. (The variable SUBSEP has the initial value "\034," but this value may be changed.)

Multidimensional arrays can also be declared and initialized, as described above. For example, a multidimensional array could be initialized as follows:

```
static rectangles [ ] = {
    {153, 212, 214, 437},
    {72, 112, 88, 126},
    {351, 312, 399, 356}
   }
```

The in Operator

The *in* operator is used to determine if a subscript exists in an array.

subscript **in** array;

returns the value 1 if the subscript exists, and 0 if it does not. It can be used in a conditional statement, like the one below which checks whether the element with the subscript *new* exists in the array *menu_array:*

```
if ("new" in menu_array)
```

The operator *in* should be used rather than the following statement:

```
if (menu_array["new"] != "")...
```

because this statement causes the element to be created, if it does not already exist. (Recall that array elements are created the first time they are mentioned.)

The *in* operator can also be used for multidimensional arrays. The subscript of the element is enclosed in parentheses, as in the following statement:

```
if (("new.doc", 12) in multi_array)...
for ( element in array ) statement
```

causes the *element* to be set to the subscript of each element in the *array*. The statement is executed once for each element of the array, and the loop is terminated when all elements have been considered. The order in which the subscripts are read is undefined. The sample script below reads an array for which each element is a date and time string. A *for* loop is used to print to the screen each of the elements of the array.

```
for (i in date_array)
    print ("the date was " & date_array[i]);
```

Specifying a Starting Subscript

TSL allows you to assign values to array elements starting from a specific subscript number. You specify the starting subscript in the array initialization. Remember that the array subscripts are zero-based—the first subscript number is 0.

abc[ ] = {*starting subscript = value1, value2, value3...* }

For example, if the array size is ten, you can assign values to the last five elements of the array:

```
public abc[ ] = {5 = 100,101,102,103,104}
```

As a result, the abc array receives the following values:

```
abc[5]=100
abc[6]=101
abc[7]=102
abc[8]=103
abc[9]=104
```

Array Functions

TSL provides two array functions: **delete** and **split**. The **delete** function removes an element from an array; **split** splits a string into fields and stores the fields in an array. Note that since TSL arrays are associative, deleting one element does not affect any other element. For instance, if you delete the element a[2] from an array with three elements, a[1] and a[3] will not be affected. For details, see the alphabetical reference.

Input-Output

TSL provides a number of built-in functions that allow you to read and write to files or to the screen.

For UNIX products, the **sprintf** function returns a formatted string to a variable.

For WinRunner and other PC products, use the **file_open** function to open a file for reading and writing. The **file_printf** function writes to a file, and **file_getline** reads from a file. The **file_close** function closes a file that you opened with **file_open**.

There are two functions that generate output within the testing environment. The **report_msg** function prints a user-defined string expression to the test run report. The **pause** function stops the test run and displays a string expression in a message box on the screen.

For more information on any of the TSL built-in functions, refer to the *TSL Online Reference*.

Comments

A number sign (#) indicates that all text from this point to the end of the line is a comment. Comments can appear within statements that extend beyond one line, or can stand alone on a line of test script. The TSL interpreter does not process comments. For example,

```
# Type the date
i=1
while (i<=31)# number of days in month
    type ("The date is January " & i++ & ", 1994");
```

Note that a number sign (#) that appears within a string constant is not considered a comment; for instance, a="#3".

Built-in Functions

TSL provides numerous built-in functions that perform a range of tasks. To call a built-in function from within a test script, use the following syntax:

function ([*parameters*]);

Most built-in functions return a value. This value can be assigned to a variable. For example,

```
x = int(12.42);
```

The **int** function returns the integer portion of a positive, real number. Here, x is equal to 12.

The return value of a built-in function can also become part of an expression. When a function returns the value 0, the value of the expression is considered false. When it returns any other value, it is considered true. For example,

```
while (getline address < "clients.doc")
    type (address "<kReturn>");
```

The **getline** function returns the value 1 if it succeeds, and 0 at the end of the file. Therefore, the *while* loop above continues until the end of the file is reached (the function returns the value 0).

For detailed information on each of the TSL functions, refer to the *TSL Online Reference*.

User-Defined Functions

In addition to the built-in functions it offers, TSL allows you to design and implement your own functions in test scripts. A user-defined function has the following structure:

[*class*] **function** *name* **(** [*mode*] *parameter...* **)**
{
declarations;
statements;
}

Class

The class of a function may be either public or static. If no class is explicitly declared, the function is assigned the default class public. A public function is available to all tests; a static function is available only to the test or compiled module within which the function was defined.

Parameters

Function parameters can be of mode *in*, *out*, or *inout*. For all non-array parameters, the default mode is in. The significance of each parameter type is as follows:

in: A parameter which is assigned a value from outside the function.

out: A parameter which passes a value from inside the function.

inout*:* A parameter which can be assigned a value from outside the function as well as pass on a value to the outside.

A parameter designated as *out* or *inout* must be a variable name, not an expression. Only a variable can be assigned a value in a function call, not an expression. For example, consider a function defined in the following manner:

```
function my_func (out p) {... }
```

Proper usage of the function call is: `my_func (var_1);` Illegal usage of the function call is: `my_func (arr[i] );` `my_func (a+b);` because arr[i] and a+b are expressions.

Array parameters are designated by square brackets. For example, the following parameter list indicates that parameter *a* is an array:

```
function my_func (a[], b, c){
...
}
```

Array parameters can be either *out* or *inout*. If no class is specified, the default *inout* is assumed.

While variables used within a function must be explicitly declared, this is not the case for parameters.

Declarations

Variables used by a function must be declared. The declaration for such a variable can be within the function itself, or anywhere else within the test or module. For syntax, see “Variable Declarations” on page 9 in this chapter.

Return Statement

Any valid statement used within a TSL test script can be used within a function. In addition, the *return* statement is used exclusively in functions.

return [*expression*]**;**

This statement halts execution of the called function and passes control back to the calling function or test. It also returns the value of the evaluated expression to the calling function or test. (If no expression is attached to the return statement, an empty string is returned.) For additional information on functions, refer to the *TSL Online Reference*.

External Function Declarations

The extern function declaration is used to declare functions that are not part of TSL, but reside in external C libraries. For more information on using C functions stored in external dlls, refer to your *User's Guide*.

The extern declaration must appear before the function can be called. The syntax of the extern function declaration is:

extern *type function_name* **(** *param1*, *param2*,...**);**

The *type* refers to the return value of the function. Type can be one of the following:

- *char* (signed and unsigned)*float*
- *short* (signed and unsigned)*double*
- *int* (signed and unsigned)*string* (equivalent to C char*)
- *long* (signed and unsigned)

Each parameter must include the following information:

[*mode*] *type* [*name*] [< *size* >]

mode	The *mode* can be *in*, *out*, or *inout*. The default is *in*. Note that these values must appear in lower case.
type	The *type* can be any of the values listed above.
name	An optional *name* can be assigned to the parameter to improve readability.
size	This information is required only for an *out* or *inout* parameter of type *string*. (See below.)

For example, to declare a function named set_clock that sets the time in a clock application, you write the following:

```
extern int set_clock ( string name, int time );
```

The set_clock function accepts two parameters. Since they are both input parameters, no mode is specified. The first parameter, a string, is the name of the clock window. The second parameter specifies the time to be set on the clock. The function returns an integer that indicates whether the operation was successful.

Once the extern declaration is interpreted, you can call the set_clock function the same way you call a TSL built-in function:

```
result = set_clock ( "clock v. 3.0", 3 );
```

If an extern declaration includes an *out* or *inout* parameter of type *string*, you must budget the maximum possible string size by specifying an integer *size* after the parameter *type* or (optional) *name*. For example, the statement below declares the function get_clock_string. It returns the time displayed in a clock application as a string value in the format “The time is...”

```
extern int get_clock_string ( string clock, out string time <20> );
```

The *size* should be large enough to avoid an overflow. If no value is specified for *size*, the default is 127. There is no maximum size.

TSL identifies the function in your C code by its name only. You must pass the correct parameter information from TSL to the C function. TSL does not check parameters: if the information is incorrect, the operation fails.

In addition, your C function must adhere to the following conventions:

- Any parameter designated as a *string* in TSL must be associated with a parameter of type *char** in C.
- Any parameter of mode *out* or *inout* in TSL must be associated with a pointer in C. For instance, a parameter *out int* in TSL must be associated with a parameter *int** in the C function.
- For WinRunner the external function must observe the standard Pascal calling convention *export far Pascal*.

For example, the following declaration in TSL:

extern int set_clock (string name, inout int time);

must appear as follows in C:

```
int _far _pascal _export [_loads] set_clock (
        char* name,
        int* time
)
```

3

Guidelines for Working with TSL

This chapter provides guidelines to assist you in creating intuitive and readable test scripts and libraries. There are several advantages to using these guidelines:

- Uniformity - Shorter learning curve for new test engineers.
- Clarity - Scripts and functions are easier to read, maintain, and debug.
- Customer Support - Mercury CSO engineers can easily understand scripts, which results in faster support.

The following guidelines are offered as suggestions. There is an infinite number of styles for creating a test. If you are partial to another style, use the style with which you are most comfortable.

This chapter provides guidelines for working with TSL in the following areas:

- Test Scripts
- Flow Control
- Return Values
- Path Names
- tl_step Function
- GUI Map
- Libraries and Functions

Test Scripts

Test Header

The test header is inserted at the top of the test script, enclosed with the # symbol. It contains necessary information about the test:

- Test Name
- Subject
- Test Creator
- Date of creation/Date of revision
- Purpose of the test
- Vital information (for example, initial conditions, variable information, state of AUT, and so on.)

The following is an example of a test header:

```
#####################################################################
# TEST NAME: Open Order
# DATE: 12/12/95
# DATE OF LAST REVISION: 2/14/96
# CREATED BY: John Smith
#
# PURPOSE: Verify that the correct orders are retrieved from the database
# INITIAL STATE: Application's main window is open, all others are closed.
# PARAMETERS: None
#####################################################################
```

Constant Declaration

Constants (const) should be defined at the top of the test. When defining a constant in a particular test, the syntax is as follows:

static const <CONST_NAME> = <const_value>;

Constant name should be in capital letters and underscores; spaces are not allowed. For example:

```
static const NUMBER_OF_FILES = 3;
static const PATH_OF_FILES = "C:\\TESTS\\FILES";
```

You should not define a constant as public in a test, since a constant defined in one test might subsequently be used in another test as a different value. A constant declared as public should be defined in a library or an initialization test, where it can be used by all tests within a testing session or batch run.

Variable Declaration

Variables used in a test should be declared below the constant declarations and test header. Because TSL is an interpretive language, variables are automatically defined when they are assigned. Therefore, variable declaration should be used for the purpose of holding information that the tester might have to change in order to ensure a successful test run.

When defining a variable, the syntax is as follows:

```
[static/public] <variable_name> = [<variable_value>];
```

Variable names can include letters, underscores, and digits. For example:

```
public my_first_variable = 7;
public MyFirstVariable;
static myFirstVariable = "Hello World!";
```

You should not mix underscores and upper case letters.

There are two ways to initialize a variable:

- [static/public] x = 1;
- [static/public] x;
  x = 1;

Functionally, the two choices are the same. The difference is that the variable *x* cannot be reinitialized by the technique in example 1 (all on one line). To ensure that a variable can be reinitialized, use the technique in example 2. For example:

Test A:

```
public x = 1;
x = 5 + y;
...
```

Test B:

```
call A();
call A();
```

When you run test B, the second call to test A will not reinitialize x. Use the technique in example 2.

Note the way that the test initializes variables. In a batch run, separate tests might have the same variable names. It is important to ensure that they are reinitialized for each test; otherwise a test might not replay correctly.

Array Declaration

Array declarations should occur with variable declarations. Because TSL is an interpretive language, array declaration is optional. Arrays should be declared when they store information that the tester might change from one test run to another.

When declaring a standard array whose indices are: 0,1,2...,n; the syntax is as follows:

```
[static/public] <array_name> [0]= <value_0>;
<array_name>[1] = <value_1>;
...
<array_name>[n] = <value_n>;
```

For example:

```
public capital[0] = "Sacramento";
capital[1] = "Austin";
capital[2] = "Albany";
```

Declaring associative arrays follows the same syntax:

```
[static/public] <array_name>["string_1"] = <value_1>;
...
<array_name>["string_n"] = <value_2>;
```

For example:

```
public capital["California"] = "Sacramento";
capital["Texas"] = "Austin";
capital["New York"] = "Albany";
```

User-Defined Functions

User-defined functions should be defined after the variable declarations. Functions should be declared as static. They can be accessed only by the test in which they reside. Functions declared as public should be placed in a function library. For further information, see “Libraries and Functions” on page 45.

Comments

Comments are essential for clear and intuitive test scripts. A number sign (#) indicates that the text from this point to the end of the line is a comment. Comments can appear within statements that extend beyond one line, or they can stand alone on a line of a test script. They should always begin in the same column as the lines of the script on which they are commenting. When you run a test, the TSL interpreter does not process comments. For example:

```
# This is a comment
set_window ("Window_Name");
button_press ("Button_Name");

# This is also a comment. Checks if window exists
if (win_exists ("Window_Name") == E_OK) {
activate_window ("WinName");
```

Flow Control

Flow control statements should be indented one tab length for easier readability.

If / Else

TSL provides an *if/else* statement for decision-making. The *else* clause is optional. The syntax is as follows:

```
if   (<condition>) {
    statement_1;
    ...
    statement_n;
        }
else {
    statement_1;
    ...
    statement_n;
        }
```

For Loops

For loop syntax is as follows:

```
for (<initial condition>; <end condition>, <index increment/decrement>) {
    statement_1;
    statement_n;
    }
```

While Loops

While loop syntax is as follows:

```
while (<condition>) {
    statement_1;
    ...
    statement_n;
    }
```

Do Loops

Do loop is executed at least once. Syntax is as follows:

```
do {
    statement_1;
    ...
    statement_n;
    }
while (<condition>)
```

Return Values

Error Codes

Every TSL statement generates a *return value*. Statements within a test script can be checked for specific error codes to indicate whether the statements were executed successfully. You can branch your test according to the return value.

When checking return values, you should use the name instead of the numeric value.

The following bits of script all have the same functionality:

```
a) if (win_exists ("Window_Name") == 0) {
    set_window ("Window_Name");
    ...

b) if (!win_exists ("Window_Name")) {
    set_window ("Window_Name");
    ...

c) if (win_exists ("Window_Name") == E_OK) {
    set_window ("Window_Name");
    ...
```

The win_exists() statement returns the value 0 when executed successfully. For readability purposes, example c is recommended. The return value checked is the constant E_OK, whose value is equal to 0.

There is a complete list of generated return values in Chapter 6, “Return Values.” In addition, TSL enables you to create your own error codes. Use the following conventions:

- Error codes should be in capital letters.
- Error codes should begin with the letter “E” followed by an underscore (for example, E_MY_ERROR).
- Error code numbers should include a dash “-” followed by a five digit value (for example, *-31001*).
- Error codes should be defined as public in a library or initialization test (for example, **public** const E_MY_ERROR = -31001).

Return Codes

The variable **rc** is used for checking return codes from a TSL statement. For example:

```
rc = activate_window ("Window Name");
if (rc!= E_OK)
report_message ("Could not activate Window Name");
```

The above example verifies that the activate_window() function is successful by checking the return code. The return value is E_OK.

Path Names

The rule regarding path names is simple: do not use absolute (hardcoded) path names. Because pathnames are so dynamic, you should always to use variables that hold the name of the path in a test script. For example, the line:

```
GUI_load ("c:\\files\\my_file.gui");
```

should be replaced with:

```
path = "c:\\files\\";
GUI_load (path & "my_file.gui");
```

In the case where path names are not parameters, substituting a variable involves a bit more work. For example:

```
call "c:\\tests\\my_test" ();
```

contains a path name that is not a parameter. To replace a hardcoded path name with variables, an *eval* statement must be used. For example:

```
pathname = "\"c:\\\\tmp\\\\";
eval ("call " & pathname & "my_test\" ();");
```

tl_step Function

The **tl_step** is an extremely useful function for two reasons:

- It enables you to enhance a test report by naming a step, giving it a *pass* or *fail* status. It provides additional information as to why a step passed or failed.
- It can give the entire test a *fail* status without the use of *check_gui* or *check_window*.

You should use the **tl_step** function after every verification point in a test script. In addition, a test that contains a **tl_step** can be imported into the TestDirector test set immediately.

The recommended construction of a **tl_step** statement is as follows:

```
rc = check_gui (5, "Open Order", "list1.ckl", "gui_1");
#verification point
if (rc != E_OK) {
    tl_step ("Init state", 1, "Initial state of Open Order window was incorrect");
    }
else {
    tl_step ("Init state", 0, "Initial state of Open Order window was correct");
    }
```

In the above example, the **tl_step** statement is used twice: once for failure, and once for success. You should use this construction for readable and informative test reports.

GUI Map

A script generated by WinRunner in Context Sensitive mode is relatively intuitive. However, you can make the test even more intuitive using your GUI map.

You can modify the logical names for objects, as they appear in a test script, for further clarity. For instance, when recording a script in WinRunner, a statement such as the following might be generated:

```
button_press ("ThunderSSCommand_0");
```

You can modify the statement as follows:

```
button_press ("NewOrder");
```

Now you can see what button was pushed after that statement was executed. This new logical name is much more readable and intuitive. To ensure that a readable and logical name is recorded in your script, remember to create the GUI map before recording. Modify logical names as you proceed, wherever necessary.

Note that creating and editing the GUI map before any script has been created will save you having to modify an existing script.

Libraries and Functions

A library is a test consisting of constant declarations and user-defined function declarations. Once the test is completed, it is converted into a module where it can be compiled and loaded into memory, allowing all tests public access to the declarations and functions inside.

Library Header

The format for the header is much like the header for a test script. It is enclosed by the "#" symbol and contains the following information:

- Library Name
- List of functions

For example:

```
##################################################################
# COMPLIED MODULE: flt_lib
#
# FUNCTION:
#   -STATIC
#   - get_flight_from_table()
#   - set_table_fields ()
#   - set_working_dir ()
#
#   -PUBLIC
#   - open_order ()
#   - delete_order ()
#   - insert_order ()
##################################################################
```

Constants

Constants declarations should follow the Library Header. Constants should always be declared as public when defined in a library. For example:

public const <CONST_NAME> = <const_value>;

Constants declared as public can be used by any test.

Function Header

The function header is placed above a user defined function. Like the Test Header, the function header is enclosed by the "#" symbol and stores information about the function:

- Function Name
- Description or purpose of the function
- Input parameters
- Output parameters
- Return Values

For example:

```
######################################################################
# FUNCTION: get_flight_from_table
# PURPOSE: This function is static only to this file. It selects a flight from the
# flight table using a given flight number. Also uses split() function to access the
# flight number from the table.
#
# INPUT PARAMS: flight_num   The flight number to be selected.
# OUTPUT PARAMS:   none
# RETURN VALUES: Standard return values.
######################################################################

static function get_flight_from_table (in flight_num){...
```

User-Defined Functions

The user-defined function follows immediately after the function header. When declaring a function, the function starts with the function heading. The function heading has the following format:

[class] **function** <function_name> ([mode] <parameter_list>)

A function can be one of two classes:

- *Static* - Available only to the current module; not accessible outside the module. A function should be declared as static if it is used only by other functions *within* the library.

- *Public* (default) - Available to all tests and functions *outside* the library. Most functions in a library are declared as public.

  The class of the function is followed by the reserved word *function* followed by the function name.

  The name of the function should be intuitively meaningful, such as "insert_order". The first character of a function name can be a letter or an underscore.

  A parameter can be one of three modes:

- *In* (default) - Assigned a value from *outside* the function
- *Out* - Assigned a value from *inside* the function
- *Inout* - Can be assigned a value from outside the function *and* pass a value to the outside.

  Array parameters are designated by square brackets and can be declared only as out or inout (the default).

  The function body follows the function heading as follows:

```
[class] function <function_name> ([mode] <parameter_list>)
    {
declarations;
statement_1;
statement_n;
    }
```

  The function body is enclosed by curly brackets. The open curly bracket ({) is aligned with the first column of the heading. The close curly bracket (}) is aligned in the same column as the open curly bracket.

  In test scripts, variable declaration is optional (see “Variable Declaration” on page 37). In functions, however, variables, constants, and arrays all must be declared. A variable can be one of two types:

- *Static* - Limited in scope to the function, test, or module within which it is running.

- *Auto* (default) - Short for "automatic" (a C language convention). When in doubt, declare the variable as *auto*. Once a variable is declared as auto, it is local in scope and exists only for the duration of the function's execution.

  For example:

```
public function issue_report_line (in line_to_print)
    {
static internal_line_count;
auto tmp_line;
tmp_line = internal_line_count & ":" line_to_print;
report_msg (line_to_print);
internal_line_count++;
    }
```

  Note that the variable *internal_line_count* retains its value even after control is passed from the function body. It holds the value representing the number of lines reported throughout the test run. It will retain its value as long as the function remains in memory. However, the value of *tmp_line* will be redefined every time *issue_report_line* is called, losing its value from the last call.

  The statements in a user-defined function follow the declarations in the function body. A statement can be any valid TSL statement. Statements should be indented one tab length for better readability.

All functions should return a standard return value such as E_OK or E_GENERAL_ERROR. To return error codes, use the **return** statement. It returns a value and passes control back to the calling test or function. For example:

```
public function open_order (in OrderNum)
    {
set_window ("Open Order");
button_set ("Order Num:", ON);
edit_set ("Order Num:", OrderNum);
button_press ("OK");
if (win_exists ("Flight Reservation System") == E_OK)
    {
set_window ("Flight Reservation System");
button_press ("OK");
return (E_COULD_NOT_OPEN);
    }
# end if
else
return (E_OK);
# Function executed successfully
    }
```

Note that the function *open_order* returns E_COULD_NOT_OPEN when the order does not exist and E_OK when the function is executed successfully. A function should return an error code, rather than the error code's value.

4

Reserved Words

WinRunner contains reserved words. In addition to the words listed below, all TSL functions and statements are reserved words in WinRunner.

Note that you can change the color and appearance of reserved words in WinRunner's script editor. For more information, refer to the "Customizing the Test Script Editor" chapter in the *WinRunner User's Guide*.

auto
button_check_enabled
button_get_value
case
char
check_file
check_wid
const
continue
default
display_date_result
display_euro_result
double
edit_check_content
edit_check_format
else
endif
exception_on_print
exit
extern
float
function
get_lang
get_obj_record_method
get_runner_str
getline
grab
gsub
GUI_buf_get_data
GUI_buf_get_data_attr

GUI_buf_set_data_attr
GUI_data_get_attr
GUI_data_set_attr
GUI_list_data_attrs
GUI_mark
GUI_point_to
GUI_replay_wizard
if
in
inout
input_to_description_int
list_check_multi_selection
list_check_row_num
list_check_selection
list_get_items_count
list_get_multi_selected
long
menu_get_items_count
menu_verify
move_mouse_abs
move_mouse_rel
move_window
next
obj_check_attr
obj_check_enabled
obj_check_focused
obj_check_label
obj_check_pos
obj_check_size
obj_check_style
obj_set_focus
obj_verify
out
pause_test
printf
process_return_value
prvars
public
quad_click
report_event
report_param_msg
reset_filter
reset_internals
return
save_report_info
scroll_get_value
set_filter
set_obj_record_method
short
signed

static
string
sub
tab_get_page
tab_get_selected_page
tab_select_page
tbl_get_cell_coords
tbl_synchronize
tech
tl_get_status
tl_set_status
tl_setvar
toolbar_get_info
toolbar_wait_info
treturn
trpl_click
tsl_set_module_mark
tsl_test_is_module
ungrab
unsigned
vendor
vuser_status_message
wait_stable_window
win_check_attr
win_check_label
win_check_pos
win_check_size
win_press_cancel
win_press_ok
win_press_return
win_set_focus
win_verify

5

Functions by Category

This section lists all TSL functions according to the type of tasks they perform. Functions are arranged alphabetically within each category, and a very brief description of each function is included. Where appropriate, functions appear in more than one category.

There are four types of functions:

- Analog Functions
- Context Sensitive Functions
- Customization Functions
- Standard Functions

Analog Functions

Analog functions record and run operations at specified screen coordinates. When you record in Analog mode, these functions are used to depict mouse clicks, keyboard input, and the exact coordinates traveled by the mouse. When you run a test, Analog functions retrace the mouse tracks and exactly resubmit the input you recorded. Analog functions also support test operations such as synchronization, verification, and text manipulation.

Analog functions are divided into the following categories:

- Bitmap Checkpoint Function
- Input Device Functions
- Synchronization Function
- Table Functions
- Text Checkpoint Functions

Bitmap Checkpoint Function

Function	Description	See Page
check_window	compares a bitmap of an AUT window to an expected bitmap	149

Input Device Functions

Function	Description	See Page
click	clicks a mouse button	151
click_on_text	clicks a mouse button on a string	151
dbl_click	double-clicks a mouse button	182
get_x	returns the current x-coordinate of the mouse pointer	246
get_y	returns the current y-coordinate of the mouse pointer	246
move_locator_abs	moves the mouse to a new absolute position	299
move_locator_rel	moves the mouse to a new relative position	300
move_locator_text	moves the mouse to a string	300
move_locator_track	moves the mouse along a prerecorded track	301
mtype	clicks one or more mouse buttons	301
type	specifies keyboard input	447

Synchronization Function

Function	Description	See Page
wait_window	waits for a window bitmap to appear in order to synchronize test execution	453

Table Functions

Function	Description	See Page
tbl_click_cell	clicks in a cell in a JFC JTable object	376
tbl_dbl_click_cell	double-clicks in a cell in a JFC JTable object	377
tbl_drag	drags a cell to a different location within a JFC JTable object	381

Text Checkpoint Functions

Function	Description	See Page
click_on_text	clicks on a string	151
find_text	searches for a string	237
get_text	reads text from the screen	245
move_locator_text	moves the mouse to a string	300

Context Sensitive Functions

Context Sensitive functions depict actions on the application under test in terms of GUI objects, ignoring the physical location of an object on the screen. When you record in Context Sensitive mode, a TSL statement, which describes the object selected and the action performed, is generated in the test script.

Context Sensitive functions are divided into the following categories:

- ActiveBar Functions
- ActiveX/Visual Basic Functions
- Bitmap Checkpoint Functions
- Button Object Functions
- Calendar Functions
- Database Functions
- Data-Driven Test Functions
- Date Operation Functions
- Delphi Functions
- Edit Object Functions
- EURO Functions
- GUI Checkpoint Functions

- GUI Map Configuration Functions
- GUI Map Editor Functions
- Icon Object Functions
- Java Functions
- List Object Functions
- Menu Object Functions
- Object Functions
- Oracle Functions
- PowerBuilder Functions
- Scroll Object Functions
- Siebel Functions
- Spin Object Functions
- Static Text Object Functions
- Statusbar Functions
- Synchronization Functions
- Tab Object Functions
- Table Functions
- Terminal Emulator Functions
- Text Checkpoint Functions
- Toolbar Object Functions
- WAP Functions
- Web Functions
- Table Functions for WebTest
- Window Object Functions

ActiveBar Functions

Function	Description	See Page
ActiveBar_combo_select_item	selects an item in a ComboBox tool	126
ActiveBar_dump	stores information about ActiveBar bands and tools. This information includes captions, names, types and IDs	127
ActiveBar_select_menu	selects a menu item in a toolbar	128
ActiveBar_select_tool	selects a tool in the toolbar	129

ActiveX/Visual Basic Functions

The following functions are available only when the ActiveX or the Visual Basic Add-in is installed and loaded:

Function	Description	See Page
ActiveX_activate_method	invokes an ActiveX method of an ActiveX control	130
ActiveX_get_info	returns the value of an ActiveX/Visual Basic control property	131
ActiveX_set_info	sets the value of a property in an ActiveX/Visual Basic control	132
vb_get_label_names	retrieves the names of all label controls in the given form window. The names are stored as subscripts of an array	452

Bitmap Checkpoint Functions

Function	Description	See Page
obj_check_bitmap	compares a current object bitmap to an expected bitmap	302
win_check_bitmap	compares a current window bitmap to an expected bitmap	475

Button Object Functions

Function	Description	See Page
button_check_info	checks the value of a button property	137
button_check_state	checks the state of a radio or check button	138
button_get_info	returns the value of a button property	138
button_get_state	returns the state of a radio or check button	139
button_press	clicks a push button	139
button_set	sets the state of a radio or check button	140
button_wait_info	waits for the value of a button property	140

Calendar Functions

The following functions are available for calendars included in Visual Studio Version 6 and higher and in Internet Explorer Active Desktop Version 4 and higher:

Function	Description	See Page
calendar_activate_date	double clicks the specified date in the calendar	141
calendar_get_selected	retrieves and counts the selected dates in a calendar	142
calendar_get_status	returns the status validity of the date	142
calendar_get_valid_range	returns the date range	143
calendar_select_date	clicks the specified date in a calendar	144
calendar_select_range	clicks the specified date in a calendar	144
calendar_select_time	selects a time in the HH:MM:SS format	145
calendar_set_status	sets the selection status to valid or invalid	145

Database Functions

Function	Description	See Page
db_check	compares current database data to expected database data	175
db_connect	creates a new database session and establishes a connection to an ODBC database	176
db_disconnect	disconnects from the database and ends the database session	177
db_execute_query	executes the query based on the SQL statement and creates a record se	178
db_get_field_value	returns the value of a single field in the database	178

Function	Description	See Page
db_get_headers	returns the number of column headers in a query and the content of the column headers, concatenated and delimited by tabs	179
db_get_last_error	returns the last error message of the last ODBC or Data Junction operation	179
db_get_row	returns the content of the row, concatenated and delimited by tabs	180
db_record_check	compares information that appears in the application under test during a test run with the current values in the corresponding record(s) in your database	181
db_write_records	writes the record set into a text file delimited by tabs	182

Database Function for Working with Data Junction

Function	Description	See Page
db_dj_convert	runs a Data Junction export file (.djs file)	177

Data-Driven Test Functions

Function	Description	See Page
ddt_close	closes a data table file	183
ddt_export	exports the information of one table file into a different table file	184
ddt_get_current_row	retrieves the active row in a data table	185
ddt_get_parameters	returns a list of all the parameters in a data table	185
ddt_get_row_count	retrieves the number of rows in a data table	186
ddt_is_parameter	returns whether a parameter in a data table is valid	187
ddt_next_row	changes the active row in a data table to the next row	187
ddt_open	creates or opens a data table file so that WinRunner can access it	188
ddt_report_row	reports the active row in a data table to the test results	189
ddt_save	saves the information in a data table	189
ddt_set_row	sets the active row in a data table	190

Function	Description	See Page
ddt_set_val	sets a value in the current row of the data table	190
ddt_set_val_by_row	sets a value in the specified row of the data table	191
ddt_show	shows or hides the table editor of a specified data table	192
ddt_update_from_db	imports data from a database into a data table	193
ddt_val	returns the value of a parameter in the active row in a data table	194
ddt_val_by_row	returns the value of a parameter in the specified row in a data table	194

Date Operation Functions

Function	Description	See Page
date_age_string	ages date string and returns the aged date	158
date_align_day	ages dates to a business day or to the same day of the week	159
date_calc_days_in_field	calculates the number of days between two dates	160
date_calc_days_in_string	calculates the number of days between two numeric strings	161
date_change_field_aging	overrides aging on a specified date object	162
date_change_original_new_formats	overrides automatic date recognition for a specified object	163

Function	Description	See Page
date_disable_format	disables a date format	164
date_enable_format	enables a date format	165
date_field_to_Julian	translates a date field to a Julian number	165
date_is_field	determines whether a field contains a valid date	166
date_is_leap_year	determines whether a year is a leap year	166
date_is_string	determines whether a numeric string contains a valid date	167
date_leading_zero	determines whether to add a zero before single-digit numbers when aging and translating dates	168
date_month_language	sets the language used for month names	168
date_set_aging	sets aging in a test script	169
date_set_run_mode	changes the Date Operations run mode in the test script	172
date_set_system_date	changes the system date and time	173
date_set_year_limits	sets the minimum and maximum years valid for date verification and aging	173
date_set_year_threshold	sets the year threshold	174

Function	Description	See Page
date_string_to_Julian	translates a numeric string to a Julian number	174
date_type_mode	disables overriding of automatic date recognition for all date objects in a GUI application	175

Delphi Functions

The following functions are available only when WinRunner support for Delphi is installed and loaded:

Function	Description	See Page
add_dlph_obj	adds a Delphi object	135
dlph_edit_set	replaces the entire content of a Delphi edit object	200
dlph_list_select_item	selects a Delphi list item	200
dlph_obj_get_info	retrieves the value of a Delphi object	201
dlph_obj_set_info	sets the value of a Delphi object	201
dlph_panel_button_press	clicks a button within a Delphi panel	202

Edit Object Functions

Function	Description	See Page
edit_check_info	checks the value of an edit object property	204
edit_check_selection	checks that a string is selected	205
edit_check_text	checks the contents of an edit object	205
edit_delete	deletes the contents of an edit object	206
edit_delete_block	deletes a text block from an edit object	206
edit_get_block	returns a block of text from an edit object	207
edit_get_info	returns the value of an edit object property	208
edit_get_row_length	returns the length of a row in an edit object	208
edit_get_rows_count	returns the number of rows written in an edit object	209
edit_get_selection	returns the selected string in an edit object	209
edit_get_selection_pos	returns the position at which the selected block starts and ends	210
edit_get_text	returns the text in an edit object	211
edit_insert	inserts text in an edit object	211
edit_insert_block	inserts text in a multi-line edit object	212
edit_replace	replaces part of the contents of an edit object	212
edit_replace_block	replaces a block of text in a multi-line edit object	213
edit_set	replaces the entire contents of an edit object	213
edit_set_insert_pos	places the cursor at the specified point in an edit object	214

Function	Description	See Page
edit_set_selection	selects text in an edit object	215
edit_type	types a string in an edit object	215
edit_wait_info	waits for the value of an edit object property	216

EURO Functions

The following functions are available for WinRunner EURO users only:

Function	Description	See Page
EURO_check_currency	captures and compares the currencies in a window	217
EURO_compare_columns	compares two currency columns (dual display) and returns the number of mismatches	218
EURO_compare_fields	compares two fields while converting	219
EURO_compare_numbers	compares two numbers while converting	220
EURO_convert_currency	returns the converted currency value between two currencies	221
EURO_override_field	overrides the original currency in a field to a new currency	222
EURO_set_auto_currency_verify	activates/deactivates automatic EURO verification	223
EURO_set_capture_mode	determines how WinRunner EURO captures currency in terminal emulator applications	224

Function	Description	See Page
EURO_set_conversion_mode	sets the EURO conversion run mode in the test script	224
EURO_set_conversion_rate	sets the conversion rate between the EURO currency and a national currency	225
EURO_set_cross_rate	sets the cross rate method between two currencies	226
EURO_set_currency_threshold	sets the minimum value of an integer which will be considered a currency	227
EURO_set_decimals_precision	sets the number of decimals in the conversion results	227
EURO_set_original_new_currencies	sets the original and new currencies of the application	228
EURO_set_regional_symbols	sets the character used as decimal separator and the character used to separate groups of digits to the left of the decimal	229
EURO_set_triangulation_decimals	sets the default decimals precision for the EURO triangulation	229
EURO_type_mode	disables/enables overriding of automatic currency recognition for all integer objects in a GUI application	230

GUI Checkpoint Functions

Function	Description	See Page
obj_check_gui	compares current GUI data to expected GUI data for any class of object	303
win_check_gui	compares current GUI data to expected GUI data for a window	476

GUI Map Configuration Functions

Function	Description	See Page
get_class_map	returns the standard class associated with a custom class	242
get_record_attr	returns the properties recorded for an object class	243
get_record_method	returns the recording method used for an object class	244
set_class_map	associates a custom class with a standard class	338
set_record_attr	sets the properties to learn for an object class	339
set_record_method	specifies the record method for a class	340
unset_class_map	unbinds a custom class from a standard class	451

GUI Map Editor Functions

Function	Description	See Page
GUI_add	adds an object to a GUI map file	248
GUI_buf_get_desc	returns the physical description of an object in a GUI map file	248
GUI_buf_get_desc_attr	returns the value of an object property in a GUI map file	249
GUI_buf_get_logical_name	returns the logical name of an object in a GUI map file	250
GUI_buf_new	creates a new GUI map file	250
GUI_buf_set_desc_attr	sets the value of a property in a GUI map file	251
GUI_close	closes a GUI map file	251
GUI_close_all	closes all GUI map files	252
GUI_delete	deletes an object from a GUI map file	252
GUI_desc_compare	compares two physical descriptions	253
GUI_desc_get_attr	gets the value of a property from a physical description	253
GUI_desc_set_attr	sets the value of a property	254
GUI_get_name	returns the type of GUI for the application under test	254
GUI_get_window	returns the active window in the GUI map	255
GUI_list_buf_windows	lists all windows in a GUI map file	256
GUI_list_buffers	lists all open GUI map files	256
GUI_list_desc_attrs	returns a list of all property values for an object	257
GUI_list_map_buffers	lists all loaded GUI map files	257

Function	Description	See Page
GUI_list_win_objects	lists all objects in a window	258
GUI_load	loads a GUI map file	259
GUI_map_get_desc	returns the description of an object in the GUI map	260
GUI_map_get_logical_name	returns the logical name of an object in the GUI map	260
GUI_open	opens a GUI map file	261
GUI_save	saves a GUI map file	261
GUI_save_as	saves a GUI map file under a new name	262
GUI_set_window	sets the scope for identifying objects in the GUI map	262
GUI_unload	unloads a GUI map file	263
GUI_unload_all	unloads all loaded GUI map files	263

Icon Object Functions

Function	Description	See Page
icon_move	moves an icon to a new location	266
icon_select	clicks an icon	266

Java Functions

The following functions are available only when WinRunner support for Java is installed and loaded:

Function	Description	See Page
java_activate_method	invokes the requested Java method for the given object	269
jco_create	creates a Java object within your application or applet, or within the context of an existing object in your application or applet	271
jco_free	frees the specified jco object from memory	271
jco_free_all	frees all jco objects from memory	272
java_fire_event	simulates an event on a Java object	270
jdc_aut_connect	establishes a connection between WinRunner and Java applications	272
method_wizard	launches the Java Method wizard, which enables you to view the methods associated with any jco object in your application or applet and to generate the appropriate **java_activate_method** statement for one of the displayed methods	299
obj_key_type	sends KeyEvents to a Java component	310

Function	Description	See Page
obj_set_info	sets the value of an object property	316
popup_select_item	selects an item from a Java popup menu.	325

List Object Functions

Function	Description	See Page
list_activate_item	activates an item	273
list_check_info	checks the value of a list property	274
list_check_item	checks the content of an item in a list	274
list_check_selected	checks that the specified item is selected	275
list_collapse_item	hides items in a tree view object	275
list_deselect_item	deselects an item	276
list_deselect_range	deselects all items between two specified items	276
list_drag_item	drags an item from a source list	277
list_drop_on item	drops an object onto a target list item	277
list_expand_item	displays hidden items in a tree view object	278
list_extend_item	adds an item to the items already selected	279
list_extend_multi_items	adds multiple items to the items already selected	279
list_extend_range	selects a range of items and adds them to the items currently selected	280
list_get_checked_items	returns the value of items marked as checked	281
list_get_column_header	returns the value of a ListView column header	281

Function	Description	See Page
list_get_info	returns the value of a list property	282
list_get_item	returns the contents of an item	282
list_get_item_coord	returns the dimensions and coordinates of the list item	283
list_get_item_info	returns the state of a list item	284
list_get_item_num	returns the position of an item	284
list_get_selected	returns the currently selected item	285
list_get_subitem	returns the value of the ListView subitem	286
list_rename_item	activates an item's edit mode in order to rename it	286
list_select_item	selects an item in a list	287
list_select_multi_items	selects items in a multiple-selection container object	288
list_select_range	selects all items between two specified items	288
list_set_item_state	sets the state of an icon of the specified ListView or TreeView	289
list_wait_info	waits for the value of a list property	290

Menu Object Functions

Function	Description	See Page
menu_get_desc	returns the physical description of a menu	295
menu_get_info	returns the value of a menu property	296
menu_get_item	returns the contents of an item	296
menu_get_item_num	returns the position of an item	297
menu_select_item	selects an item	297
menu_wait_info	waits for the value of a menu property	298

Object Functions

Function	Description	See Page
obj_check_bitmap	compares a current object bitmap to an expected bitmap	302
obj_check_gui	compares current GUI data to expected GUI data	303
obj_check_info	checks the value of an object property	304
obj_click_on_text	clicks on text in an object	304
obj_drag	begins dragging an object	305
obj_drop	ends dragging an object	306
obj_exists	checks if an object is displayed	306
obj_find_text	returns the location of a string within an object	307
obj_get_desc	returns an object's physical description	308
obj_get_info	returns the value of an object property	309
obj_get_text	reads text from an object	309
obj_highlight	highlights an object	310

Function	Description	See Page
obj_mouse_click	clicks on an object	311
obj_mouse_dbl_click	double-clicks on an object	312
obj_mouse_drag	drags the mouse within an object	313
obj_mouse_move	moves the mouse within an object	314
obj_move_locator_text	moves the mouse to a string in an object	315
obj_type	sends keyboard input to an object	317
obj_wait_bitmap	waits for an object bitmap	317
obj_wait_info	waits for the value of an object property	318

Oracle Functions

The following functions are available only when WinRunner support for Oracle is installed and loaded:

Function	Description	See Page
edit_activate	double-clicks an object in an Oracle application	204
edit_set_focus	focuses on an object in an Oracle application	214
lov_get_item	retrieves an item from a list of values in an Oracle application	293
lov_select_item	selects an item from a list of values in an Oracle application	293

PowerBuilder Functions

The following functions are available only when WinRunner support for PowerBuilder is installed and loaded:

Function	Description	See Page
datawindow_get_info	retrieves the value of a DataWindow object property	157
datawindow_text_click	clicks a DataWindow text object	157
datawindow_text_dbl_click	double-clicks a DataWindow text object	158

Scroll Object Functions

Function	Description	See Page
scroll_check_info	checks the value of a scroll property	331
scroll_check_pos	checks the current position of a scroll	331
scroll_drag	drags a scroll to the specified location	332
scroll_drag_from_min	scrolls the specified distance from the minimum position	332
scroll_get_info	returns the value of a scroll property	333
scroll_get_max	returns the value of a scroll at its maximum (end) position	333
scroll_get_min	returns the value of the scroll at its minimum (start) position	334
scroll_get_pos	returns the current scroll position	334
scroll_get_selected	returns the minimum and maximum values of the selected range on a slider	335
scroll_line	scrolls the specified number of lines	335
scroll_max	sets a scroll to the maximum (end) position	336

Function	Description	See Page
scroll_min	sets a scroll to the minimum (start) position	336
scroll_page	moves a scroll the specified number of pages	337
scroll_wait_info	waits for the value of a scroll property	337

Siebel Functions

The following functions are available only when WinRunner support for Siebel is installed and loaded:

Function	Description	See Page
siebel_click_history	clicks the history button	342
siebel_connect_repository	connects to the Siebel repository database	343
siebel_get_active_applet	returns the active applet name	344
siebel_get_active_buscomp	returns the active business component name	344
siebel_get_active_busobj	returns the active business object name	345
siebel_get_active_control	returns the active control name	345
siebel_get_active_view	returns the active view name	346
siebel_get_chart_data	returns the legend data and chart values from the specified chart	347
siebel_get_control_value	returns the active control value	347
siebel_goto_record	navigates to the specified record	348
siebel_navigate_view	navigates to the specified view	348
siebel_obj_get_info	returns the value of a single Siebel object property from the Siebel repository database	349
siebel_obj_get_properties	returns all properties of a Specified siebel object in the Siebel repository database.	350
siebel_select_alpha	selects a letter button from the alpha tab bar	351
siebel_set_active_applet	sets the specified applet as the active applet.	351

Function	Description	See Page
siebel_set_active_control	sets the specified control as the active control	352
siebel_set_control_value	sets a new value for the active control	352
siebel_terminate	closes the Siebel application	353

Spin Object Functions

Function	Description	See Page
spin_get_info	returns the value of a spin property	354
spin_get_pos	returns the position of a spin object	354
spin_get_range	returns the minimum and maximum positions of a spin	355
spin_max	sets a spin to its maximum value	355
spin_min	sets a spin to its minimum value	356
spin_next	sets a spin to its next value	356
spin_prev	sets a spin to its previous value	357
spin_set	sets a spin to the specified value	357
spin_up	scrolls a spin control up the specified number of times	358
spin_wait_info	waits for the value of a spin property	358

Static Text Object Functions

Function	Description	See Page
static_check_info	checks the value of a static text object property	361
static_check_text	checks the contents of a static text object	362
static_get_info	returns the value of a static text property	362
static_get_text	returns the contents of a static text object	363
static_wait_info	waits for the value of a static text property	363

Statusbar Functions

Function	Description	See Page
statusbar_get_field_num	returns the numeric index of a field on a status bar	364
statusbar_get_info	returns the value of a status bar property	364
statusbar_get_text	reads text from a field on a status bar	365
statusbar_wait_info	waits for the value of a status bar property	366

Synchronization Functions

Function	Description	See Page
button_wait_info	waits for the value of a button property	140
edit_wait_info	waits for the value of an edit property	216
list_wait_info	waits for the value of a list property	290
menu_wait_info	waits for the value of a menu property	298
obj_wait_info	waits for the value of an object property	318
scroll_wait_info	waits for the value of a scroll property	337
spin_wait_info	waits for the value of a spin property	358
static_wait_info	waits for a the value of a static text property	363
statusbar_wait_info	waits for the value of a status bar property	366
tab_wait_info	waits for the value of a tab property	371
win_wait_info	waits for the value of a window property	493

Tab Object Functions

Function	Description	See Page
tab_get_info	returns the value of a tab property	369
tab_get_item	returns the name of a tab item	369
tab_get_selected	returns the name of the selected tab item	370
tab_select_item	selects a tab item	370
tab_wait_info	waits for the value of a tab property	371

Table Functions

Function	Description	See Page
tbl_activate_cell	double-clicks the specified cell in a table	372
tbl_activate_col	double-clicks the specified column	374
tbl_activate_header	double-clicks the specified column header in a table	375
tbl_activate_row	double-clicks the specified row	376
tbl_deselect_col	deselects the specified column	378
tbl_deselect_cols_range	deselects the specified range of columns	379
tbl_deselect_row	deselects the specified row	380
tbl_deselect_rows_range	deselects the specified range of rows	380
tbl_extend_col	adds a column to the currently selected columns	382
tbl_extend_cols_range	adds columns to the currently selected columns	383
tbl_extend_row	adds a row to the currently selected rows	384

Function	Description	See Page
tbl_extend_rows_range	adds rows to the currently selected rows	385
tbl_get_cell_data	retrieves the contents of the specified cell from a table	386
tbl_get_cols_count	retrieves the number of columns in a table	388
tbl_get_column_name	retrieves the column header name of the specified column in a table	389
tbl_get_column_names	returns the names and number of columns in a table for PowerBuilder applications	390
tbl_get_rows_count	retrieves the number of rows in the specified table	391
tbl_get_selected_cell	returns the cell currently in focus in a table	392
tbl_get_selected_row	returns the row currently selected in a table	394
tbl_select_cells_range	selects the specified range of cells	395
tbl_select_col_header	clicks the specified column header of a table	396
tbl_select_cols_range	selects the specified range of columns	398
tbl_select_rows_range	selects the specified range of rows	399
tbl_set_cell_data	sets the contents of a cell to the specified text in a table	400
tbl_set_cell_focus	sets the focus to the specified cell in a table	402
tbl_set_selected_cell	selects the specified cell in a table	404
tbl_set_selected_col	selects the specified column in a table	406
tbl_set_selected_row	selects the specified row in a table	407

Terminal Emulator Functions

The following functions are available only when WinRunner support for Terminal Emulators is installed and loaded:

Function	Description	See Page
date_check	checks all dates in the current screen of a terminal emulator application	164
date_set_attr	sets the record configuration mode for a field	170
date_set_auto_date_verify	automatically generates a date checkpoint for the current screen in a terminal emulator application.	170
date_set_capture_mode	determines how WinRunner captures dates in terminal emulator applications	171
TE_add_screen_name_location	instructs WinRunner where to look for the logical name of a screen	410
TE_bms2gui	teaches WinRunner the user interface from a BMS file	411
TE_check_text	captures and compares the text in a terminal emulator window	412
TE_create_filter	creates a filter in the test database	412
TE_define_sync_keys	sets keys that enable automatic synchronization in **type**, **win_type** and **obj_type** commands	413
TE_delete_filter	deletes a specified filter from the test database	414
TE_edit_field	inserts text into an unprotected field	414

Function	Description	See Page
TE_edit_hidden_field	inserts text into a hidden field	415
TE_edit_screen	types a string in the specified location in a screen	415
TE_find_text	returns the location of a specified string	416
TE_force_send_key	defines a key causing a screen to change	417
TE_get_active_filter	returns the coordinates of a specified active filter.	417
TE_get_auto_reset_filters	indicates whether or not filters are automatically deactivated at the end of a test run	418
TE_get_auto_verify	indicates whether automatic text verification is on or off	419
TE_get_cursor_position	returns the position of the cursor	419
TE_get_field_content	returns the contents of a field to a variable	420
TE_get_filter	returns the properties of a specified filter	420
TE_get_merge_rule	returns the rule for merging fields	421
TE_get_refresh_time	returns the time WinRunner waits for the screen to refresh	422
TE_get_screen_name_location	returns the screen name location	422
TE_get_sync_time	returns the system synchronization time	423
TE_get_text	reads text from screen and stores it in a string	423

Function	Description	See Page
TE_get_timeout	returns the current synchronization time	424
TE_merge_fields	sets the rule for merging fields	424
TE_reset_all_filters	deactivates all filters in a test	425
TE_reset_all_force_send_key	deactivates the execution of **TE_force_send_key** functions	425
TE_reset_all_merged_fields	deactivates the merging of fields	426
TE_reset_filter	deactivates a specified filter	426
TE_reset_screen_name_location	resets the screen name location to 0	427
TE_send_key	sends to the mainframe the specified F-key function	427
TE_set_auto_reset_filters	deactivates the automatic reset of filters when a test run is completed	428
TE_set_auto_transaction	defines a recorded **TE_wait_sync** statement as a transaction	428
TE_set_auto_verify	activates/deactivates automatic text	429
TE_set_BMS_name_tag	changes a name tag that appears in your BMS file	429
TE_set_cursor_position	defines the position of the cursor	430
TE_set_field	specifies the field that will receive subsequent input	430
TE_set_filter	creates and activates a filter	431
TE_set_filter_mode	specifies whether to assign filters to all screens or to the current screen	432

Function	Description	See Page
TE_set_record_method	specifies the recording method for operations on terminal emulator objects	432
TE_set_refresh_time	sets the interval that WinRunner waits for the screen to refresh	433
TE_set_screen_name_location	resets the screen name location to 0 and instructs WinRunner where to look for the logical name of a screen	433
TE_set_sync_time	defines the system synchronization time	434
TE_set_timeout	sets the maximum time WinRunner waits for a response from the server	435
TE_set_trailing	determines whether WinRunner types spaces and tabs in fields during test execution	435
TE_user_attr_comment	enables a user to add a user-defined comment property to the physical description of fields in the GUI map	436
TE_user_reset_all_attr_comment	resets all user-defined comment properties	436
TE_wait_field	waits for a specified string in a specified field to appear on screen	437
TE_wait_string	waits for a string to appear on screen	437
TE_wait_sync	instructs WinRunner to wait for the terminal emulator screen to be redrawn	438

Text Checkpoint Functions

Function	Description	See Page
obj_click_on_text	clicks on text in an object	304
obj_find_text	returns the location of a string in an object	307
obj_get_text	reads text from an object	309
obj_move_locator_text	moves the mouse to a string in an object	315
win_find_text	returns the location of a string in a window	481
win_click_on_text	clicks on text in a window	478
win_get_text	reads text from a window	483
win_move_locator_text	moves the mouse to a string in a window	489

Toolbar Object Functions

Function	Description	See Page
toolbar_button_press	clicks on a toolbar button	442
toolbar_get_button	returns the name of a toolbar button	442
toolbar_get_button_info	returns the value of a toolbar button property	443
toolbar_get_button_num	returns the position of a toolbar button	444
toolbar_get_buttons_count	returns the number of buttons on a toolbar	445
toolbar_select_item	selects an item from a menu-like toolbar, as in Microsoft Internet Explorer 4.0 or the Start menu in Windows 98	445

WAP Functions

The following functions are available only when WinRunner support for WAP applications is installed and loaded:

Function	Description	See Page
phone_append_text	appends the specified text string to the current contents of the phone editor	321
phone_edit_set	replaces the contents of the phone editor with the specified text string	321
phone_get_name	returns the model name of the phone	322
phone_GUI_load	loads the GUI map for the specified Phone.com phone	322
phone_key_click	clicks a phone key	323
phone_navigate	directs the phone to connect to the specified site	323
phone_sync	recorded after any phone navigation on the Nokia emulator and instructs WinRunner to wait until the phone is ready to handle the next operation	324

Web Functions

The following functions are available only when the WebTest add-in is installed and loaded:

Function	Description	See Page
web_browser_invoke	invokes the browser and opens a specified site	454
web_cursor_to_image	moves the cursor to an image on a page.	454
web_cursor_to_label	moves the cursor to a label on a page	455
web_cursor_to_link	moves the cursor to a link on a page	455
web_cursor_to_obj	moves the cursor to an object on a page	456
web_event	runs an event on the specified object	456
web_file_browse	clicks a browse button	457
web_file_set	sets the text value in a file-type object	458
web_find_text	returns the location of text within a page	458
web_frame_get_text	retrieves the text content of a page	459
web_frame_get_text_count	returns the number of occurrences of a regular expression in a page	460
web_frame_text_exists	returns a text value if it is found in a frame	460
web_get_run_event_mode	returns the current run mode	461
web_get_timeout	returns the maximum time that WinRunner waits for response from the web	461

Function	Description	See Page
web_image_click	clicks a hypergraphic link or an image	462
web_label_click	clicks the specified label	462
web_link_click	clicks a hypertext link	463
web_link_valid	checks whether a URL name of a link is valid (not broken)	463
web_obj_click	clicks an object in a frame	464
web_obj_get_child_item	returns the description of the children in an object	464
web_obj_get_child_item_count	returns the count of the children in an object	465
web_obj_get_info	returns the value of an object property	466
web_obj_get_text	returns a text string from an object	466
web_obj_get_text_count	returns the number of occurrences of a regular expression string in an object	467
web_obj_text_exists	returns a text value if it is found in an object	468
web_password_encrypt	encrypts a password on a Web page.	468
web_refresh	resets all events to their default settings.	469
web_restore_event_default	resets all events to their default settings	469
web_set_event	sets the event status	470
web_set_run_event_mode	sets the event run mode	471

Function	Description	See Page
web_set_timeout	sets the maximum time WinRunner waits for a response from the Web	472
web_set_tooltip_color	sets the colors for the WebTest ToolTip	472
web_sync	waits for the navigation of a frame to be completed	473
web_tbl_get_cell_data	retrieves the contents of the specified cell from a Web table, starting from the specified character	473
web_url_valid	checks whether a URL is valid	474

Table Functions for WebTest

Function	Description	See Page
tbl_get_cell_data	retrieves the contents of the specified cell from a table	386
tbl_get_cols_count	retrieves the number of columns in a table	388
tbl_get_column_name	retrieves the column header name of the specified column	389
tbl_get_rows_count	retrieves the number of rows in the specified table	391

Window Object Functions

Function	Description	See Page
set_window	specifies the window to receive input, according to the window's logical name	341
_set_window	specifies a window to receive input, according to the window's physical description	341
win_activate	activates a window	475
win_check_bitmap	compares a current window bitmap to an expected bitmap	475
win_check_gui	compares current GUI data to expected GUI data	476
win_check_info	checks the requested window property	477
win_click_help	clicks the help button in a window title bar	477
win_click_on_text	clicks on text in a window	478
win_close	closes a window	479
win_drag	drags an object from a source window	479
win_drop	drops an object on a target window	480

Function	Description	See Page
win_exists	checks whether a window is displayed	480
win_find_text	returns the location of a string in a window	481
win_get_desc	returns the physical description of a window	482
win_get_info	returns the value of a window property	482
win_get_text	reads text from a window	483
win_highlight	highlights a window	484
win_max	maximizes a window	484
win_min	minimizes a window to an icon	485
win_mouse_click	clicks in a window	485
win_mouse_dbl_click	double-clicks in a window	486
win_mouse_drag	drags the mouse in a window	487
win_mouse_move	moves the mouse in a window	488
win_move	moves a window to a new absolute location	488
win_move_locator_text	moves the mouse to a string in a window	489
win_open	opens a window	490
win_resize	resizes a window	490
win_restore	restores a window from a minimized or maximized state to its previous size	491
win_type	sends keyboard input to a window	491
win_wait_bitmap	waits for a window bitmap	492
win_wait_info	waits for the value of a window property	493

Customization Functions

Customization functions let you enhance your testing tool for your own needs. For example, you can add functions to the Function Generator or create custom GUI checkpoints.

Customization functions are divided into the following categories:

- Custom Record Functions
- Custom User Interface Functions
- Function Generator Functions
- GUI Checkpoint Functions

Custom Record Functions

Function	Description	See Page
add_cust_record_class	registers a custom record function and/or logical name function	134
add_record_attr	registers a custom property	136
add_record_message	adds a message to the list of Windows messages that WinRunner processes	136
delete_record_attr	removes a custom property	199

Custom User Interface Functions

Function	Description	See Page
create_browse_file_dialog	displays a browse dialog box from which the user selects a file	153
create_custom_dialog	creates a custom dialog box.	154
create_input_dialog	creates a dialog box with an edit field for use in interactive test execution	155
create_list_dialog	creates a dialog box with a list of items for use in interactive test execution	155
create_password_dialog	creates a password dialog box	156

Function Generator Functions

Function	Description	See Page
generator_add_category	adds a category to the Function Generator	238
generator_add_function	adds a function to the Function Generator	238

Function	Description	See Page
generator_add_function_to_category	adds a function defined in the Function Generator to a category	240
generator_add_subcategory	adds a subcategory to a category in the Function Generator	240
generator_set_default_function	sets a default function for a Function Generator category	241

GUI Checkpoint Functions

Function	Description	See Page
gui_ver_add_check	registers a new check for a GUI checkpoint	264
gui_ver_add_check_to_class	adds a check to an object class, which can be viewed in the GUI Checkpoint dialog boxes	264
gui_ver_add_class	adds a checkpoint for a new object class	265
gui_ver_set_default_checks	sets default checks for a GUI object class	265

Standard Functions

Standard functions include all the general elements of a programming language, such as basic input and output, control-flow, mathematical, and array functions.

Standard functions are divided into the following categories:

- Arithmetic Functions
- Array Functions
- Call Statements
- Compiled Module Functions
- Exception Handling Functions
- I/O Functions
- Load Testing Functions
- Miscellaneous Functions
- Operating System Functions
- Password Functions
- QuickTest 2000 Functions
- String Functions
- TDAPI Functions
- Testing Option Functions
- TestDirector Functions
- Time-Related Functions

Arithmetic Functions

Function	Description	See Page
atan2	returns the arctangent of y/x, in radians	137
cos	returns the cosine of an angle, in radians	153
exp	calculates the exponential function of *ex*	232
int	returns the integer part of a real number	267
log	returns a natural logarithm	292
rand	returns a pseudo-random real number	327
sin	calculates the sine of an angle	353
sqrt	returns the square root of its argument	360
srand	defines a seed parameter for the rand function	360

Array Functions

Function	Description	See Page
delete	removes an element from an array	198
split	divides an input string into fields, stores them in an array, and indicates the number of fields generated	359

Call Statements

Function	Description	See Page
call	invokes a test from within another test script	146
call_chain_get_attr	obtains information about a test or function in the current call chain	147
call_chain_get_depth	returns the number of items in the current call chain	147
call_close	invokes a test from within a script and closes the test when the test is completed	148
call_ex	invokes an Astra QuickTest test from within a WinRunner test script	149
return	returns a value to the calling function or test	329
texit	stops execution of a called test	439
treturn	stops a called test and returns control to the calling test	446

Compiled Module Functions

Function	Description	See Page
load	loads a compiled module into memory	290
reload	removes a compiled module from memory and loads it again	327
unload	removes a compiled module or selected functions from memory	449

Exception Handling Functions

Function	Description	See Page
define_object_exception	defines a GUI object exception	196
define_popup_exception	defines a popup window exception	197
define_tsl_exception	defines a TSL exception	198
exception_off	deactivates handling for an exception	231
exception_off_all	deactivates handling of all exceptions	231
exception_on	enables detection and handling of a previously defined exception	232

I/O Functions

Function	Description	See Page
file_close	closes a file opened with **file_open**	233
file_compare	compares the contents of two files	233
file_getline	reads a line from a file	234
file_open	opens a file for reading or printing, or creates a new file	234
file_printf	prints formatted output to a file	235
pause	pauses a test and displays a message	320
report_msg	inserts a message in a test report	329
sprintf	returns a formatted string to a variable	359
str_map_logical_to_visual	converts a logical string to a visual string or vice-versa	366

Load Testing Functions

The following functions are available for LoadRunner GUI Vusers only:

Function	Description	See Page
declare_rendezvous	declares a rendezvous	195
declare_transaction	declares a transaction	195
end_transaction	marks the end of a transaction for performance analysis	216
error_message	sends an error message to the controller	217
get_host_name	returns the name of a host	242
get_master_host_name	returns the name of the controller's host	243
lr_whoami	returns information about the Vuser executing the script	294
output_message	sends a message to the controller	319
rendezvous	sets a rendezvous point in a Vuser script	328
start_transaction	marks the beginning of a transaction for performance analysis	361
user_data_point	records a user-defined data sample	451

Miscellaneous Functions

Function	Description	See Page
eval	evaluates and executes the enclosed TSL statements	230
getenv	returns the value of any environment variable, as defined in the [WrCfg] section of *wrun.ini* in the WinRunner runtime environment	247
load_16_dll	performs a runtime load of a 16-bit Dynamic Link Library	291
load_dll	performs a runtime load of a Dynamic Link Library	292
nargs	returns the number of arguments passed to the function or test	302
tl_step	divides a test script into sections and inserts a status message in the test results for the previous section. When WinRunner is connected to a TestDirector project, the message is inserted in the TestDirector "step" table for each statement.	440
tl_step_once	divides a test script into sections and inserts a status message in the test results for the previous section. When WinRunner is connected to a TestDirector project, the message is inserted in the TestDirector "step" table once for each step name.	440
unload_16_dll	unloads a 16-bit DLL from memory	450
unload_dll	unloads a DLL from memory	450

Operating System Functions

Function	Description	See Page
dos_system	executes a DOS command	203
invoke_application	invokes a Windows application from within a test script	268

Password Functions

Function	Description	See Page
password_edit_set	sets the value of a password edit field to a given value	319
password_encrypt	encrypts a plain password	320

QuickTest 2000 Functions

The following functions are available for QuickTest 2000 users only:

Function	Description	See Page
qt_force_send_key	instructs WinRunner to recognize an edit field which prompts a screen change when information is inserted	326
qt_reset_all_force_send_key	negates screen change configurations previously made using the **qt_force_send_key** function	326

String Functions

Function	Description	See Page
ascii	returns the ASCII code of the first character in a string	137
compare_text	compares two strings	152
index	indicates the position of one string within another	267
length	counts characters in a string	273
match	finds a regular expression in a string	294
split	divides an input string into fields and stores them in an array	359
sprintf	returns a formatted string to a variable	359
substr	extracts a substring from a given string	367
tolower	converts uppercase characters to lowercase	441
toupper	converts lowercase characters to uppercase	446

TDAPI Functions

To add the TDAPI functions to WinRunner's Function Generator, run the *tdapi* test in the *lib* folder of your WinRunner installation directory.

For explanations and examples of all TDAPI functions, refer to the *TestDirector Open Test Architecture Guide*.

Project Connection Functions

Project connection functions let you select the TestDirector remote agent and project to which you want to connect. The TDAPI includes the following project connection functions:

Function	Description
TDServerInitInstance	creates a connection to the TestDirector remote agent
TDServerRelease	closes the connection to the TestDirector remote agent
TDAPI_Connect	connects to the specified project
TDAPI_Disconnect	disconnects from the currently connected project
TDAPI_CreateTDDatabasesList	creates a list of projects.
TDAPI_GetDatabaseNameFromList	retrieves the name of a project from a project list

Test Functions

Test functions let you retrieve information relating to the tests stored in TestDirector's test repository. The TDAPI contains the following test functions:

Function	Description
TDAPI_CreateTest	creates a new test
TDAPI_CreateTestList	creates a list of all tests in the project
TDAPI_DeleteTest	deletes a test

Function	Description
TDAPI_FindTestByPath	locates a test by its file system path
TDAPI_FindTestBySubject Path	locates a test by its subject path
TDAPI_GetTestFieldSize	returns the size of a field in a test.
TDAPI_GetTestFullPath	retrieves the full path of a test
TDAPI_GetTestSubjectPath	retrieves a test's subject path.
TDAPI_GetTestValue	retrieves the value of a field in a test
TDAPI_SetTestValue	updates a field in a test
TDAPI_TestExists	locates a test
TDAPI_TestListMove	steps through a list of tests

Design Steps Functions

TestDirector tests are divided into design steps. These are detailed step-by-step instructions that describe the actions the tester (manual tests) or testing tool (automated tests) should perform as the test is executed. The TDAPI contains the following design steps functions:

Function	Description
TDAPI_CreateDesStep	creates a design step in a test
TDAPI_CreateDesStepList	creates a list of design steps
TDAPI_DeleteDesStep	deletes a design step in a test
TDAPI_DesStepListMove	steps through a list of design steps
TDAPI_GetDesStepFieldSize	returns the size of a design step field
TDAPI_GetDesStepValue	retrieves the value of a field in a design step
TDAPI_SetDesStepValue	updates a field in a design step record

Defect Tracking Functions

Defect records contain errors discovered during test execution. Defect tracking functions let you add, locate, update defect information in your project. The TDAPI contains the following defect tracking functions:

Function	Description
TDAPI_BugListMove	steps through a list of defects
TDAPI_CreateBug	creates a new defect
TDAPI_CreateBugList	creates a list of defects in the project
TDAPI_DeleteBug	deletes a defect from the TestDirector project
TDAPI_GetBugFieldSize	returns the size of a defect field
TDAPI_GetBugValue	retrieves the value of a field in a defect
TDAPI_SetBugValue	updates a field in a defect

Test Set Functions

A test set is a group of tests designed to meet a specific testing goal. For example, to verify that the application under test is functional and stable, you create a sanity test set that checks the application's basic features. The TDAPI contains the following functions to help you build and maintain test sets:

Function	Description
TDAPI_AddTestToCycle	adds a test to a test set
TDAPI_CreateCycle	creates a new test set
TDAPI_CreateCycleList	creates a list of test sets in the project
TDAPI_CreateTestinCycleList	creates a list of test sets in the project
TDAPI_CycleExists	checks a test set exists
TDAPI_CycleListMove	steps through a list of test sets
TDAPI_DeleteCycle	deletes a test set
TDAPI_DeleteTestFromCycle	removes a test from a test set

Function	Description
TDAPI_GetCyclesForTest	retrieves names of the test sets to which the test belongs
TDAPI_GetCycleValue	retrieves value of a field in a test set record
TDAPI_GetCycleFieldSize	returns the size of a field in a test set
TDAPI_GetTestInCycleFieldSize	returns the size (in bytes) of a field of a test in a test set.
TDAPI_GetTestInCycleValue	retrieves the value of a field in a test in a test set record
TDAPI_SetCycleValue	updates a field of a test set record to new value
TDAPI_SetTestInCycleValue	updates the specified field of a test set record to new value
TDAPI_TestInCycleExists	looks for a test in a test set
TDAPI_TestInCycleListMove	steps through a list of tests in a test set

Test Run Functions

A test run stores information about how each test performs during test execution. The TDAPI includes the following functions to let you create and manage test runs:

Function	Description
TDAPI_CreateRun	creates a test run for a test
TDAPI_CreateRunList	creates a list of test runs
TDAPI_DeleteRun	deletes a test run
TDAPI_GetRunFieldSize	returns the size of a field in a test run
TDAPI_GetRunValue	retrieves value of a field in a test run
TDAPI_RunListMove	steps through a list of test runs
TDAPI_SetRunValue	updates a field in a test run record

Test Step Functions

Test steps record the performance of each test step during a test run. Each test step contains detailed information on what actions were performed during each test run. These include the IDs of the test and test run, the name of the step, the status of the step, and the line number of where the step will appear within the test script. The TDAPI contains the following functions to help you create and manage test runs:

Function	Description
TDAPI_AddStepToRun	creates a step in a test run
TDAPI_CreateStepList	creates a list of steps
TDAPI_DeleteStep	deletes a step in a test run
TDAPI_GetStepFieldSize	retrieves size of a field in a step
TDAPI_GetStepValue	returns the value of a field in a step
TDAPI_SetStepValue	updates a step to a new value
TDAPI_StepListMove	steps through a list of defects

Test Plan Tree Functions

The test plan tree is a representation of how information is stored within your project. When you access the project, you use the tree to locate information in the project. The TDAPI contains the following functions to help you create and manage test plan trees:

Function	Description
TDAPI_GetCategoryTreeRoot	returns the ID of a the test plan tree's subject folder
TDAPI_TreeAddNode	adds a folder to the test plan tree
TDAPI_TreeChanged	indicates if changes were made to the test plan tree
TDAPI_TreeCreateRoot	sets a parent folder in the test plan tree
TDAPI_TreeGetChild	returns the ID of a subfolder in a test plan tree folder

Function	Description
TDAPI_TreeGetNodeAttribute	returns the ID of a subfolder in the test plan tree
TDAPI_TreeGetNumberOfChildren	returns the number of subfolders contained in a folder
TDAPI_TreeGetRoot	returns the ID of the current parent folder
TDAPI_TreeGetSubjectIDFromPath	returns the ID of a test plan tree folder

Project Administration Functions

Project administration functions let you create and manage project users, return internal project error information, and view project statistics. The TDAPI includes the following project administration functions:

Function	Description
TDAPI_CreateUser	creates a new user
TDAPI_CreateUserList	creates a list of TestDirector users
TDAPI_DeleteUser	deletes a user
TDAPI_GetFieldProperty	returns information from the System_fields table
TDAPI_GetFunctionStatistics	returns performance statistics of TDAPI functions
TDAPI_GetLastErrorString	returns a description of an error
TDAPI_GetStackErrorString	returns all the errors in the error stack
TDAPI_GetUserFieldSize	returns the size of the field in a user record.
TDAPI_GetUserValue	returns value of a field in a user record
TDAPI_SetUserValue	updates a field in a user record
TDAPI_UserExists	checks whether a user record exists
TDAPI_UserListMove	returns the current user name.

Testing Option Functions

Function	Description	See Page
get_aut_var	returns the value of a variable that determines how WinRunner learns descriptions of objects, records tests, and runs tests on Java applets or applications.	241
getvar	returns the value of a testing option	247
set_aut_var	sets how WinRunner learns descriptions of objects, records tests, and runs tests on Java applets or applications	338
setvar	sets the value of a testing option	342

TestDirector Functions

The following functions are only available when working with TestDirector:

Function	Description	See Page
tddb_get_step_value	returns the value of a field in the "dessteps" table in a TestDirector database	408
tddb_get_test_value	returns the value of a field in the "test" table in a TestDirector database	409
tddb_get_testset_value	returns the value of a field in the "testcycl" table in a TestDirector database.	409
tddb_load_attachment	loads a test's file attachment and returns the file system path of the location where it was loaded.	410
tl_step	divides a test script into sections	440
tl_step_once	divides a test script into sections and inserts a status message in the test results for the previous section	440

Time-Related Functions

Function	Description	See Page
end_transaction	marks the end of a transaction for performance analysis	216
get_time	returns the current system time	246
pause	pauses test execution and displays a message	320
start_transaction	marks the beginning of a transaction for performance analysis	361
time_str	converts the integer returned by **get_time** to a string	439
wait	causes test execution to pause for the specified amount of time	452

6

Return Values

Unless otherwise specified, functions may return one of the general return values listed below. This function returns one of the return values listed in “General Return Values,” on page 118.

In addition, some functions may return specialized return values.

- For database functions (**db**_), see also“Return Values for PowerBuilder and Table Functions,” on page 123.
- For table and PowerBuilder functions (**tbl**_ and **datawindow**_), see also “Return Values for Database Functions,” on page 122.
- For Terminal Emulator functions (**TE**_), see also “Return Values for Terminal Emulator Functions,” on page 124.

General Return Values

Unless otherwise specified, all functions may return one of the general return values listed below.

Error Code	Number	Description
E_OK	0	Operation successful.
E_FILE_OK	0	Operation successful.
E_GENERAL_ERROR	-10001	General error occurred.
E_NOT_FOUND	-10002	Window or object not found.
E_NOT_UNIQUE	-10003	More than one window or object responds to the physical description.
E_ILLEGAL_OPERATION	-10004	Operation invalid for object. For more information, see the note on page 122.
E_OUT_OF_RANGE	-10005	Parameter is out of range.
E_ILLEGAL_PARAMETER	-10006	Specified value for one or more parameters is invalid.
E_FILE_OPEN	-10007	Cannot open file. File may already be open.
E_ILLEGAL_ARGLIST	-10009	Illegal argument list.
E_NOT_IN_MAPPING	-10011	Cannot find window or object in the GUI map.
E_EXIST	-10012	Object already exists.
E_OPERATION_NOT_PERFORMED	-10018	Cannot perform requested operation.
E_FUNCTION_NOT_LOADED	-10019	Specified function is not currently loaded. In the case of a handler function, the exception is undefined.
E_NO_FONT	-10024	No font was loaded.

Error Code	Number	Description
E_SYNTAX	-10025	Syntax error in TSL statement.
E_NO_SVC	-10026	Called function does not exist.
E_FUNCTION_NOT_IMPLEMENTED	-10028	Called function could not be implemented.
E_ATTR_IN_DESC	-10029	Specified property is used in the object's physical description in the GUI map.
E_NO_LABEL	-10030	Label property is not used in the window's physical description in the GUI map.
E_USING_WIN_TITLE	-10031	Error using window title.
E_FILE_NOT_OPEN	-10032	File is not open.
E_FILE_NOT_FOUND	-10033	File is not found.
E_FILE_LINE_TRUNC	-10034	File line is truncated.
E_FILE_EOF	-10035	End of file.
E_FILE_NOT_READ_MODE	-10036	Cannot read file because file is not in read mode.
E_FILE_READ_MODE	-10037	Cannot write to file because file is in read mode.
E_BAD_PATH	-10038	Incorrect path.
E_ACCESS_DENIED	-10039	Access is denied.
E_DISK_FULL	-10040	Disk is full.
E_SHARING_VIOLATION	-10041	Sharing violation.
E_FILE_ERROR	-10042	General file error.
E_NOT_PARAMETER	-10044	Parameter is invalid.

Error Code	Number	Description
E_MAX_COLUMNS_EXCEEDED	-10045	Column cannot be added to the data table because the data table already contains the maximum allowable number of columns (255).
E_NOT_DISPLAYED	-10101	Window, object or data table is not displayed.
E_DISABLED	-10102	Window or object is disabled.
E_IMPROPER_CLASS	-10103	Operation cannot be performed on this object class.
E_ILLEGAL_KEY	-10104	Key or mouse button name is illegal.
E_ITEM_NOT_FOUND	-10105	Item in list or menu not found.
E_NOT_RESPONDING	-10106	Application did not respond within the specified timeout.
E_OBJECT_SYNTAX	-10107	Illegal syntax used.
E_ILLEGAL_NUM_OF_PARAMS	-10112	Number of parameters does not match those for the command.
E_AUT_DISCONNECTED	-10114	The application under test was disconnected.
E_ATTR_NOT_SUPPORTED	-10115	Property in function is not supported.
E_MISMATCH	-10116	Verification mismatch found.
E_ITEM_NOT_UNIQUE	-10117	More than one item in list or menu has this name.
E_TEXT_TOO_LONG	-10118	Text to be inserted exceeds maximum number of characters. The string will be truncated to the appropriate length.
E_DIFF	-10119	GUI checkpoint mismatch found.

Error Code	Number	Description
E_CMP_FAILED	-10120	Comparison failed.
E_CAPT_FAILED	-10121	Capture failed.
E_SET_WIN	-10123	Window setting parameters missing.
E_BITMAP_TIMEOUT	-10124	The **wait_bitmap** operation exceeded specified wait time.
E_BAD_CHECK_NAME	-10125	Syntax error in requested check.
E_OBJ_CAPT_FAILED	-10126	Capture failed for specified object.
E_UNEXP_WIN	-10127	Window in checklist is not the window in the command.
E_CAPT_FUNC_NOT_FOUND	-10128	Capture function not defined.
E_CMP_FUNC_NOT_FOUND	-10129	Compare function not defined.
E_TSL_ERR	-10130	Syntax error detected.
E_TOOLKIT_MISMATCH	-10131	Incorrect toolkit detected.
E_RECT_COVERED	-10132	Desired rectangle is hidden.
E_RECT_OUT	-10133	Desired rectangle does not appear on screen.
E_AREA_COVERED	-10134	Desired area is hidden.
E_AREA_OUT	-10135	Desired area does not appear on screen.
E_STR_NOT_FOUND	-10136	Text string not located.
E_WAIT_INFO_TIMEOUT	-10137	The **wait_info** operation exceeded specified wait time.
E_DIFF_SIZE	-10139	Expected and actual bitmaps are different sizes.
E_DROP_WITHOUT_DRAG	-10141	Drop operation is performed without a drag operation preceding it.

Error Code	Number	Description
E_VIR_OBJ	-10142	Function not supported for virtual objects.
E_MISSING_ATTR	-10143	Lack of x-, y-, height, or width coordinates in the description of the virtual object.
E_EDIT_SET_FAILED	-10144	The **edit_set** operation failed.

Note about E_ILLEGAL_OPERATION: A function may fail if the method does not exist, the parameter number is wrong, the parameter types are wrong, etc. For more information regarding a failure, insert the following statement and then rerun the function. This will provide you with more details.

```
set_aut_var("DEBUG_GCALL", ON);
```

Return Values for Database Functions

Unless otherwise specified in the function description, database functions (**db_**) may return one of the following return values in addition to the regular return values.

Error Code	Number	Description
E_SESSION_NOT_STARTED	-10160	The database session was not started.
E_CONNECTION_FAILED	-10161	The connection to the database failed.
E_SQL_SYNTAX_ERROR	-10162	Syntax error in the SQL statement.
E_PASSED_LAST_ROW	-10163	The row number exceeded the row number of the last row in the table.
E_QUERY_CAPTURE_FAILED	-10164	General error while capturing data.

Return Values for PowerBuilder and Table Functions

Unless otherwise specified, table and PowerBuilder functions (**tbl_** and **datawindow_**) may return one of the following return values in addition to the regular return values.

Error Code	Number	Description
PB_E_NO_PBTAPI	-10145	Internal error.
PB_E_ROW_COL_INVALID	-10146	Parameter is out of range.
PB_E_ROW_INVALID	-10147	Parameter is out of range.
PB_E_DESC_OVERFLOW	-10149	Internal error.
PB_E_DW_LIST_ITEM_NOT_FOUND	-10150	Item not found.
PB_E_DESC_NOT_FOUND	-10151	Internal error.
PB_E_CELL_NOT_VISIBLE	-10152	Cell not visible.
PB_E_PARSE_ERROR	-10153	Internal error.
PB_E_TAPI_ERROR	-10154	Internal error.
PB_E_BUF_NOT_INIT	-10155	Internal error.
PB_E_CELL_NOT_FOUND	-10156	Cell not found.
PB_E_API_ERROR	-10157	General error.
PB_E_INVALID_COL_TYPE	-10158	Unknown column type.
PB_E_ILLEGAL_COORDS	-10159	Illegal coordinates.

Return Values for Terminal Emulator Functions

Unless otherwise specified in the function description, terminal emulator functions (**TE_**) may return one of the following return values in addition to the regular return values.

WinRunner/TE Error Code	Number	Description
E_PROT_FIELD	-10400	Field is protected and cannot accept input.
E_TERM_ DISCONNECTED	-10401	Terminal is probably disconnected.
E_TERM_LOCKED	-10402	Terminal is locked. In an interactive run, the user can continue, pause, or unlock the terminal. In a batch run, WinRunner unlocks the terminal and sends a report message.
E_TERM_BUSY	-10403	Terminal is synchronizing. In an interactive run, user can continue, pause, or perform **wait_sync**. In a batch run, WinRunner synchronizes and sends a report message.
E_RULE_NOT_FOUND	-10405	Cannot write to a merged field after all merged fields were reset.

7

Alphabetical Reference

This chapter contains an alphabetical reference of all TSL functions in WinRunner. The name of each function appears, along with the type and the category to which the function belongs. The following additional information is provided for each function:

- description
- complete syntax
- parameter definitions
- return values
- availability

For additional information and examples of usage, refer to the *TSL Online Reference*. You can open the *TSL Online Reference* from the WinRunner group in the Start menu or from WinRunner's Help menu. To open the online reference to a specific function, click the context-sensitive Help button and then click a TSL statement in your test script, or place your cursor on a TSL statement in your test script and then press the F1 key. Check Mercury Interactive's Customer Support Web site for updates to the *TSL Online Reference*.

ActiveBar_combo_select_item

Context Sensitive • Active Bar

selects an item in a ComboBox tool.

ActiveBar_combo_select_item (*band_tool* **,** *item_name* **);**

band_tool	A string containing the band identifier (Name or Caption) and tool identifier (Name, Caption or ToolID), separated by semicolon (;). The *band identifier* can be specified either by Name or Caption The *tool identifier* can be specified either by Name, Caption, or ToolID. The ampersand character (&) in Caption is ignored.
item_name	Either item text or item number in the "#" format.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for DataDynamics ActiveBar 1.0.

Note: This function is not recordable.

ActiveBar_dump

Context Sensitive • Active Bar

stores information about ActiveBar bands and tools. This information includes captions, names, types and IDs.

ActiveBar_dump (*file_name* **);**

file_name	The file pathname in which the ActiveBar information will be dumped.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for DataDynamics ActiveBar 1.0 and Sheridan ActiveToolbars 1.01.

Note: This function is not recordable.

ActiveBar_select_menu

Context Sensitive • Active Bar

selects a menu item in a toolbar.

ActiveBar_select_menu (*band_tool* **[,** *events_only* **]);**

band_tool	A string containing the band identifier (Name or Caption) and tool identifier (Name, Caption or ToolID), separated by semicolon (;). The *band identifier* can be specified either by Name or Caption The *tool identifier* can be specified either by Name, Caption, or ToolID. The ampersand character (&) in Caption is ignored.
events_only	TRUE or FALSE. If this parameter set to TRUE, then executing this function during a test run uses events.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for DataDynamics ActiveBar 1.0 and Sheridan ActiveToolbars 1.01.

Note: The *events_only* parameter is supported only for the DataDynamics ActiveBar.

ActiveBar_select_tool

Context Sensitive • Active Bar

selects a tool in the toolbar.

ActiveBar_select_tool (*band_tool* **[,** *events_only* **]);**

band_tool	A string containing the band identifier (Name or Caption) and tool identifier (Name, Caption or ToolID), separated by semicolon (;). The *band identifier* can be specified either by Name or Caption The *tool identifier* can be specified either by Name, Caption, or ToolID. The ampersand character (&) in Caption is ignored.
events_only	TRUE or FALSE. If this parameter set to TRUE, then executing this function during a test run uses events.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for DataDynamics ActiveBar 1.0 and Sheridan ActiveToolbars 1.01.

Note: The *events_only* parameter is supported only for the DataDynamics ActiveBar.

ActiveX_activate_method

Context Sensitive • ActiveX/VIsual Basic

invokes an ActiveX method of an ActiveX control.

ActiveX_activate_method (*object*, *ActiveX_method*, *return_value* [,*param*$_4$,…,*param*$_8$] **);**

object	The name of the object.
ActiveX_method	The ActiveX control method to be invoked.

Tip: You can use the ActiveX tab in the GUI Spy to view the methods of an ActiveX control.

---

return_value	Return value of the method.
param$_4$,…,*param*$_8$	The parameters of the method (optional). These parameters may only be call variables and not constants.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available only for the following add-ins: ActiveX, PowerBuilder, Visual Basic, or WebTest.

ActiveX_get_info

Context Sensitive • ActiveX/VIsual Basic

returns the value of an ActiveX/Visual Basic control property. The property can have no parameters or a one or two-dimensional array. Properties can also be nested.

For an ActiveX property without parameters, the syntax is as follows:

ActiveX_get_info (*ObjectName*, *PropertyName*, *OutValue* **[** , *IsWindow* **]);**

For an ActiveX property that is a one-dimensional array, the syntax is as follows:

ActiveX_get_info (*ObjectName*, *PropertyName* **(** *X* **)** , *OutValue* **[** , *IsWindow* **]);**

For an ActiveX property that is a two-dimensional array, the syntax is as follows:

ActiveX_get_info (*ObjectName*, *PropertyName* **(** *X* , *Y* **)** , *OutValue* **[** , *IsWindow* **]);**

ObjectName	The name of the ActiveX/Visual Basic control.
PropertyName	Any ActiveX/Visual Basic control property.

Tip: You can use the ActiveX tab in the GUI Spy to view the properties of an ActiveX control.

OutValue	The output variable that stores the property value.
IsWindow	An indication of whether the operation is performed on a window. If it is, set this parameter to TRUE.

Note: The *IsWindow* parameter should be used only when this function is applied to a Visual Basic form to get its property or a property of its sub-object. In order to get a property of a label control you should set this parameter to TRUE.

Note: To get the value of nested properties, you can use any combination of indexed or non-indexed properties separated by a dot. For example:

```
ActiveX_get_info("Grid", "Cell(10,14).Text", Text);
```

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available only for the following add-ins: ActiveX, PowerBuilder, Visual Basic, or WebTest.

ActiveX_set_info

Context Sensitive • ActiveX/VIsual Basic

sets the value of an ActiveX/Visual Basic control property. The property can have no parameters or a one or two-dimensional array. Properties can also be nested.

For an ActiveX property without parameters, the syntax is as follows:

ActiveX_set_info (*ObjectName, PropertyName, Value* **[,** *Type* **[,** *IsWindow* **]]);**

For an ActiveX property that is a one-dimensional array, the syntax is as follows:

ActiveX_set_info (*ObjectName*, *PropertyName* **(** *X* **) ,** *Value* **[,** *Type* **[,** *IsWindow* **]]);**

For an ActiveX property that is a two-dimensional array, the syntax is as follows:

ActiveX_set_info (*ObjectName*, *PropertyName* **(** *X* **,** *Y* **) ,** *Value* **[,** *Type* **[,** *IsWindow* **]]);**

ObjectName	The name of the ActiveX/Visual Basic control.
PropertyName	Any ActiveX/Visual Basic control property.

Tip: You can use the ActiveX tab in the GUI Spy to view the properties of an ActiveX control.

Value	The value to be applied to the property.
Type	The value type to be applied to the property. The following types are available:

VT_I2 (short)	VT_I4 (long)	VT_R4 (float)
VT_R8 (float double)	VT_DATE (date)	VT_BSTR (string)
VT_ERROR (S code)	VT_BOOL (boolean)	VT_UI1 (unsigned char)

IsWindow	An indication of whether the operation is performed on a window. If it is, set this parameter to TRUE.

Note: The *IsWindow* parameter should be used only when this function is applied to a Visual Basic form to set its property or a property of its sub-object. In order to get a property of a label control you should set this parameter to TRUE.

Note: To set the value of nested properties, you can use any combination of indexed or non-indexed properties separated by a dot. For example:

```
ActiveX_set_info("Book", "Chapter(7).Page(2).Caption", "SomeText");
```

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available only for the following add-ins: ActiveX, PowerBuilder, Visual Basic, or WebTest.

---

add_cust_record_class

Customization • Custom Record

associates a custom record function or a logical name function with a custom class.

add_cust_record_class (*MSW_class*, *dll_name* **[,** *rec_func* **[,** *log_name_func* **]]);**

MSW_class	The custom class with which the function is associated.
dll_name	The full path of the DLL containing the function.
rec_func	The name of the custom record function defined in the DLL. This custom record function returns the statement recorded in the test script.
log_name_func	The name of the logical name function defined in the DLL. This logical name function supplies custom logical names for GUI objects in the custom class, MSW_class.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

add_dlph_obj

Context Sensitive • Delphi

adds a Delphi object.

add_dlph_obj (*MSW_class*, *class*, *oblig_attr*, *optional_attr*, *default _check_prop*, *item* **);**

MSW_class	The custom class with which the function is associated.
class	The name of the Mercury class, MSW_class, or X_class.
oblig_attr	A list of obligatory properties (separated by blank spaces).
optional_attr	A list of optional properties (separated by blank spaces), in descending order, to add to the description until the object is uniquely identified.
default_check_prop	The default status of the object.
item	Indicates whether the item is an object or a grid.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available only for WinRunner with Delphi support.

add_record_attr

Customization • Custom Record

registers a custom property.

add_record_attr (*attr_name*, *dll_name*, *query_func_name*, *verify_func_name* **);**

attr_name	The name of the custom property to register. This cannot be a standard WinRunner property name.
dll_name	The full path of the DLL in which the query and verify functions are defined.
query_func_name	The name of the query function included in the DLL.
verify_func_name	A WinRunner standard property verification function (see below) or a custom property verification function included in the DLL.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

add_record_message

Customization • Custom Record

adds a message to the list of Windows messages.

add_record_message (*message_number* **);**

message_number	The number or identifier of the Windows message.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

ascii

Standard • String

returns the ASCII code of the first character in a string.

ascii (*string* **);**

string	A string expression.

Return Values

This function returns the ASCII code of the first character in the string.

Availability

This function is always available.

atan2

Standard • Arithmetic

returns the arctangent of y/x.

atan2 (*y*, *x* **);**

Return Values

This function returns a real number.

Availability

This function is always available.

button_check_info

Context Sensitive • Button Object

checks the value of a button property.

button_check_info (*button*, *property*, *property_value* **);**

button	The logical name of the button.
property	The property to check.
property_value	The property value.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

button_check_state

Context Sensitive • Button Object

checks the state of a radio or check button.

button_check_state (*button*, *state* **);**

button	The logical name of the button.
state	The state of the button. The value can be 1 (ON) or 0 (OFF). A value of 2 indicates that the button is DIMMED.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

button_get_info

Context Sensitive • Button Object

returns the value of a button property.

button_get_info (*button*, *property*, *out_value* **);**

button	The logical name of the button.
property	Any of the properties listed in the *User's Guide*.
out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

button_get_state

Context Sensitive • Button Object

returns the state of a radio or check button.

button_get_state (*button*, *out_state* **);**

button	The logical name of the button.
out_state	The output variable that stores the state of the button. For check and radio buttons, the value can be 1 (ON) or 0 (OFF). A value of 2 indicates that the button is DIMMED. For push buttons, the value is 0.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

button_press

Context Sensitive • Button Object

clicks on a push button.

button_press (*button* **);**

button	The logical name of the button.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

button_set

Context Sensitive • Button Object

sets the state of a radio or check button.

button_set (*button*, *state* **);**

button	The logical name of the button.
state	For a radio button, one of the following states can be specified: DIMMED, ON, OFF, or TOGGLE. The TOGGLE option reverses the current state between ON and OFF. For a check button, the state can be ON or OFF.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

button_wait_info

Context Sensitive • Button Object

waits for the value of a button property.

button_wait_info (*button*, *property*, *value*, *time* **);**

button	The logical name of the button.
property	Any of the properties listed in the *WinRunner User's Guide*.
value	The property value.
time	Indicates the maximum interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

calendar_activate_date

Context Sensitive • Calendar

double-clicks the specified date in a calendar.

calendar_activate_date (*calendar*, *date* **);**

calendar	The logical name of the calendar.
date	The date in the calendar.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for ActiveX controls.

This function is available for calendars included in Visual Studio version 6 and higher and in Internet Explorer Active Desktop version 4 and higher.

calendar_get_selected

Context Sensitive • Calendar

retrieves and counts the selected dates in a calendar.

calendar_get_selected (*calendar*, *selected_dates*, *selected_dates_count* **[** , *selected_time* **]);**

calendar	The logical name of the calendar.
selected_dates	The output variable that stores the dates selected in the calendar.
selected_dates_count	The output variable that stores the total number of selected dates in the calendar.
selected_time	The output variable that stores the time selected. This parameter is valid for the Date Time control only.

Return Values

This function returns a string representing the date and an integer representing the number of dates chosen.

Availability

This function is supported for ActiveX controls.

This function is available for calendars included in Visual Studio version 6 and higher and in Internet Explorer Active Desktop version 4 and higher.

calendar_get_status

Context Sensitive • Calendar

retrieves the selection status.

calendar_get_status (*calendar*, *selection_status* **);**

calendar	The logical name of the calendar.
selection_status	The status of the date; it may either be valid or invalid.

Based on the validity of the date, **calendar_get_status** retrieves the integer 1 (valid) or 0 (invalid).

Return Values

This function returns an integer, 1 or 0, based on whether or not the status is valid or invalid.

Availability

This function is supported for the Date Time control only.

This function is available for calendars included in Visual Studio version 6 and higher and in Internet Explorer Active Desktop version 4 and higher.

---

calendar_get_valid_range

Context Sensitive • Calendar

retrieves the range of allowed values for a calendar control.

calendar_get_valid_range (*calendar*, *in_range_type*, *allowed_min_time*, *allowed_max_time* **);**

calendar	The logical name of the calendar.
in_range_type	DATE_TYPE (1) minimum and maximum allowed **date** values for the control. TIME_TYPE (0) minimum and maximum allowed **time** values for the control.
allowed_min_time	The minimum allowed date or time of the control, according to the in_range_type parameter.
allowed_max_time	The maximum allowed date or time of the control, according to the in_range_type parameter.

Return Values

This function returns two strings representing the minimum and maximum dates allowed.

Availability

This function is available for the Date Time and Month Calendar controls only.

This function is available for calendars included in Visual Studio version 6 and higher and in Internet Explorer Active Desktop version 4 and higher.

calendar_select_date

Context Sensitive • Calendar

clicks the specified date in a calendar.

calendar_select_date (*calendar*, *date* **);**

calendar	The logical name of the calendar.
date	The date is recorded in the following format: DD-MMM-YYYY. Numbers as well letters may be used for months.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for ActiveX controls only.

This function is available for calendars included in Visual Studio version 6 and higher and in Internet Explorer Active Desktop version 4 and higher.

calendar_select_range

Context Sensitive • Calendar

selects a range of dates in the DD-MM-YYYY date format.

calendar_select_range (*calendar*, *start_date*, *end_date* **);**

calendar	The logical name of the calendar.
start_date	The first day in the range.
end_date	The last day in the range.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for the Month Calendar control with the multiple selection policy only.

This function is available for calendars included in Visual Studio version 6 and higher and in Internet Explorer Active Desktop version 4 and higher.

calendar_select_time

Context Sensitive • Calendar

when a date is recorded with a time, WinRunner records the time using this function in the HH:MM:SS time format.

calendar_select_time (*calendar*, *time* **);**

calendar	The logical name of the calendar.
time	The time selected in the HH:MM:SS format.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is valid for the Date Time control only.

This function is available for calendars included in Visual Studio version 6 and higher and in Internet Explorer Active Desktop version 4 and higher.

calendar_set_status

Context Sensitive • Calendar

sets the selection status.

calendar_set_status (*calendar*, *selection_status* **);**

calendar	The logical name of the calendar.
selection_status	The status of the date may be valid (1) or invalid (2). The valid selection status selects the check box and the invalid selection clears the check box.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is valid for the Date Time control only.

This function is available for calendars included in Visual Studio version 6 and higher and in Internet Explorer Active Desktop version 4 and higher.

---

call

Standard • Call Statements

invokes a test from within a test script.

call *test_name* **(** [*parameter*$_1$, *parameter*$_2$, ... *parameter*$_n$] **);**

test_name	The name of the test to invoke.
parameter	The parameters defined for the called test.

Note: You can parameterize a **call** statement using the **eval** function in order to call several tests and the relevant parameters for each within a single **call** loop. For more information, see **eval** on page 230.

Return Values

The **call** statement returns an empty string, unless the called test returns an expression using **treturn** or **texit**.

Availability

This function is always available.

Note: The **call** statement is not a function. Therefore, it does not appear in the Function Generator.

---

call_chain_get_attr

Standard • Call Statements

returns information about a test or function in the call chain.

call_chain_get_attr (*property*, *level*, *out_value* **);**

property	One of the properties listed in the table below.
level	A number indicating the test or function in the call chain. 0 indicates the current test/function; 1 indicates the test/function that called the current item; 2 indicates two levels above the current item, etc.
out_value	The output variable that stores the value of the specified *property*.

Property	Description
testname	The name of the test/function specified by level.
line_no	The line number where the test call statement or function call appears.
type	Indicates whether the call item is a test or a function.
function	If the specified call item is a function, its name.

Return Values

This statement returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

call_chain_get_depth

Standard • Call Statements

returns the number of items in the call chain.

call_chain_get_depth ( );

The **call_chain_get_depth** statement returns the number of tests or functions in the current call chain.

Return Values

This statement returns the number of items in the call chain, or 0 when the call chain is empty.

Availability

This function is always available.

---

call_close

Standard • Call Statements

invokes a test from within a script and closes the test when the test is completed.

call_close *test_name* **(** **[** *parameter*$_1$**,** *parameter*$_2$**,** ... *parameter*$_n$ **]** **);**

test_name	The name of the test to invoke.
parameter	The parameters defined for the called test.

Note: You can parameterize a **call_close** statement using the **eval** function in order to call several tests and the relevant parameters for each within a single **call_close** loop. For more information, see **eval** on page 230.

Return Values

The **call_close** statement returns an empty string, unless the called test returns an expression using **treturn** or **texit**.

Availability

This statement is always available.

Note: The **call_close** statement is not a function. Therefore, it does not appear in the Function Generator.

---

call_ex

Standard • Call Statements

invokes an Astra QuickTest test from within a WinRunner test script.

call_ex (*Astra_test_path* **);**

Astra_test_path	The full pathname of the Astra QuickTest test in quotation marks. Alternatively you may enter a variable that has previously been defined with the full pathname of the test.

The **call_ex** statement invokes an Astra test from with a WinRunner test script. If Astra QuickTest is not installed on the computer running the calling test, the statement returns a "General Error" result.

If the statement does not return a “pass” return value, the calling test fails.

Note that since WinRunner and Astra QuickTest use similar technologies to run tests, not all environments are fully supported when running Astra QuickTest tests from within WinRunner.

Return Values

The **call_ex** statement returns 1 if the Astra test runs completely and passes, or 0 for any other result.

Availability

This function is always available. If Astra QuickTest is not installed on the computer running the calling test, however, the statement returns a "General Error" result.

check_window

Analog • Bitmap Checkpoint

compares a bitmap of a window to an expected bitmap.

Note: This function is provided for backward compatibility only. You should use the corresponding Context Sensitive **win_check_bitmap** and **obj_check_bitmap** functions.

---

check_window (*time*, *bitmap*, *window*, *width*, *height*, *x*, *y* **[** , $relx_1$, $rely_1$, $relx_2$, $rely_2$ **]);**

time	Indicates the interval between the previous input event and the bitmap capture, in seconds. This interval is added to the *timeout_msec* testing option. The sum is the interval between the previous event and the bitmap capture, in seconds.
bitmap	A string identifying the captured bitmap. The string length is limited to 6 characters.
window	A string indicating the name in the window banner.
width, *height*	The size of the window, in pixels.
x, *y*	The position of the upper left corner of the window (relative to the screen). In the case of an MDI child window, the position is relative to the parent window.
$relx_1$, $rely_1$	For an area bitmap: the coordinates of the upper left corner of the rectangle, relative to the upper left corner of the client window (the *x* and *y* parameters).
$relx_2$, $rely_2$	For an area bitmap: the coordinates of the lower right corner of the rectangle, relative to the lower right corner of the client window (the *x* and *y* parameters).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

The **check_window** function is not available for LoadRunner GUI Vusers running on UNIX platforms. In this case, **check_window** statements are treated as **wait_window** statements.

click

Analog • Input Device

inputs a mouse button click.

click (*mouse_button* **[,** *time* **]);**

mouse_button	The name of the mouse button to be activated. The names (Left, Right, Middle) are defined by the XR_INP_MKEYS system parameter in the system configuration file.
time	The interval that elapses before the click is entered, in seconds. The default, if no *time* is specified, is 0.

Return Values

The return value of the function is always 0.

Availability

This function is always available.

click_on_text

Analog• Input Device

clicks on a string.

Note: This function is provided for backward compatibility only. You should use the corresponding Context Sensitive **obj_click_on_text** and **win_click_on_text** functions.

---

click_on_text (*string*, x_1, y_1,x_2, y_2 **[,** *click_sequence* **]);**

string	A complete string, preceded and followed by a space outside the quotation marks. A regular expression with no blank spaces can be specified.
x_1,y_1,x_2,y_2	The area of the screen to be searched, specified by the coordinates x_1,y_1,x_2,y_2 , which define any two diagonal corners of a rectangle. The interpreter searches for the text in the area defined by the rectangle.

click_sequence	The mouse button clicks that are part of the string's input. The mouse button input is evaluated to a string using the conventions of the click function. (For further details, see the description under click.) The default, if no *click_sequence* is specified, is a single click of the left mouse button.

Return Values

This function returns 0 if the text is located. If the text is not found, the function returns 1.

Availability

This function is always available.

---

compare_text

Standard • String

compares two strings.

compare_text (*str*$_1$, *str*$_2$ [, *chars*$_1$, *chars*$_2$]);

str$_1$, *str*$_2$	The two strings to be compared.
chars$_1$	One or more characters in the first string.
chars$_2$	One or more characters in the second string. These characters are substituted for those in *chars*$_1$.

Return Values

This function returns the value 1 when the two strings are the same, and 0 when they are different.

Availability

This function is always available.

cos

Standard • Arithmetic

calculates the cosine of an angle.

cos (*x*);

x	Specifies an angle, expressed in radians.

Return Values

This function returns a real number.

Availability

This function is always available.

create_browse_file_dialog

Customization • Custom User Interface

displays a browse dialog box from which the user selects a file.

create_browse_file_dialog ($filter_1$ [; $filter_2$; $filter_3$; ...$filter_n$]);

filter	Sets one or more filters for the files to display in the browse dialog box. You must use wildcards to display all files (***.***) or only selected files (******.exe* or ******.txt*, etc.), even if an exact match exists. Multiple files are separated by semicolons and all the filters together are considered a single string.

Return Values

This function returns a string representing the label of the selected file.

Availability

This function is always available.

create_custom_dialog

Customization • Custom User Interface

creates a custom dialog box.

create_custom_dialog (*function_name*, *title*, *button_name*, *edit_name*$_1$ **[** , *edit_name*$_2$, *check_name*$_1$ **[** , *check_name*$_2$ **]]);**

function_name	The name of the function that is executed when you press the "execute" button.
title	An expression that appears in the window banner of the dialog box.
button_name	The label that will appear on the "execute" button. You press this button to execute the contained function.
edit_name	The labels of the edit box(es) of the dialog box. Multiple edit box labels are separated by commas, and all the labels together are considered a single string. If the dialog box has no edit boxes, this parameter must be an empty string (empty quotation marks).
check_name	Contains the labels of the check boxes in the dialog box. Multiple check box labels are separated by commas, and all the labels together are considered a single string. If the dialog box has no check boxes, this parameter must be an empty string (empty quotation marks).

Return Values

This function returns a string representing the return value of the function executed when the **Execute** button is clicked and an empty string is returned when the **Cancel** button is clicked.

Availability

This function is always available.

create_input_dialog

Customization • Custom User Interface

creates a dialog box with an edit box.

create_input_dialog (*message* **);**

message	Any expression. This expression will appear in the dialog box as a single line.

Return Values

This function returns a string. If no string is found or if the Cancel button is pressed within the dialog box, then the function returns NULL.

Availability

This function is always available.

create_list_dialog

Customization • Custom User Interface

creates a dialog box with a list of items.

create_list_dialog (*title*, *message*, *item_list* **);**

title	The expression that appears in the banner of the dialog box.
message	The message for the user.
item_list	The items that make up the list, separated by commas.

Return Values

This function returns a string. If no string is found or if the Cancel button is pressed within the dialog box, then this function returns NULL.

Availability

This function is always available.

create_password_dialog

Customization • Custom User Interface

creates a password dialog box.

create_password_dialog (*login*, *password*, *login_out*, *password_out*
[, *encrypt_password* **]);**

login	The label of the first edit box, used for user-name input. If you specify an empty string (empty quotation marks), the default label "Login" is displayed.
password	The label of the second edit box, used for password input. If you specify an empty string (empty quotation marks), the default label "Password" is displayed. When the user enters input into this edit box, the characters do not appear on the screen, but are represented by asterisks.
login_out	The name of the parameter to which the contents of the first edit box (login) are passed. Use this parameter to verify the contents of the login edit box.
password_out	The name of the parameter to which the contents of the second edit box (password) are passed. Use this parameter to verify the contents of the password edit box.
encrypt_password	A Boolean parameter which allows the output edit field value to be encrypted. If this parameter is left blank, the default value is FALSE.

Return Values

This function returns the number “1” if the **OK** button is pressed and “0” if the **Cancel** button is pressed.

Availability

This function is always available.

datawindow_get_info

Context Sensitive • PowerBuilder

retrieves the value of a DataWindow object property.

datawindow_get_info (*DataWindow_object*, *property*, *out_value* **);**

DataWindow_object	The logical name of the DataWindow object.
property	The full property description (similar to the formats in the PowerBuilder Describe function, e.g. obj.property...).
out_value	The output variable that stores the value of the specified property (maximum size 2,000 characters).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118 and "Return Values for PowerBuilder and Table Functions," on page 123.

Availability

This function is available whenever the PowerBuilder add-in is loaded.

datawindow_text_click

Context Sensitive • PowerBuilder

clicks a DataWindow text object.

datawindow_text_click (*DataWindow_object*, *DataWindow_text_object* **);**

DataWindow_object	The logical name of the DataWindow object.
DataWindow_text_object	The text property of the DataWindow object (and NOT the internal PowerBuilder name).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118 and "Return Values for PowerBuilder and Table Functions," on page 123.

Availability

This function is available whenever the PowerBuilder add-in is loaded.

datawindow_text_dbl_click

Context Sensitive • PowerBuilder

double-clicks a DataWindow text object.

datawindow_text_dbl_click (*DataWindow_object*, *DataWindow_text_object* **);**

DataWindow_object	The logical name of the DataWindow object.
DataWindow_text_object	The text property of the DataWindow object (and NOT the internal PowerBuilder name).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118 and "Return Values for PowerBuilder and Table Functions," on page 123.

Availability

This function is available whenever the PowerBuilder add-in is loaded.

date_age_string

Context Sensitive • Date Operations

(formerly **Y2K_age_string**)

ages a date string and returns the aged date.

date_age_string (*date*, *years*, *month*, *days*, *new_date* **);**

date	The date to age.
years	The number of years to age the date.
month	The number of months to age the date.
days	The number of days to age the date.
new_date	The new date after the date string is aged the specified number of years, months, and days.

Return Values

This function returns 0 if it succeeds; -1 if it fails.

Availability

This function is always available.

---

date_align_day

Context Sensitive • Date Operations

(formerly **Y2K_align_day**)

ages dates to a specified day of the week or type of day.

date_align_day (*align_mode*, *day_in_week* **);**

align_mode You can select one of the following modes:

Mode	Description
NO_CHANGE	No change is made to the aged dates.
BUSINESSDAY_BACKWARD	Ages dates to the closest business day before the actual aged date. For example, if the aged date falls on Saturday, WinRunner changes the date so that it falls on Friday.
BUSINESSDAY_FORWARD	Ages dates to the closest business day after the actual aged date. For example, if the aged date falls on a Saturday, WinRunner changes the date so that it falls on a Monday.
DAYOFWEEK_BACKWARD	Ages dates to the closet week day before the actual aged date. For example, if the aged date falls on a Sunday, WinRunner changes the date so that it falls on a Friday.
DAYOFWEEK_FORWARD	Ages dates to the closest week day after the actual aged date. For example, if the aged date falls on a Sunday, WinRunner changes the date so that it falls on a Monday.

Mode	Description
SAMEDAY_BACKWARD	Ages dates to the same day of the week, occurring before the actual aged date. For example, if the original date falls on a Thursday, and the aged date falls on a Friday, WinRunner changes the date so that it falls on the Thursday before the Friday.
SAMEDAY_FORWARD	Ages dates to the same day of the week, occurring after the actual aged date. For example, if the original date falls on a Thursday, and the aged date falls on a Friday, WinRunner changes the date so that it falls on the Thursday after the Friday.

day_in_week A day of the week (Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, or Sunday.) This parameter is only necessary when the DAYSOFWEEK_BACKWARD or DAYSOFWEEK_FORWARD option is specified for *align_mode*.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

date_calc_days_in_field

Context Sensitive • Date Operations

(formerly **Y2K_calc_days_in_field**)

calculates the number of days between two date fields.

date_calc_days_in_field (*field_name*$_1$, *field_name*$_2$ **);**

field_name$_1$ The name of the 1st date field.

field_name$_2$ The name of the 2nd date field.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

date_calc_days_in_string

Context Sensitive • Date Operations

(formerly **Y2K_calc_days_in_string**)

calculates the number of days between two numeric strings.

date_calc_days_in_string (*string*$_1$, *string*$_2$ **);**

string$_1$	The name of the 1st string.
string$_2$	The name of the 2nd string.

Return Values

This function returns 0 if it succeeds; -1 if it fails.

Availability

This function is always available.

date_change_field_aging

Context Sensitive • Date Operations

(formerly **Y2K_change_field_aging**)

overrides the aging on a specified date object.

date_change_field_aging (*field_name*, *aging_type*, *days*, *months*, *years* **);**

field_name	The name of the date object.
aging_type	The type of aging to apply to the date object: INCREMENTAL: Ages the date a specified number of days, months, and years. STATIC: Ages the date to a specific date, for example, "9, 2, 2005" (February 9, 2005). Note that the year must be in YYYY format. DEFAULT_AGING: Ages the date using the default aging applied to the entire test, and ignores the days, months, and years parameters.
days	The number of days to increment the test script.
months	The number of months to age the test script.
years	The number of years to age the test script.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

date_change_original_new_formats Context Sensitive • Date Operations

(formerly **Y2K_change_original_new_formats**)

overrides the automatic date format for an object.

date_change_original_new_formats (*object_name*, *original_format*, *new_format*
[, TRUE|FALSE **]);**

object_name	The name of the object.
original_format	The original date format used to identify the object.
new_format	The new date format used to identify the object.
TRUE|FALSE	TRUE tells WinRunner to use the original date format. FALSE (default) tells WinRunner to use the new date format. This parameter is optional.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

date_check

Context Sensitive • Terminal Emulator

(formerly **Y2K_check_date**)

checks all dates in the current screen of a terminal emulator application.

date_check (*filename* **[,** *start_column*, *start_row*, *end_column*, *end_row* **]);**

filename	The file containing the expected results of the date checkpoint.
start_column/row	The column/row at which the captured date begins.
end_column/row	The column/row at which the captured date ends.

Return Values

This function return 0 if it succeeds or 1 if it fails.

Availability

This function is supported only for WinRunner7.01 and higher with Terminal Emulator Add-in support.

date_disable_format

Context Sensitive • Date Operations

(formerly **Y2K_disable_format**)

disables a date format.

date_disable_format (*format* **);**

format	The name of a date format or "ALL" to choose all formats.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

date_enable_format

Context Sensitive • Date Operations

(formerly **Y2K_enable_format**)

enables a date format.

date_enable_format (*format* **);**

format	The name of a date format.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

date_field_to_Julian

Context Sensitive • Date Operations

(formerly **Y2K_field_to_Julian**)

translates a date field to a Julian number.

date_field_to_Julian (*date_field* **);**

date_field	The name of the date field.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

date_is_field

Context Sensitive • Date Operations

(formerly **Y2K_is_date_field**)

determines whether a field contains a valid date.

date_is_field (*field_name*, *min_year*, *max_year* **);**

field_name	The name of the field containing the date.
min_year	Determines the minimum year allowed.
max_year	Determines the maximum year allowed.

Return Values

This function returns 1 if the field contains a valid date and 0 if the field does not contain a valid date.

Availability

This function is always available.

date_is_leap_year

Context Sensitive • Date Operations

(formerly **Y2K_is_leap_year**)

determines whether a year is a leap year.

date_is_leap_year (*year* **);**

year	A year, for example "1998".

Return Values

This function returns 1 if a year is a leap year, or 0 if it is not.

Availability

This function is always available.

date_is_string

Context Sensitive • Date Operations

(formerly **Y2K_is_date_string**)

determines whether a string contains a valid date.

date_is_string (*string*, *min_year*, *max_year* **);**

string	The numeric string containing the date.
min_year	Determines the minimum year allowed.
max_year	Determines the maximum year allowed.

Return Values

This function returns 1 if the string contains a valid date and 0 if the string does not contain a valid date.

Availability

This function is always available.

date_leading_zero

Context Sensitive • Date Operations

(formerly **Y2K_leading_zero**)

determines whether to add a zero before single-digit numbers when aging and translating dates.

date_leading_zero (*mode* **);**

mode	One of two modes can be specified: ON or OFF.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

date_month_language

Context Sensitive • Date Operations

(formerly **Y2K_month_language**)

sets the language used for month names.

date_month_language (*language* **);**

language	The language used for month names.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

date_set_aging

Context Sensitive • Date Operations

(formerly **Y2K_set_aging**)

sets aging in the test script.

date_set_aging (*format*, *type*, *days*, *months*, *years* **);**

format	The date format to which aging is applied (default is ALL).
aging_type	The type of aging to apply to the test script: INCREMENTAL: Ages the test script a specified number of days, months, and years. STATIC: Ages the test script to a specific date, for example, "9, 2, 2005" (February 9, 2005). DEFAULT_AGING: Ages the test script using the default aging applied to the entire test, and ignores the days, months, and years parameters.
days	The number of days to increment the test script.
months	The number of months to age the test script.
years	The number of years to age the test script.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

date_set_attr

Context Sensitive • Terminal Emulator

(formerly **Y2K_set_attr**)

sets the record configuration mode for a field.

date_set_attr (*index* **);**

index	The record configuration mode (INDEX or ATTACHED TEXT).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported only for WinRunner 7.01 and higher with Terminal Emulator Add-in support.

date_set_auto_date_verify

Context Sensitive • Terminal Emulator

(formerly **Y2K_set_auto_date_verify**)

automatically generates a date checkpoint for the current screen in a terminal emulator application.

date_set_auto_date_verify (ON|OFF **);**

ON|OFF	If ON, WinRunner automatically generates a date checkpoint for the current screen.

The **date_set_auto_date_verify** function automatically captures all date information in a screen of a terminal emulator window and inserts a date checkpoint in the test script.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported only for WinRunner 7.01 and higher with Terminal Emulator Add-in support.

---

date_set_capture_mode

Context Sensitive • Terminal Emulator

(formerly **Y2K_set_capture_mode**)

determines how WinRunner captures dates in terminal emulator applications.

date_set_capture_mode (*mode* **);**

mode	The date capture mode. Use one of the following modes: FIELD_METHOD: Captures dates in the context of the screens and fields in your terminal emulator application (Context Sensitive). This is the default mode. POSITION_METHOD: Identifies and captures dates according to the unformulated view of the screen.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported only for WinRunner 7.01 and higher with Terminal Emulator Add-in support.

date_set_run_mode

Context Sensitive • Date Operations

(formerly **Y2K_set_replay_mode**)

sets the Date Operations run mode in the test script.

date_set_run_mode (*mode* **);**

mode	The Date Operations run mode. Use one of the following modes: NO_CHANGE: No change is made to objects containing dates during the test run. AGE: Performs aging during the test run. TRANSLATE: Translates dates to the new date format. TRANSLATE_AND_AGE: Translates date formats and performs aging.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

date_set_system_date

Context Sensitive • Date Operations

(formerly **Y2K_set_system_date**)

sets the system date and time.

date_set_system_date (*year*, *month*, *day* **[** , *hour*, *minute*, *second* **]);**

year	The year, for example, "2005".
month	The month, for example, "8" (August).
day	The day, for example, "15".
hour	The hour, for example, "2". (optional)
minute	The minute, for example, "15". (optional)
second	The second, for example, "30". (optional)

Return Values

This function always returns 0.

date_set_year_limits

Context Sensitive • Date Operations

(formerly **Y2K_set_year_limits**)

sets the minimum and maximum years valid for date verification and aging.

date_set_year_limits (*min_year, max_year* **);**

min_year	The minimum year to be used during date verification and aging.
max_year	The maximum year to be used during date verification and aging.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

date_set_year_threshold

Context Sensitive • Date Operations

(formerly **Y2K_set_year_threshold**)

sets the year threshold.

date_set_year_threshold (*number* **);**

number	The threshold number.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

date_string_to_Julian

Context Sensitive • Date Operations

(formerly **Y2K_string_to_Julian**)

translates a string to a Julian number.

date_string_to_Julian (*string* **);**

string	The numeric date string.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

date_type_mode

Context Sensitive • Date Operations

(formerly **Y2K_type_mode**)

disables overriding of automatic date recognition for all date objects in a GUI application.

date_type_mode (*mode* **);**

mode	The type mode. Use one of the following modes: DISABLE_OVERRIDE: Disables all overrides on date objects. ENABLE_OVERRIDE: Enables all overrides on date objects.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

db_check

Context Sensitive • Database

compares current database data to expected database data.

db_check (*checklist*, *expected_results_file* **[,** *max_rows* **[,** *paramater_array* **]]);**

checklist	The name of the checklist specifying the checks to perform.
expected_results_file	The name of the file storing the expected database data.
max_rows	The maximum number of rows retrieved in a database. If no maximum is specified, then by default the number of rows is not limited. If you change this parameter in a **db_check** statement recorded in your test script, you must run the test in Update mode before you run it in Verify mode.

paramater_array	The array of parameters for the SQL statement. For information on working with this advanced feature, refer to the "Checking Databases" chapter in the *WinRunner User's Guide*.

Return Values

This function returns 1 for a successful bitmap capture or comparison. Otherwise, this function returns 0. For more information, see "General Return Values," on page 118 and "Return Values for Database Functions," on page 122.

Availability

This function is always available.

---

db_connect

Context Sensitive • Database

creates a new database session and establishes a connection to an ODBC database.

db_connect (*session_name*, *connection_string* **);**

session_name	The logical name of the database session.
connection_string	The connection parameters to the ODBC database.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118 and "Return Values for Database Functions," on page 122.

Availability

This function is always available.

db_disconnect

Context Sensitive • Database

disconnects from the database and ends the database session.

db_disconnect (*session_name* **);**

session_name	The logical name of the database session.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118 and "Return Values for Database Functions," on page 122.

Availability

This function is always available.

db_dj_convert

Context Sensitive • Database

runs a Data Junction export file (*****.*djs* file).

db_dj_convert (*djs_file* **[,** *output_file* **[,** *headers* **[,** *record_limit* **]]]);**

djs_file	The Data Junction export file.
output_file	An optional parameter to override the name of the target file.
headers	An optional Boolean parameter that will include or exclude the column headers from the Data Junction export file.
record_limit	The maximum number of records that will be converted.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118 and "Return Values for Database Functions," on page 122.

Availability

This function is only available for users working with Data Junction.

db_execute_query

Context Sensitive • Database

executes the query based on the SQL statement and creates a record set.

db_execute_query (*session_name*, *SQL*, *record_number* **);**

session_name	The logical name of the database session.
SQL	The SQL statement.
record_number	An out parameter returning the number of records in the result query.

For information on this advanced feature, refer to the "Checking Databases" chapter in the *WinRunner User's Guide*.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118 and "Return Values for Database Functions," on page 122.

Availability

This function is always available.

db_get_field_value

Context Sensitive • Database

returns the value of a single field in the database.

db_get_field_value (*session_name*, *row_index*, *column* **);**

session_name	The logical name of the database session.
row_index	The numeric index of the row. (The first row is always numbered "#0".)
column	The name of the field in the column or the numeric index of the column within the database. (The first column is always numbered "#0".)

Return Values

In case of an error, an empty string will be returned. For more information, see “General Return Values,” on page 118 and “Return Values for Database Functions,” on page 122.

Availability

This function is always available.

---

db_get_headers

Context Sensitive • Database

returns the number of column headers in a query and the content of the column headers, concatenated and delimited by tabs.

db_get_headers (*session_name*, *header_count*, *header_content* **);**

session_name	The logical name of the database session.
header_count	The number of column headers in the query.
header_content	The column headers concatenated and delimited by tabs. Note that if this string exceeds 1024 characters, it is truncated.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118 and “Return Values for Database Functions,” on page 122.

Availability

This function is always available.

---

db_get_last_error

Context Sensitive • Database

returns the last error message of the last ODBC or Data Junction operation.

db_get_last_error (*session_name*, *error* **);**

session_name	The logical name of the database session.
error	The error message.

Note: When working with Data Junction, the *session_name* parameter is ignored.

Return Values

If there is no error message, an empty string will be returned.

Availability

This function is always available.

db_get_row

Context Sensitive • Database

returns the content of the row, concatenated and delimited by tabs.

db_get_row (*session_name*, *row_index*, *row_content* **);**

session_name	The logical name of the database session.
row_index	The numeric index of the row. (The first row is always numbered “0”.)
row_content	The row content as a concatenation of the fields values, delimited by tabs.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118 and “Return Values for Database Functions,” on page 122.

Availability

This function is always available.

db_record_check

Context Sensitive • Database

compares information that appears in the application under test during a test run with the current values in the corresponding record(s) in your database. You insert **db_record_check** statements by using the Runtime Record Verification wizard. For more information, refer to the *WinRunner User's Guide*.

db_record_check (*ChecklistFileName , SuccessConditions, RecordNumber* **);**

ChecklistFileName	A file created by WinRunner and saved in the test's checklist folder. The file contains information about the data to be captured during the test run and its corresponding field in the database. The file is created based on the information entered in the Runtime Record Verification wizard.
SuccessConditions	Contains one of the following values: **DVR_ONE_OR_MORE_MATCH** - The checkpoint passes if one or more matching database records are found. **DVR_ONE_MATCH** - The checkpoint passes if exactly one matching database record is found. **DVR_NO_MATCH** - The checkpoint passes if no matching database records are found.
RecordNumber	An out parameter returning the number of records in the database.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118 and "Return Values for Database Functions," on page 122.

Availability

This function is always available.

db_write_records

Context Sensitive • Database

writes the record set into a text file delimited by tabs.

db_write_records (*session_name*, *output_file* **[,** *headers* **[,** *record_limit* **]]);**

session_name	The logical name of the database session.
output_file	The name of the text file in which the record set is written.
headers	An optional Boolean parameter that will include or exclude the column headers from the record set written into the text file.
record_limit	The maximum number of records in the record set to be written into the text file. A value of NO_LIMIT (the default value) indicates there is no maximum limit to the number of records in the record set.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118 and “Return Values for Database Functions,” on page 122.

Availability

This function is always available.

dbl_click

Analog • Input Device

double-clicks a mouse button.

dbl_click (*mouse_button* **[,** *time* **]);**

mouse_button	The mouse button to activate. The names ("Left," "Right," "Middle") are defined by the XR_INP_MKEYS system parameter in the system configuration file.
time	The interval that elapses before the click is entered, in seconds. The default, if no *time* is specified, is 0.

Return Values

This function always returns 0.

Availability

This function is always available.

---

ddt_close

Context Sensitive • Data-Driven Test

closes a data table file.

ddt_close (*data_table_name* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. The first row in the file contains the names of the parameters.

Note: ddt_close does NOT save changes to the data table. If you make any changes to the data table, you must use the **ddt_save** function to save your changes before using **ddt_close** to close the table.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

ddt_close_all_tables

Context Sensitive • Data-Driven Test

closes all open tables in all open tests.

ddt_close_all_tables();

Note: This close function includes any tables that are open in the table editor, tables that were opened using the **ddt_open** or **ddt_show** functions or using the DataDriven Tests Wizard.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

ddt_export

Context Sensitive • Data-Driven Test

exports the information of one data table file into a different data table file.

ddt_export (*data_table_filename*$_1$**,** *data_table_filename*$_2$ **);**

data_table_filename$_1$	The source data table filename.
data_table_filename$_2$	The destination data table filename.

Note: You must use a **ddt_open** statement to open the source data table before you can use any other **ddt_** functions.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

ddt_get_current_row

Context Sensitive • Data-Driven Test

retrieves the active row of a data table.

ddt_get_current_row (*data_table_name*, *out_row* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. The first row in the file contains the names of the parameters. This row is labeled row 0.
out_row	The output variable that stores the active row in the data table.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

ddt_get_parameters

Context Sensitive • Data-Driven Test

returns a list of all parameters in a data table.

ddt_get_parameters (*table*, *params_list*, *params_num* **);**

table	The pathname of the data table.
params_list	This out parameter returns the list of all parameters in the data table, separated by tabs.

params_num	This out parameter returns the number of parameters in params_list.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

ddt_get_row_count

Context Sensitive • Data-Driven Test

retrieves the number of rows in a data table.

ddt_get_row_count (*data_table_name*, *out_rows_count* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. The first row in the file contains the names of the parameters.
out_rows_count	The output variable that stores the total number of rows in the data table.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

ddt_is_parameter

Context Sensitive • Data-Driven Test

returns whether a parameter in a data table is valid.

ddt_is_parameter (*data_table_name*, *parameter* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table.
parameter	The parameter name to check in the data table.

Return Values

This functions returns TRUE when rc=0. The function returns FALSE in all other cases.

Availability

This function is always available.

ddt_next_row

Context Sensitive • Data-Driven Test

changes the active row in a data table to the next row.

ddt_next_row (*data_table_name* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. The first row in the file contains the names of the parameters.

Return Values

If the active row is the last row in a data table, then the E_OUT_OF_RANGE value is returned.

Availability

This function is always available.

ddt_open

Context Sensitive • Data-Driven Test

creates or opens a data table file so that WinRunner can access it.

ddt_open (*data_table_name* **[,** *mode* **]);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. The first row in the file contains the names of the parameters. This row is labeled row 0.
mode	The mode for opening the data table: DDT_MODE_READ (read-only) or DDT_MODE_READWRITE (read or write). When the mode is not specified, the default mode is DDT_MODE_READ.

Note: If you make any changes to the data table, you must use the **ddt_save** function to save your changes before using **ddt_close** to close the table.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

ddt_report_row

Context Sensitive • Data-Driven Test

reports the active row in a data table to the test results.

ddt_report_row (*data_table_name* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. The first row in the file contains the names of the parameters. This row is labeled row 0.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

ddt_save

Context Sensitive • Data-Driven Test

saves the information in a data table.

ddt_save (*data_table_name* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

ddt_set_row

Context Sensitive • Data-Driven Test

sets the active row in a data table.

ddt_set_row (*data_table_name*, *row* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. The first row in the file contains the names of the parameters. This row is labeled row 0.
row	The new active row in the data table.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

ddt_set_val

Context Sensitive • Data-Driven Test

sets a value in the current row of the data table.

ddt_set_val (*data_table_name*, *parameter*, *value* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. This row is labeled row 0.
parameter	The name of the column into which the value will be inserted.
value	The value to be written into the table.

Notes:

You can only use this function if the data table was opened in DDT_MODE_READWRITE (read or write mode).

To save the new or modified contents of the table, add a **ddt_save** statement after the **ddt_set_val** statement. At the end of your test, use a **ddt_close** statement to close the table.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

ddt_set_val_by_row

Context Sensitive • Data-Driven Test

sets a value in a specified row of the data table.

ddt_set_val_by_row (*data_table_name*, *row*, *parameter*, *value* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. The first row in the file contains the names of the parameters. This row is labeled row 0.
row	The row number in the table.
parameter	The name of the column into which the value will be inserted.
value	The value to be written into the table.

Notes:

You can only use this function if the data table was opened in DDT_MODE_READWRITE (read or write mode).

To save the new or modified contents of the table, add a **ddt_save** statement after the **ddt_set_val** statement. At the end of your test, use a **ddt_close** statement to close the table.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

ddt_show

Context Sensitive • Data-Driven Test

shows or hides the table editor of a specified data table.

ddt_show (*data_table_name*, *show_flag* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table.
show_flag	The value indicating whether the editor is to be shown. The *show_flag* value is 1 if the table editor is to be shown and is 0 if the table editor is to be hidden.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

ddt_update_from_db

Context Sensitive • Data-Driven Test

imports data from a database into a data table.

ddt_update_from_db (*data_table_name*, *file, out_row_count* **[** , *max_rows* **]);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table.
file	Either an ***.sql* file containing an ODBC query or a ***.djs* file containing a conversion defined by Data Junction.
out_row_count	An out parameter containing the number of rows retrieved from the data table.
max_rows	An in parameter specifying the maximum number of rows to be retrieved from a database. If no maximum is specified, then by default the number of rows is not limited.

Note: You must use a **ddt_open** statement to open the data table in READWRITE mode before you can use this function.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

ddt_val

Context Sensitive • Data-Driven Test

returns the value of a parameter in the active row in a data table.

ddt_val (*data_table_name*, *parameter* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. The first row in the file contains the names of the parameters.
parameter	The name of the parameter in the data table.

Return Values

This functions returns the value of a parameter in the active row in a data table.

In the case of an error, this function returns an empty string.

Availability

This function is always available.

ddt_val_by_row

Context Sensitive • Data-Driven Test

returns the value of a parameter in the specified row in a data table.

ddt_val_by_row (*data_table_name*, *row_number*, *parameter* **);**

data_table_name	The name of the data table. The name may be the table variable name, the Microsoft Excel file or a tabbed text file name, or the full path and file name of the table. The first row in the file contains the names of the parameters. This row is labeled row 0.
row_number	The number of the row in the data table.
parameter	The name of the parameter in the data table.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

declare_rendezvous

Standard • Load Testing

declares a rendezvous.

declare_rendezvous (*rendezvous_name* **);**

rendezvous_name	The name of the rendezvous. This must be a string constant and not a variable or an expression. The *rendezvous_name* can be a maximum of 128 characters. It cannot contain any spaces.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for LoadRunner GUI Vusers only.

declare_transaction

Standard • Load Testing

declares a transaction.

declare_transaction (*transaction_name* **);**

transaction_name	The name of the transaction. This must be a string constant and not a variable or an expression. The *transaction_name* can be a maximum of 128 characters. It cannot contain any spaces. The first character cannot be number.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for LoadRunner GUI Vusers only.

---

define_object_exception

Standard • Exception Handling

defines an object exception.

define_object_exception (*exception_name*, *handler*, *window*, *object*, *property* **[,** *value* **]);**

exception_name	The name of the exception.
handler	The name of the handler function.
window	The logical name of the window.
object	The logical name of the object.
property	An object property.
value	The value of the object property to detect.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

define_popup_exception

Standard • Exception Handling

defines a popup exception.

define_popup_exception (*exception_name*, *handler*, *window* **);**

exception_name	The name of the exception.
handler	The name of the handler function. The handler can be a built-in handler or a user-defined handler. For a list of built-in handlers, see below.
window	The name of the popup window.

Built-In Handler Function	Description
win_press_cancel	Clicks the Cancel button in the window
win_press_ok	Clicks the OK button in the window
win_press_return	Presses the Return key (the equivalent of clicking the default button in the window

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

define_tsl_exception

Standard • Exception Handling

defines a TSL exception.

define_tsl_exception (*exception_name*, *handler*, *return_code* **[,** *function* **]);**

exception_name	The name of the exception.
handler	The name of the handler function.
return_code	The return code to detect. To detect any return code with a value less than zero, you can set E_ANY_ERROR as the argument.
function	The TSL function to monitor.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

delete

Standard • Array

removes an element from an array.

delete *array* **[** *subscript* **];**

array	The array from which the element is deleted.
subscript	An expression that specifies the subscript of the array element to delete.

Return Values

This function always returns an empty string.

Availability

This function is always available.

delete_record_attr

Customization • Custom Record

removes a custom property that was registered using **add_record_attr**.

delete_record_attr (*attr_name* **[,** *dll_name*, *query_func_name*, *verify_func_nam* **]);**

attr_name	The name of the custom property to remove. Note that you cannot remove any standard WinRunner properties.
dll_name	The full path of the DLL (Dynamic Link Library) in which the query and verify functions are defined.
query_func_name	The name of the user-defined query function that was called by the **add_record_attr** statement which registered the custom property.
verify_func_name	The name of the verify function that was called by the **add_record_attr** statement which registered the custom property (either a WinRunner standard property verification function or a custom property verification function included in the DLL).

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

dlph_edit_set

Context Sensitive • Delphi

replaces the entire contents of a Delphi edit object.

dlph_edit_set (*edit*, *text* **);**

edit	The logical name of the Delphi edit object.
text	The new contents of the Delphi edit object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available only for WinRunner with Delphi support.

dlph_list_select_item

Context Sensitive • Delphi

selects a Delphi list item.

dlph_list_select_item (*list*, *item* **);**

list	The logical name of the Delphi list.
item	The item to select in the Delphi list.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available only for WinRunner with Delphi support.

dlph_obj_get_info

Context Sensitive • Delphi

retrieves the value of a Delphi object.

dlph_obj_get_info (*name*, *property*, *out_value* **);**

name	The logical name of the Delphi object.
property	Any property associated with the Delphi object.
out_value	The value of the property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available only for WinRunner with Delphi support.

dlph_obj_set_info

Context Sensitive • Delphi

sets the value of a Delphi object.

dlph_obj_set_info (*name*, *property*, *in_value* **);**

name	The logical name of the Delphi object.
property	Any property associated with the Delphi object.
in_value	The new value of the Delphi property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available only for WinRunner with Delphi support.

dlph_panel_button_press

Context Sensitive • Delphi

clicks a button within a Delphi panel.

dlph_panel_button_press (*panel*, *button, x, y* **);**

panel	The object.
button	The Delphi name.
x, y	The location that is pressed on the button, expressed as x and y (pixel) coordinates, relative to the top left corner of the button.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available only for WinRunner with Delphi support.

dos_system

Standard • Operating System

executes a DOS system command from within a WinRunner test script.

dos_system (*expression* **);**

expression	A string expression specifying the system command to be executed.

Note: When using MS-DOS Prompt (Windows 95/98), or command.com (Windows NT), then the expression in dos_system is limited to 127 characters. When using Command Prompt (Windows NT), the expression can hold more characters.

If the limitation is problematic, try to use shorter commands and split long commands into shorter ones. For example, if you want to copy file1 to file2 and both files have very long names, instead of using dos_system("copy file1 file2") use a third file with a shorter name (e.g. tmpfile) in the following commands:

```
    dos_system("copy file1 tmpfile") ;
dos_system("copy tmpfile file2") ;
```

Return Values

The return value of the function is the return value of the DOS system command that was executed.

Availability

This function is available for WinRunner and LoadRunner GUI Vusers running on PC platforms only. To execute Windows executables, use **invoke_application**. To execute UNIX system commands, use **system**. To execute OS2 commands, use **os2_system**.

edit_activate

Context Sensitive • Oracle

double-clicks an object in an Oracle or Java application.

edit_activate (*object* **);**

object	The logical name of the object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner with Oracle or Java Add-in support.

edit_check_info

Context Sensitive • Edit Object

checks the value of an edit object property.

edit_check_info (*edit*, *property*, *property_value* **);**

edit	The logical name of the edit object.
property	The property to check.
property_value	The property value.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

edit_check_selection

Context Sensitive • Edit Object

checks that a string is selected.

edit_check_selection (*edit*, *selected_string* **);**

edit	The logical name of the edit object.
selected_string	The selected string. The string is limited to 256 characters. It cannot be evaluated automatically when used with the Function Generator.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_check_text

Context Sensitive • Edit Object

checks the contents of an edit object.

edit_check_text (*edit*, *text*, *case_sensitive* **);**

edit	The logical name of the edit object.
text	The contents of the edit object (up to 256 characters).
case_sensitive	Indicates whether the comparison is case sensitive. This value is either TRUE or FALSE.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_delete

Context Sensitive • Edit Object

deletes the contents of an edit object.

edit_delete (*edit*, *start_column*, *end_column* **);**

edit	The logical name of the edit object.
start_column	The column at which the text starts.
end_column	The column at which the text ends. Note that if this is greater than the last column of the first line, then part of the following line will also be deleted.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

edit_delete_block

Context Sensitive • Edit Object

deletes a text block from an edit object.

edit_delete_block (*edit*, *start_row*, *start_column*, *end_row*, *end_column* **);**

edit	The logical name of the edit object.
start_row	The row at which the text block starts.
start_column	The column at which the text block starts.
end_row	The row at which the text block ends.
end_column	The column at which the text block ends.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

edit_get_block

Context Sensitive • Edit Object

returns block of text in an edit object.

edit_get_block (*edit*, *start_row*, *start_column*, *end_row*, *end_column*, *out_string* **);**

edit	The logical name of the edit object.
start_row	The row at which the text block starts.
start_column	The column at which the text block starts.
end_row	The row at which the text block ends.
end_column	The column at which the text block ends.
out_string	The output variable that stores the text string.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_get_info

Context Sensitive • Edit Object

returns the value of an edit object property.

edit_get_info (*edit*, *property*, *out_value* **);**

edit	The logical name of the edit object.
property	Any of the properties listed in the *User's Guide*.
out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

edit_get_row_length

Context Sensitive • Edit Object

returns the length of a row in an edit object.

edit_get_row_length (*edit*, *row*, *out_length* **);**

edit	The logical name of the edit object.
row	The row to measure.
out_length	The output variable that stores the number of characters in the row.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

edit_get_rows_count

Context Sensitive • Edit Object

returns the number of rows written in an edit object.

edit_get_rows_count (*edit*, *out_number* **);**

edit	The logical name of the edit object.
out_number	The output variable that stores the number of rows written in the edit object.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_get_selection

Context Sensitive • Edit Object

returns the selected string in an edit object.

edit_get_selection (*edit*, *out_string* **);**

edit	The logical name of the edit object.
out_string	The output variable that stores the selected string. The string is limited to 256 characters. It cannot be evaluated automatically when used with the Function Generator.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_get_selection_pos

Context Sensitive• Edit Object

returns the position at which the selected block starts and ends.

edit_get_selection_pos (*edit*, *out_start_row*, *out_start_column*, *out_end_row*, *out_end_column* **);**

edit	The logical name of the edit object.
out_start_row	The output variable which stores the row at which the selected block starts.
out_start_column	The output variable which stores the column at which the selected block starts.
out_end_row	The output variable which stores the row at which the selected block ends.
out_end_column	The output variable which stores the column at which the selected block ends.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_get_text

Context Sensitive • Edit Object

returns the text in an edit object.

edit_get_text (*edit*, *out_string* **);**

edit	The logical name of the edit object.
out_string	The output variable that stores the string found in the edit object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

edit_insert

Context Sensitive • Edit Object

inserts text in the first line of an edit object.

edit_insert (*edit*, *text*, *column* **);**

edit	The logical name of the edit object.
text	The text to be inserted in the edit object.
column	The column at which the insertion is made.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

edit_insert_block

Context Sensitive • Edit Object

inserts text in a multi-line edit object.

edit_insert_block (*edit*, *text*, *row*, *column* **);**

edit	The logical name of the edit object.
text	The text to be inserted in the edit object.
row	The row at which the insertion is made.
column	The column at which the insertion is made.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_replace

Context Sensitive • Edit Object

replaces the contents of an edit object.

edit_replace (*edit*, *text*, *start_column*, *end_column* **);**

edit	The logical name of the edit object.
text	The new contents of the edit object.
start_column	The column at which the text block starts.
end_column	The column at which the text block ends.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_replace_block

Context Sensitive • Edit Object

replaces a block of text in an edit object.

edit_replace_block (*edit*, *text*, *start_row*, *start_column*, *end_row*, *end_column* **);**

edit	The logical name of the edit object.
text	The new contents of the edit object.
start_row	The row at which the text block starts.
start_column	The column at which the text block starts.
end_row	The row at which the text block ends.
end_column	The column at which the text block ends.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

edit_set

Context Sensitive • Edit Object

replaces the entire contents of an edit object.

edit_set (*edit*, *text* **);**

edit	The logical name of the edit object.
text	The new contents of the edit object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

edit_set_focus

Context Sensitive • Edit Object

focuses on an object in an Oracle application.

edit_set_focus (*object* **);**

object	The logical name of the object.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_set_insert_pos

Context Sensitive • Edit Object

places the cursor at a specified point in an edit object.

edit_set_insert_pos (*edit*, *row*, *column* **);**

edit	The logical name of the edit object.
row	The row position at which the insertion point is placed.
column	The column position at which the insertion point is placed.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_set_selection

Context Sensitive • Edit Object

selects text in an edit object.

edit_set_selection (*edit*, *start_row*, *start_column*, *end_row*, *end_column* **);**

edit	The logical name of the edit object.
start_row	The row at which the selection starts.
start_column	The column at which the selection starts.
end_row	The row at which the selection ends.
end_column	The column at which the selection ends.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_type

Context Sensitive • Edit Object

types a string in an edit object.

edit_type (*edit*, *text* **);**

edit	The logical name of the edit object.
text	The string to type into the edit object.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

edit_wait_info

Context Sensitive • Edit Object

waits for the value of an edit object property.

edit_wait_info (*edit*, *property*, *value*, *time* **);**

edit	The logical name of the edit object.
property	Any of the properties listed in the *WinRunner User's Guide*.
value	The property value.
time	The maximum amount of time the test will wait before resuming execution.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

end_transaction

Standard • Load Testing

marks the end of a transaction for performance analysis.

end_transaction (*transaction* **[,** *status* **]);**

transaction	A string, with no spaces, naming the transaction.
status	The status of the transaction: pass (0), or fail (any non-zero value). If no value is specified, the default value is pass.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for LoadRunner GUI Vusers only.

error_message

Standard • Load Testing

sends an error message to the controller.

error_message (*message* **);**

message	Any string.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for LoadRunner GUI Vusers only.

EURO_check_currency

Context Sensitive • EURO

captures and compares the currencies in a window.

EURO_check_currency (*file_name*, x_1, y_1, x_2, y_2 **);**

file_name	The file containing the expected results of the EURO checkpoint.
x_1, y_1	The position of the upper left corner of the area to be checked.
x_2, y_2	The position of the lower right corner of the area to be checked.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_compare_columns

Context Sensitive • EURO

compares two currency columns (dual display) and returns the number of mismatches.

EURO_compare_columns (*check_name*, *column*$_1$*_field*$_1$, *column*$_1$*_field*$_n$, *column*$_2$*_field*$_1$, *column*$_2$*_field*$_n$ **);**

check_name	The file name that stores the data.
column$_1$*_field*$_1$	The first column first field to be included in the comparison.
column$_1$*_field*$_n$	The first column last field to be included in the comparison.
column$_2$*_field*$_1$	The second column first field to be included in the comparison.
column$_2$*_field*$_n$	The second column last field to be included in the comparison.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_compare_fields

Context Sensitive • EURO

compares two fields while converting.

EURO_compare_fields (*field*$_1$**,** *field*$_2$**,** *currency*$_1$**,** *currency*$_2$**,** *align_mode***,** *align_value* **);**

field$_1$	The name of the first field.
field$_2$	The name of the second field.
currency$_1$	The country whose currency you want to compare to currency_2 One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.
currency$_2$	The country whose currency is compared to currency_1. One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.
align_mode	One of the following modes can be specified: ALIGN_NONE: No currency alignment ALIGN_ROUND: Rounds the converted currency to the nearest multiple specified in align_value. ALIGN_SUFFIX_DOWN: Rounds down the converted currency value to end with the suffix value indicated in align_value. ALIGN_SUFFIX_UP: Rounds up the converted currency value to end with the suffix value indicated in align_value. ALIGN_TRUNC: Rounds the converted currency value down to the nearest unit.
align_value	The value to align the currency.

Return Values

The **EURO_compare_fields** function returns E_OK or E_DIFF.

Availability

This function is available for WinRunner EURO only.

EURO_compare_numbers

Context Sensitive • EURO

compares two numbers while converting.

EURO_compare_numbers (*number*$_1$**,** *number*$_2$**,** *currency*$_1$**,** *currency*$_2$**,** *align_mode***,** *align_value* **);**

number$_1$	The first number to compare.
number$_2$	The second number to compare.
currency$_1$	The country whose currency you want to compare to currency_2 One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.
currency$_2$	The country whose currency is compared to currency_1. One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.
align_mode	One of the following modes can be specified: ALIGN_NONE: No currency alignment ALIGN_ROUND: Rounds the converted currency to the nearest multiple specified in align_value. ALIGN_SUFFIX_DOWN: Rounds down the converted currency value to end with the suffix value indicated in align_value.

ALIGN_SUFFIX_UP: Rounds up the converted currency value to end with the suffix value indicated in align_value.

ALIGN_TRUNC: Rounds the converted currency value down to the nearest unit.

align_value — The value to align the currency.

Return Values

The **EURO_compare_numbers** function returns E_OK or E_DIFF.

Availability

This function is available for WinRunner EURO only.

EURO_convert_currency

Context Sensitive • EURO

returns the converted currency value between two currencies.

EURO_convert_currency (*number*, *original_currency*, *new_currency*, *align_mode*, *align_value* **);**

number — The amount of currency to be converted.

original_currency — The country from whose currency you want to compute its value in the new_currency. One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.

new_currency — The country to whose currency the original_currency is being computed. One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.

align_mode — One of the following modes can be specified:

ALIGN_NONE: No currency alignment

ALIGN_ROUND: Rounds the converted currency to the nearest multiple specified in align_value.

ALIGN_SUFFIX_DOWN: Rounds down the converted currency value to end with the suffix value indicated in align_value.

ALIGN_SUFFIX_UP: Rounds up the converted currency value to end with the suffix value indicated in align_value.

ALIGN_TRUNC: Rounds the converted currency value down to the nearest unit.

align_value The value to align the currency.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_override_field

Context Sensitive • EURO

overrides the original currency in a field to a new currency.

EURO_override_field (*field_name*, *original_currency*, *new_currency*, *align_mode*, *align_value* **);**

field_name The name of the field in which you want to override the currency.

original_currency The country from whose currency you want to override to new_currency. One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.

new_currency The country to whose currency the original_currency is being overridden. One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.

align_mode	One of the following modes can be specified: ALIGN_NONE: No currency alignment ALIGN_ROUND: Rounds the converted currency to the nearest multiple specified in align_value. ALIGN_SUFFIX_DOWN: Rounds down the converted currency value to end with the suffix value indicated in align_value. ALIGN_SUFFIX_UP: Rounds up the converted currency value to end with the suffix value indicated in align_value. ALIGN_TRUNC: Rounds the converted currency value down to the nearest unit.
align_value	The value to align the currency.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_set_auto_currency_verify

Context Sensitive • EURO

activates/deactivates automatic EURO verification.

EURO_set_auto_currency_verify (*mode* **);**

mode	The mode can be set to ON or OFF.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_set_capture_mode

Context Sensitive • EURO

determines how WinRunner EURO captures currency in terminal emulator applications.

EURO_set_capture_mode (*capture_mode* **);**

capture_mode	The currency capture mode. One of the following modes can be specified: FIELD_METHOD: Captures currencies in the context of the screens and fields in your terminal emulator application (Context Sensitive). This is the default mode. POSITION_METHOD: Identifies and captures currencies according to the unformatted view of the screen.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_set_conversion_mode

Context Sensitive • EURO

sets the EURO conversion run mode in the test script.

EURO_set_conversion_mode (*conversion_mode* **);**

conversion_mode	The EURO conversion run mode. One of the following modes can be specified: NO_CHANGE: No change is made to objects containing numeric values during the test run. CONVERT: Performs EURO conversion during the test run.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_set_conversion_rate

Context Sensitive • EURO

sets the conversion rate between the EURO currency and a national currency.

EURO_set_conversion_rate (*currency*, *rate* **);**

currency	The country whose currency rate you want to set. One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.
rate	The conversion rate of the specified country's currency to the EURO.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_set_cross_rate

Context Sensitive • EURO

sets the cross rate method between two currencies.

EURO_set_cross_rate (*currency*$_1$**,** *currency*$_2$**,** *conversion_mode*, *decimal*, *direct_rate* **);**

currency$_1$	The country whose currency you want to compare to *currency*$_2$ One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.
currency$_2$	The country whose currency is compared to *currency_1*. One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.
conversion_mode	The cross rate method of conversion. You can specify one of the following rates: EURO Triangulation (default): indicates that the cross rates conversion from one national currency unit into another is done via the EURO currency, and that the EURO amount is rounded to no less than three decimal places. Direct Cross Rate: indicates that the conversion is not done via triangulation.
decimal	Indicates the number of decimals to which the EURO amount is rounded (default is set to 3).
direct_rate	The direct cross rate to be used for the conversion between the two currencies.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_set_currency_threshold

Context Sensitive • EURO

sets the minimum value of an integer which will be considered a currency.

EURO_set_currency_threshold (*threshold* **);**

threshold	The minimum value.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_set_decimals_precision

Context Sensitive • EURO

sets the number of decimals in the conversion results.

EURO_set_decimals_precision (*decimals* **);**

decimals	Indicates the number of decimals to be displayed in the results (STANDARD, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_set_original_new_currencies

Context Sensitive • EURO

sets the original and new currencies of the application.

EURO_set_original_new_currencies (*original_currency*, *new_currency*, *align_mode*, *align_value* **);**

original_currency	The country whose currency you want to set to *new_currency*. One of the following countries can be specified: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Great Britain, Denmark, Greece, Sweden, and EURO.
new_currency	The country to whose currency you want to convert *original_currency*.
align_mode	One of the following modes can be specified: ALIGN_NONE: No currency alignment ALIGN_ROUND: Rounds the converted currency to the nearest multiple specified in align_value. ALIGN_SUFFIX_DOWN: Rounds down the converted currency value to end with the suffix value indicated in align_value. ALIGN_SUFFIX_UP: Rounds up the converted currency value to end with the suffix value indicated in align_value. ALIGN_TRUNC: Rounds the converted currency value down to the nearest unit.
align_value	The value to align the currency.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_set_regional_symbols

Context Sensitive • EURO

sets the character used as decimal separator and the character used to separate groups of digits to the left of the decimal.

EURO_set_regional_symbols (*decimal_symbol*, *grouping_symbol* **);**

decimal_symbol	The decimal symbol: "."
grouping_symbol	The grouping symbol: ","

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_set_triangulation_decimals

Context Sensitive • EURO

sets the default decimals precision for the EUR triangulation.

EURO_set_triangulation_decimals (*decimals* **);**

decimals	The number of decimals to which the EURO amount is rounded. (The default is set to 3.)

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

EURO_type_mode

Context Sensitive • EURO

disables/enables overriding of automatic currency recognition for all integer objects in a GUI application.

EURO_type_mode (*mode* **);**

mode	The type mode. One of the following modes can be specified: DISABLE_OVERRIDE: Disables all overrides on integer objects. ENABLE_OVERRIDE: Enables all overrides on integer objects.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner EURO only.

eval

Standard • Miscellaneous

evaluates and executes the enclosed TSL statements.

eval ($statement_1$ **[;** $statement_2$**; ...** $statement_n$ **;]);**

statement	Can be composed of one or more TSL statements.

Return Values

This function normally returns an empty string. For the **treturn** statement, **eval** returns the value of the enclosed parameter.

Availability

This function is always available.

exception_off

Standard • Exception Handling

disables exception handling.

exception_off (*exception_name* **);**

exception_name The name of the exception.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

exception_off_all

Standard • Exception Handling

disables handling of all exceptions.

exception_off_all ( );

Return Values

This function has no return value.

Availability

This function is always available.

exception_on

Standard • Exception Handling

enables exception handling.

exception_on (*exception*);

exception	A string expression that names the exception. The string cannot contain any spaces.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

exp

Standard • Arithmetic

calculates the exponential function, e^x, where *e* is the natural logarithm base and “x” is the exponent.

exp (*x*);

Return Values

This function returns a real number.

Availability

This function is always available.

file_close

Standard • I/O

closes a file that was opened with **file_open**.

file_close (*file_name* **);**

file_name	The name of the file to close.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

file_compare

Standard • I/O

compares the contents of two files.

file_compare ($file_1$**,** $file_2$ **[,** *save_file* **]);**

$file_1$	The name of a file to compare to $file_2$. If the file is not in the current test directory, then include the full path.
$file_2$	If the file is not in the current test directory, then include the full path.
save_file	The name of a file that saves the files for future viewing.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

file_getline

Standard • I/O

reads the next line from a file and assigns it to a variable.

file_getline (*file_name*, *out_line* **);**

file_name	The name of an open file.
out_line	The output variable that stores the line that is read.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

file_open

Standard • I/O

opens a file or creates a new file.

file_open (*file_name*, *mode* **);**

file_name	The name of the file to open or create.
mode	The file mode: FO_MODE_READ, or 0 (read only); FO_MODE_WRITE, or 1 (write only); FO_MODE_APPEND, or 2 (write only, to the end of the file).

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

file_printf

Standard • I/O

prints formatted output to an open file.

file_printf (*file_name*, *format*, exp_1 **[** , exp_2, ... exp_{30} **]);**

file_name	The file to which the output is printed.
format	May include both literal text to be printed and formatting specifications.
exp_1, exp_2,... exp_{30}	The expressions to format and print.

Formatting Specifications

The first character of the format argument is always a percent sign (%). The last character of format is a letter code that determines the type of formatting. One or more format modifiers can appear between the first and last character of the format argument (see below). The possible letter codes are as follows:

c	Prints a character from its decimal ASCII code.
d	Prints the decimal integer portion of a number.
e	Converts input to scientific notation.
f	Pads with zeros to the right of the decimal point.
g	Prints a decimal value while suppressing non-significant zeros.
o	Prints the octal value of the integer portion of a number.
s	Prints an unmodified string.
x	Prints the hexadecimal value of the integer portion of a number.
%	Prints a literal percent sign (%).

Modifying Formats

The output generated by a particular formatting code can be modified. Three types of modifiers can appear between the percent sign (%) and the format code character:

- *(justification)*	A hyphen (-) indicates that the printed output is to be left-justified in its field.
field width	A number by itself or to the left of a decimal point, indicates how many characters the field should be padded. When this number is preceded by a 0, the padding is done with zeros to the left of the printed value.
precision	A number to the right of a decimal point indicates the maximum width of the printed string or how many digits are printed to the right of the output decimal point.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

find_text

Analog • I/O

searches for a string in an area of the screen.

Note: This function is provided for backward compatibility only. You should use the corresponding Context Sensitive **win_find_text** and **obj_find_text** functions.

---

find_text (*string*, *out_coord_array*, *search_area* **[,** *string_def* **]);**

string	The string that is searched for. The string must be complete, contain no spaces, and it must be preceded and followed by a space outside the quotation marks. To specify a literal, case-sensitive string, enclose the string in quotation marks. Alternatively, you can specify the name of a string variable. In this case, the string variable can include a regular expression.
out_coord_array	The name of the array that stores the screen coordinates of the text (see explanation below).
search_area	The area to search, specified as coordinates x_1,y1,x2,y2. These define any two diagonal corners of a rectangle. The interpreter searches for the text in the area defined by the rectangle.
string_def	Defines the type of search to perform. If no value is specified, (0 or FALSE, the default), the search is for a single complete word only. When 1, or TRUE, is specified, the search is not restricted to a single, complete word.

Return Values

If the text is located, this function returns 0. If the text is not found, this function returns 1.

Availability

This function is always available.

generator_add_category

Customization • Function Generator

adds a category to the Function Generator.

generator_add_category (*category_name* **);**

category_name	The name of the category to add.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

generator_add_function

Customization • Function Generator

adds a TSL function to the Function Generator.

generator_add_function (*function_name*, *description*, *arg_number*, arg_name_1, arg_type_1, $default\_value_1$ **[** , ... arg_name_n, arg_type_n, $default\_value_n$ **]);**

function_name	The name of the function being defined, expressed as a string.
description	A brief description of the function. This need not be a valid string expression, meaning it may have spaces within the sentence.
arg_number	The number of arguments in the function being defined. This can be any number from zero to eight.

For each argument in the function being defined, repeat each of the parameters below; **generator_add_function** can be used to define a function with up to eight arguments.

arg_name	The name of the argument.
arg_type	Defines how the user fills in the value of the argument in the Function Generator. This can be: *browse():* user points to a file in a browse file dialog box *point_window:* user points to a window *point_object*: user points to a GUI object *select_list(0 1)*: user selects a value from a list. The *select_list* argument is defined in the Function Generator by using a combo box. *type_edit*: user types in a value
default_value	The default value of the argument.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

generator_add_function_to_category

Customization • Function Generator

adds a function in the Function Generator to a category.

generator_add_function_to_category (*category_name*, *function_name* **);**

category_name	The name of an existing category.
function_name	The name of an existing function.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

generator_add_subcategory

Customization • Function Generator

adds a subcategory to a category in the Function Generator.

generator_add_subcategory (*category_name*, *sub_category_name* **);**

category_name	The name of an existing category.
sub_category_name	The name of an existing category.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

generator_set_default_function

Customization • Function Generator

sets a default function for a category in the Function Generator.

generator_set_default_function (*category_name*, *function_name* **);**

category_name	An existing category.
function_name	An existing function.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

get_aut_var

Standard • Testing Option

returns the value of a variable that determines how WinRunner learns descriptions of objects, records tests, and runs tests on Java applets or applications.

get_aut_var (*variable*, *value* **);**

variable	The variable to get.
value	The value of the variable.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available only for WinRunner with Java support.

get_class_map

Context Sensitive • GUI Map Configuration

returns the standard class associated with a custom class.

get_class_map (*custom_class*, *out_standard_class* **);**

custom_class	The name of the custom class.
out_standard_class	The output variable that stores the Mercury class or the standard MS Windows class associated with the custom class.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner and LoadRunner GUI Vusers on PC platforms only.

get_host_name

Standard • Load Testing

returns the name of a host.

get_host_name ( );

Return Value

This function returns the host name if the operation is successful or null if the operation fails.

Availability

This function is available for LoadRunner GUI Vusers only.

get_master_host_name

Standard • Load Testing

returns the name of the controller's host.

get_master_host_name ( );

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for LoadRunner GUI Vusers only.

get_record_attr

Context Sensitive • GUI Map Configuration

returns the properties learned for an object class.

get_record_attr (*class*, *out_obligatory*, *out_optional*, *out_selector* **);**

class	The name of the Mercury class, MSW_class, or X_class.
out_obligatory	The output variable that stores the list of obligatory properties that are always recorded.
out_optional	The output variable that stores the list of optional properties.
out_selector	The output variable that stores the selector used for this GUI object class.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

get_record_method

Context Sensitive • GUI Map Configuration

returns the record method used for an object class.

get_record_method (*class*, *out_method* **);**

class	The name of the object class.
out_method	The record method used for the object class, as described below:

Method	Description
RM_RECORD	Records operations using Context Sensitive functions. This is the default method for all the standard classes, except the object class (for which the default is MIC_MOUSE).
RM_IGNORE	Turns off recording.
RM_AS_OBJECT	Instructs WinRunner to record all functions on a GUI object as though its class were “object” class.
RM_PASSUP	Records mouse operations (relative to the parent of the object) and keyboard input.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

get_text

Analog • Text Checkpoint

reads text from the screen.

Note: This function is provided for backward compatibility only. You should use the corresponding Context Sensitive **win_get_text** and **obj_get_text** functions. When working with RTL-style windows, use the **str_map_logical_to_visual** function.

---

get_text (*location*);

The **get_text** function reads text from the area of the screen indicated by *location*. The *location* can be any one of the following:

x_1,y_1,x_2,y_2	Describes a rectangle that encloses the text to be read. The pairs of coordinates can designate any two diagonally opposite corners of the rectangle.
x, y	The coordinates of a particular point on the screen. This parameter causes the string closest to the specified point to be read. The search radius around the specified point is defined by the XR_TEXT_SEARCH_RADIUS parameter.
( )	When no *location* is specified (empty parentheses), the string closest to the mouse pointer position is read. The search radius around the pointer position is defined by the XR_TEXT_SEARCH_RADIUS parameter.

Return Values

This function returns a string. By default, the returned string does not include blanks at the beginning or end of the string. (This is determined by the XR_TEXT_REMOVE_BLANKS parameter in the *wrun.ini* file). If no string is found, an empty string is returned.

Availability

This function is always available.

get_time

Standard • Time-Related

returns the current system time, expressed in terms of the number of seconds that have elapsed since 00:00 GMT, January 1, 1970.

```
get_time ( );
```

Return Values

This function returns an integer.

Availability

This function is always available.

get_x

Analog • Input Device

returns the x-coordinate of the current position of the mouse pointer.

```
get_x ( );
```

Return Values

This function returns an integer.

Availability

This function is always available.

get_y

Analog • Input Device

returns the y-coordinate of the current position of the mouse pointer.

```
get_y ( );
```

Return Values

This function returns an integer.

Availability

This function is always available.

getenv

Standard • Miscellaneous

returns the value of any environment variable, as defined in the [WrCfg] section of *wrun.ini* or in the WinRunner runtime environment.

getenv (*environment_variable* **);**

environment_variable A variable chosen from the environment variable list in the [WrCfg] section of the *wrun.ini* file.

Return Values

This function returns the value of the specified environment variable.

Availability

This function is always available.

getvar

Standard • Testing Option

returns the value of a testing option.

getvar (*option* **);**

option A testing option.

The **getvar** function reads the current value of a testing option. For a list and an in-depth explanation of **getvar** options, refer to the "Setting Testing Options from a Test Script" chapter in the *WinRunner User's Guide*.

Return Values

This function returns the value of the specified testing option.

Availability

This function is always available.

GUI_add

Context Sensitive • GUI Map Editor

adds an object to a GUI map file.

GUI_add (*file path*, *window*, *object*, *physical_desc* **);**

file	The GUI map file to which the object is added. If an empty string is entered, the object is added to the temporary GUI map file.
window	The logical name of the window containing the object.
object	The logical name of the object.
physical_desc	The physical description of the object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_buf_get_desc

Context Sensitive • GUI Map Editor

returns the physical description of an object in a GUI map file.

GUI_buf_get_desc (*file*, *window*, *object*, *out_desc* **);**

file	The full path of the GUI map file containing the object.
window	The logical name of the window containing the object.
object	The logical name of the object. If a null string is specified, the function returns the physical description of the window itself.
out_desc	The output variable that stores the physical description.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_buf_get_desc_attr

Context Sensitive • GUI Map Editor

returns the value of a GUI object property in a GUI map file.

GUI_buf_get_desc_attr (*file*, *window*, *object*, *property*, *out_prop_value* **);**

file	The full path of the GUI map file containing the object.
window	The logical name of the window containing the object.
object	The logical name of the object. If no object is specified, the function returns the physical description of the window itself.
property	The property whose value is to be returned.
out_prop_value	The output variable that stores the property value.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_buf_get_logical_name

Context Sensitive • GUI Map Editor

returns the logical name of an object in a GUI map file.

GUI_buf_get_logical_name (*file*, *physical_desc*, *window*, *out_name* **);**

file	The full path of the GUI map file containing the object.
physical_desc	The physical description of the GUI object.
window	The window containing the GUI object.
out_name	The output variable that stores the logical name.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

GUI_buf_new

Context Sensitive • GUI Map Editor

creates a new GUI map file.

GUI_buf_new (*file* **);**

file	The GUI map file to create.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

GUI_buf_set_desc_attr

Context Sensitive • GUI Map Editor

sets the value of a property for an object in a GUI map file.

GUI_buf_set_desc_attr (*file*, *window*, *object*, *property*, *value* **);**

file	The full path of the GUI map file containing the object.
window	The window containing the object.
object	The logical name of the object.
property	The property whose value is to be set.
value	The value set for the property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_close

Context Sensitive • GUI Map Editor

closes a GUI map file.

GUI_close (*file* **);**

file	The full path of the GUI map file to be closed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_close_all

Context Sensitive • GUI Map Editor

closes all GUI map files except the temporary GUI map file. To close the temporary GUI map file, use the **GUI_close** function.

GUI_close_all ( );

The **GUI_close_all** function closes all GUI map files that are currently loaded or open.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_delete

Context Sensitive • GUI Map Editor

deletes an object from a GUI map file.

GUI_delete (*file, window, obj* **);**

file	The full path of the GUI map file containing the object.
window	The logical name of the window containing the object.
obj	The logical name of the object to delete.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_desc_compare

Context Sensitive • GUI Map Editor

compares two physical descriptions.

GUI_desc_compare (*desc*$_1$, *desc*$_2$ **);**

desc$_1$, *desc*$_2$	The physical descriptions to compare.

Return Value

This function returns 1 when the comparison fails and returns 0 when it succeeds.

Availability

This function is always available.

GUI_desc_get_attr

Context Sensitive • GUI Map Editor

gets the value of a property from a physical description.

GUI_desc_get_attr (*physical_desc*, *property*, *out_property_value* **);**

physical_desc	The physical description of a GUI object.
property	The property to return.
out_property_value	The output variable that stores the property value.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

GUI_desc_set_attr

Context Sensitive • GUI Map

sets the value of a property.

GUI_desc_set_attr (*physical_desc*, *property*, *value* **);**

physical_desc	The physical description of an object. This must be a variable and not a constant.
property	The property name.
value	The property value.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_get_name

Context Sensitive • GUI Map Editor

returns the type of GUI for the application under test.

GUI_get_name (*out_name*, *out_version* **);**

out_name	An output variable that stores the name of the current GUI.
out_version	An output variable that stores the current version of the GUI, as described below:

Operating System	Name	Version
Microsoft Windows 95	"Windows 95"	"4.0"
Microsoft Windows 98	"Windows 95"	"4.1"
Microsoft Windows NT	"Windows NT"	"4.0"
Microsoft Windows 2000	"Windows 2000"	"5.0"

Note: Windows 98 is called Windows 95 for purposes of backward compatibility. The major version number for both operating systems is 4. The minor version number is 0 for Windows 95 or 1 for Windows 98.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_get_window

Context Sensitive • GUI Map Editor

returns the active window in the GUI map.

GUI_get_window ( );

Return Values

This function returns the name of the active window if it succeeds, or an empty string if it fails.

Availability

This function is always available.

GUI_list_buf_windows

Context Sensitive • GUI Map Editor

lists all windows in a GUI map file.

GUI_list_buf_windows (*file*, *out_windows*, *out_number* **);**

file	The full path of the GUI map file.
out_windows	The output variable that stores all windows in the GUI map file in an array.
out_number	The output variable assigned to the number of windows in the GUI map file.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_list_buffers

Context Sensitive • GUI Map Editor

lists all open GUI map files.

GUI_list_buffers (*out_files*, *out_number* **);**

out_files	The output variable array that stores all open GUI map files in an array.
out_number	The output variable that stores the number of opened GUI map files.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_list_desc_attrs

Context Sensitive • GUI Map Editor

lists property values for a GUI object.

GUI_list_desc_attrs (*physical_desc*, *out_array* **);**

physical_desc	The physical description of a GUI object.
out_array	The output variable that stores the object's properties and values in an array. The subscript of each array element is the name of the property. The value of each array element is the value of the property. For instance, if the *out_array* is called *property_value*, then: *property_value* ["attr1"] = "val1".

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_list_map_buffers

Context Sensitive • GUI Map Editor

lists all loaded GUI map files.

GUI_list_map_buffers (*out_file*, *out_number* **);**

out_file	The output variable that stores all loaded GUI map files in an array.
out_number	The output variable that stores the number of loaded GUI map files.

Note: The GUI map files must be loaded and not simply open.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_list_win_objects

Context Sensitive • GUI Map Editor

lists all objects in a window.

GUI_list_win_objects (*file*, *window*, *out_objects*, *out_number* **);**

file	The full path of the GUI map file.
window	The name of the window containing the objects.
out_objects	The output variable that stores all objects in the window in an array.
out_number	The output variable that stores the number of objects in the window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_load

Context Sensitive • GUI Map Editor

loads a GUI map file.

GUI_load (*file_name*);

file_name	The full path of the GUI map.

Note: If you do not specify a full path, then WinRunner searches for the GUI map relative to the current file system directory. Therefore, you must always specify a full path to ensure that WinRunner will find the GUI map.

Note: If you are working in the *GUI Map File per Test* mode, you should not manually load or unload GUI map files.

Return Values

This function always returns 0.

Availability

This function is always available.

GUI_map_get_desc

Context Sensitive • GUI Map Editor

returns the description of an object in the GUI map.

GUI_map_get_desc (*window*, *object*, *out_desc*, *out_file* **);**

window	The name of the window containing the GUI object.
object	The logical name of the GUI object.
out_desc	The output variable that stores the description of the GUI object.
out_file	The output variable that stores the GUI map file containing the description.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_map_get_logical_name

Context Sensitive • GUI Map Editor

returns the logical name of an object in the GUI map.

GUI_map_get_logical_name (*physical_desc*, *window*, *out_obj*, *out_file* **);**

physical_desc	The physical description of the object. For more information regarding *physical descriptions,* refer to the "Introducing the GUI Map" chapter in the *WinRunner User's Guide*.
window	The logical name of the window containing the object. If no window is specified, the function looks for one.
out_obj	The output variable that stores the object's logical name.
out_file	The output variable that stores the name of the GUI map file containing the object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_open

Context Sensitive • GUI Map Editor

opens a GUI map file.

GUI_open (*file_name* **);**

file_name	The full path of the GUI map file to open.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_save

Context Sensitive • GUI Map Editor

saves a GUI map file.

GUI_save (*file_name* **);**

file_name	The full path of the GUI map file to save.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_save_as

Context Sensitive • GUI Map Editor

saves a GUI map file under a new name.

GUI_save_as (*current_file_name*, *new_file_name* **);**

current_file_name	The name of the GUI map file to save.
new_file_name	The name of the new file.

Note: When you save the temporary GUI map file, which doesn't have a *current_file_name*, the statement should have the following syntax:

GUI_save_as ("", "new_file_name");

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_set_window

Context Sensitive • GUI Map Editor

sets the scope for GUI object identification within the GUI map.

GUI_set_window (*window_name* **);**

window_name	The name of the window to be activated.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

GUI_unload

Context Sensitive • GUI Map Editor

unloads a GUI map file.

GUI_unload (*file*);

file	The full path of the GUI map file to unload.

Return Values

This function always returns 0.

Availability

This function is always available.

Note: If you are working in the *GUI Map File per Test* mode, you should not manually load or unload GUI map files.

GUI_unload_all

Context Sensitive • GUI Map Editor

unloads all loaded GUI map files.

GUI_unload_all ( );

Return Values

The return value of this function is always 0 and is returned when all the GUI map files have been unloaded.

Availability

This function is always available.

Note: If you are working in the *GUI Map File per Test* mode, you should not manually load or unload GUI map files.

---

gui_ver_add_check

Customization • GUI Checkpoint

registers a new GUI check.

gui_ver_add_check (*check_name*, *capture_function*, *comparison_function*
[, *display_function* **[,** *type* **]]);**

check_name	The name of the check to add.
capture_function	The name of the capture function defined for the check.
comparison_function	The name of the comparison function defined for the check. If no *comparison_function* is specified, the default display is used.
display_function	The name of the function that displays check results.
type	The type of GUI object on which this check operates: 1 for a window, 0 for any other GUI object class. If no *type* is specified, the default 0 is assumed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

gui_ver_add_check_to_class

Customization • GUI Checkpoint

adds a check to an object class, which can be viewed in the GUI Checkpoint dialog boxes.

gui_ver_add_check_to_class (*class*, *check_name* **);**

class	The name of the class.
check_name	The name of the check to add, as defined with **gui_ver_add_check**.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

gui_ver_add_class

Customization • GUI Checkpoint

Creates a GUI checkpoint for a new class.

gui_ver_add_class (*TOOLKIT_class* **[,** *ui_function* **[,** *default_check_function* **]]);**

TOOLKIT_class	The MSW_class or X_class of the object.
ui_function	The name of the function used to develop and display the GUI checkpoint dialog boxes with a customized user interface.
default_check_function	The name of the function that controls the default checks for the object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

gui_ver_set_default_checks

Customization • GUI Checkpoint

sets the default GUI checks for an object class.

gui_ver_set_default_checks (*class*, *check_names* **);**

class	The name of the object class.
check_names	The names of the checks set as defaults, separated by spaces.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

icon_move

Context Sensitive • Icon Object

moves an icon to a new location on the screen.

icon_move (*icon*, *x*, *y* **);**

icon	The logical name of the icon.
x, y	The new position of the upper left corner of the icon.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner and LoadRunner GUI Vusers running on PC platforms only.

---

icon_select

Context Sensitive • Icon Object

selects an icon with a mouse click.

icon_select (*icon* **);**

icon	The logical name of the icon.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner and LoadRunner GUI Vusers running on PC platforms only.

---

index

Standard • String

indicates the position of one string within another.

index (*string*$_1$, *string*$_2$);

string$_1$, *string*$_2$ Two string expressions.

Return Values

The return value indicates the position of the string. The value 0 is returned if the string does not exist.

Availability

This function is always available.

---

int

Standard • Arithmetic

returns the integer portion of a positive real number.

int (*x*);

Return Values

This function returns an integer.

Availability

This function is always available.

invoke_application

Standard • Operating System

invokes a Windows application from within a test script.

invoke_application (*file*, *command_option*, *working_dir*, *show* **);**

file	The full path of the application to invoke.
command_option	The command line options to apply.
working_dir	The working directory for the specified application.
show	Specifies how the application appears when opened. This parameter can be one of the following constants:

Value	Description
SW_HIDE	hides the window and passes activation to another window
SW_MINIMIZE	minimizes the window and activates the top-level window in the system list
SW_RESTORE	activates and displays the window. If the window is minimized or maximized, WinRunner restores it to its original size and position (same as SW_SHOWNORMAL).
SW_SHOW	activates the window and displays it in its current size and position
SW_SHOWMAXIMIZED	activates the window and displays it as a maximized window
SW_SHOWMINIMIZED	activates the window and displays it as an icon
SW_SHOWMINNOACTIVE	displays the window as an icon. The window that is currently active remains active.
SW_SHOWNA	displays the window in its current state. The currently active window remains active.

Value	Description
SW_SHOWNOACTIVATE	displays the window in its most recent size and position. The currently active window remains active.
SW_SHOWNORMAL	activates and displays the window. If the window is minimized or maximized, WinRunner restores it to its original size and position (same as SW_SHOWRESTORE).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner and LoadRunner GUI Vusers running on PC platforms only.

java_activate_method

Context Sensitive • Java

invokes the requested Java method for the given object.

int **java_activate_method (** *object*, *method*, *retval* **[** , $param_1$, ... $param_8$ **]);**

object	The object name
method	The name of the java method to invoke
retval	An output variable that will hold a return value from the invoked method* *Required even for void Java methods
$param_{1...8}$	Parameters to be passed to the Java method. The Parameters must belong to one of the following supported types: Boolean, boolean, Integer, int, String, or any jco object. For information on jco objects, see **jco_create** on page 271.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner with Java support only.

---

java_fire_event

Context Sensitive • Java

Simulates an event on a Java object.

java_fire_event (*object* **,** *class* **[,** *constructor_param*$_1$**,...,** *constructor_param*$_X$ **]);**

object	The logical name of the Java object.
class	The name of the Java class representing the event to be activated.
constructor_param$_1$*...constructor_param*$_X$	The required parameters for the object constructor (excluding the object source, which is specified in the object parameter).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner with Java support only.

jco_create

Context Sensitive • Java

Creates a Java object within your application or applet, or within the context of an existing object in your application or applet.

jco_create (*object* **,** *jco* **,** *class* **[,** *constructor_param*$_1$ **, ... ,** *constructor_param*$_8$ **])**

object	The object that is used as the context in which the new object will be created. This can be the main application or applet window, or any other Java object within the application or applet.
jco	The new object to be returned.
class	The Java class name.
constructor_param$_1$*...constructor_param*$_x$	A list of all constructor parameters.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner with Java support only.

jco_free

Context Sensitive • Java

frees the specified jco object from memory.

jco_free (*object_name* **);**

object_name	The name of the jco object to be freed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner with Java support only.

jco_free_all

Context Sensitive • Java

frees all jco objects from memory.

jco_free_all();

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner with Java support only.

jdc_aut_connect

Context Sensitive • Java

establishes a connection between WinRunner and Java applications.

jdc_aut_connect (*in_timeout* **);**

timeout	Time (in seconds) that is added to the regular **timeout for checkpoints and CS statements** (**Settings > General Options > Run Tab**), resulting in the maximum interval before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner with Java support only.

length

Standard • String

counts the number of characters in a string.

length (*string* **);**

string	A valid string expression.

Return Values

The return value of the function indicates the number of characters in the argument string. If no string is included, **length** returns the value 0.

Availability

This function is always available.

list_activate_item

Context Sensitive • List Object

activates an item in a list.

list_activate_item (*list*, *item* **[,** *offset* **]);**

list	The logical name of the list.
item	The item to activate within the list.
offset	The horizontal offset (in pixels) of the click location relative to the left margin of the item's text (optional).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

list_check_info

Context Sensitive • List Object

checks the value of a list property.

list_check_info (*list*, *property*, *property_value* **);**

list	The logical name of the list.
property	The property to be checked.
property_value	The expected property value.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

list_check_item

Context Sensitive • List Object

checks the content of an item in a list.

list_check_item (*list*, *item_num*, *item_content* **);**

list	The logical name of the list.
item_num	The location of the item in the designated list. Note that the first item in a list is numbered 0.
item_content	The expected contents of the item.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

list_check_selected

Context Sensitive • List Object

checks that the specified item is selected.

list_check_selected (*list*, *selected_items* **);**

list	The logical name of the list.
selected_item	The item(s) that should be selected in the list. If there are multiple items, they should be separated by commas. This argument should be a string or a list of strings.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

list_collapse_item

Context Sensitive • List Object

hides items in a TreeView object.

list_collapse_item (*list*, *item* **[** , *mouse_button* **]);**

list	The logical name of the list.
item	The expanded heading under which the items appear.
mouse_button	A constant that specifies the mouse button to use. The value can be LEFT, MIDDLE, or RIGHT. The default is the left button.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for TreeView objects only.

list_deselect_item

Context Sensitive • List Object

deselects an item in a list.

list_deselect_item (*list*, *item* **[,** *mouse_button* **[,** *offset* **]]);**

list	The logical name of the list.
item	The item to deselect from the list.
mouse_button	A constant that specifies the mouse button to use. The value can be LEFT, MIDDLE, or RIGHT. If no button is specified, the default is the left button.
offset	The horizontal offset (in pixels) of the click location relative to the left margin of the item's text (optional). This parameter may only be used if the *mouse_button* argument is used

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

list_deselect_range

Context Sensitive • List Object

deselects all items between two specified items.

list_deselect_range (*list*, $item_1$, $item_2$ **[,** *offset* **]);**

list	The logical name of the list.
$item_1$	The first item of the range.
$item_2$	The last item of the range.
offset	The horizontal offset (in pixels) of the click location relative to the left margin of the item's text (optional).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

list_drag_item

Context Sensitive • List Object

drags an item from a source list.

list_drag_item (*source_list, item* **[,** *mouse_button* **]);**

source_list	The logical name of the list.
item	The item to drag from the list.
mouse_button	A constant that specifies the mouse button to hold down while dragging the item. The value can be LEFT, MIDDLE, or RIGHT. If no button is specified, the default is the button that performs the select function.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is not supported for ListBox objects.

---

list_drop_on_item

Context Sensitive • List Object

drops an object onto a target list item.

list_drop_on_item (*target_list*, *target_item* **);**

target_list	The logical name of the list.
target_item	The list item on which to drop the source object.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is not supported for ListBox objects.

---

list_expand_item

Context Sensitive • List Object

displays hidden items in a TreeView object.

list_expand_item (*list*, *item* **[** , *mouse_button* **]);**

list	The logical name of the list.
item	The expandable heading under which the items will be displayed.
mouse_button	A constant that specifies the mouse button to use. The value can be LEFT, MIDDLE, or RIGHT. The default is the left button.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for TreeView objects only.

list_extend_item

Context Sensitive • List Object

adds an item to a list of selected items.

list_extend_item (*list*, *item* **[,** *button* **[,** *offset* **]]);**

list	The logical name of the list.
item	The item to add from the list.
button	The mouse button used (optional). In the case of a combo object or a list that is not a ListView or a TreeView, only the left mouse button can be used.
offset	The horizontal offset (in pixels) of the click location relative to the left margin of the item's text (optional). This argument can be used only if the button argument is defined.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

list_extend_multi_items

Context Sensitive • List Object

adds multiple items to the items already selected in a list.

list_extend_multi_items (*list*, *item_list*, **[,** *mouse_button* **[,** *offset* **]]);**

list	The logical name of the list.
item_list	The items to select, separated by commas.
mouse_button	A constant that specifies the mouse button to use. The value can be LEFT, MIDDLE, or RIGHT. The default is the left button.
offset	The horizontal offset (in pixels) of the click location relative to the left margin of the item's text (optional). This argument can be used only if the button argument is defined.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

list_extend_range

Context Sensitive • List Object

selects a range of items and adds them to the current selection.

list_extend_range (*list*, *item*$_1$, *item*$_2$ **[** , *button* **[** , *offset* **]]);**

list	The logical name of the list.
item$_1$	The first item of the range.
item$_2$	The last item of the range.
button	The mouse button used (optional). In the case of a combo object or a list that is not a ListView or a TreeView, only the left mouse button can be used.
offset	The horizontal offset (in pixels) of the click location relative to the left margin of the item’s text (optional). This argument can be used only if the button argument is defined.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

list_get_checked_items

Context Sensitive • List Object

retrieves the number and the value of items marked as checked.

list_get_checked_items (*list*, *items*, *number* **);**

list	The logical name of the ListView or TreeView with check boxes.
items	The concatenated list of the returned values of the items with selected check boxes.
number	The number of items with selected check boxes.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

list_get_column_header

Context Sensitive • List Object

returns the value of a ListView column header.

list_get_column_header (*listview_object*, *in_column_index*, *out_header_value* **);**

listview_object	The name of the list.
in_column_index	The column index.
out_header_value	The column header that is returned.

Note: The **list_get_column_header** function is effective for ListView objects having a report view (style) only.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

The **list_get_column_header** function is effective for ListView objects having a report view (style) only.

---

list_get_info

Context Sensitive • List Object

returns the value of a list property.

list_get_info (*list*, *property*, *out_value* **);**

list	The logical name of the list.
property	Any of the properties listed in the *WinRunner User's Guide*.
out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

list_get_item

Context Sensitive • List Object

returns the contents of a list item.

list_get_item (*list*, *item_num*, *out_value* **);**

list	The logical name of the list.
item_num	The location of the item in the designated list. Note that the first item in a list is numbered 0.
out_value	The contents of the designated item.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

list_get_item_coord

Context Sensitive • List Object

returns the dimensions and coordinates of the list item.

list_get_item_coord (*list*, *item*, *out_x*, *out_y*, *out_width*, *out_height* **);**

list	The list name
item	The item string
out_x, out_y	The output variables that store the x,y coordinates of the item rectangle
out_width, out_height	The output variables that store the width and height of the item rectangle

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available only for list and tree objects in JFC.

list_get_item_info

Context Sensitive • List Object

returns the state of a list item.

list_get_item_info (*list*, *item*, *state*, *out_value* **);**

list	The logical name of the list.
item	The item in the list.
state	The state property of the item. The state property can be either CHECKED or SELECTED.
out_value	The output variable that stores the value of the state property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

list_get_item_num

Context Sensitive • List Object

returns the position of a list item.

list_get_item_num (*list*, *item*, *out_num* **);**

list	The logical name of the list.
item	The string of the item.
out_num	The output variable that stores the position of the list item.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

list_get_selected

Context Sensitive • List Object

returns the numeric and string values of the selected item in a list.

list_get_selected (*list*, *out_item*, *out_num* **);**

list	The logical name of the list.
out_item	The output variable that stores the name of the selected items. For a multi-selection list, the variable contains a list of items, sorted alphabetically, and separated by the character that is set in the Miscellaneous tab of the **Settings** > **General Options** dialog box. The default character is a comma (,).

Note: When using this function with the Java Add-in, always use special character ASCII 24 (thick vertical bar) as the separator, and not the character set in the Miscellaneous tab as described above.

---

out_num	The output variable that stores the items. Note that the first item in a list is numbered 0. For a standard list, stores the index of the selected item. For a multi-selection list, stores the number of selected items.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

list_get_subitem

Context Sensitive • List Object

returns the value of a ListView subitem.

list_get_subitem (*list*, *item*, *subitem_index*, *subitem* **);**

list	The logical name of the ListView.
item	The name of the item.
subitem_index	The index indicating the field of the requested subitem.
subitem	The value of the returned subitem.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

list_rename_item

Context Sensitive • List Object

activates the edit mode on the label of a ListView or a TreeView item in order to rename it.

list_rename_item (*list*, *item* **);**

list	The logical name of the ListView or TreeView.
item	The item to select and rename.

Note: A **list_rename_item** statement must be followed by a type statement in order to rename the item. The item can be denoted by its logical name or numeric index.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

list_select_item

Context Sensitive • List Object

selects a list item.

list_select_item (*list*, *item* **[** ,*button* **[** , *offset* **]]);**

list	The logical name of the list.
item	The item to select in the list.
button	The mouse button used (optional). In the case of a combo object or a list that is not a ListView or a TreeView, only the left mouse button can be used.
offset	The horizontal offset (in pixels) of the click location relative to the left margin of the item's text (optional). This argument can be used only if the button argument is defined.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

list_select_multi_items

Context Sensitive • List Object

selects multiple items in a list.

list_select_multi_items (*list*, *item_list* **[,** *mouse_button* **[,** *offset* **]]);**

list	The logical name of the list.
item_list	The items to select, separated by commas.
mouse_button	A constant that specifies the mouse button to use. The value can be LEFT, MIDDLE, or RIGHT. The default is the left button.
offset	The horizontal offset (in pixels) of the click location relative to the left margin of the item's text (optional). This argument can be used only if the button argument is defined.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

list_select_range

Context Sensitive • List Object

selects all items between two specified items.

list_select_range (*list*, $item_1$, $item_2$ **[,** *button* **[,** *offset* **]]);**

list	The logical name of the list.
$item_1$	The first item of the range.
$item_2$	The last item of the range.
button	The mouse button used (optional). In the case of a combo object or a list that is not a ListView or a TreeView, only the left mouse button can be used.

offset	The horizontal offset (in pixels) of the click location relative to the left margin of the item's text (optional). This argument can be used only if the button argument is defined.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

list_set_item_state

Context Sensitive • List

sets the state of an icon of the specified ListView or TreeView.

list_set_item_state (*list*, *item*, *value* **[** , *button* **]);**

list	The logical name of the ListView or TreeView.
item	The name of the icon.
value	The value of the state icon (check box). The value can be 1 (ON) or 0 (OFF).
button	The mouse button (optional).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

list_wait_info

Context Sensitive • List Object

waits for the value of a list property.

list_wait_info (*list*, *property*, *value*, *time* **);**

list	The logical name of the list.
property	Any of the properties listed in the *User's Guide*.
value	The property value.
time	Indicates the maximum interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

load

Standard • Compiled Module

loads a compiled module into memory.

load (*module_name* **[,**1|0 **[,**1|0 **]]);**

module_name	A string expression indicating the name of an existing compiled module.
1|0	1 indicates a system module. 0 indicates a user module. The default value is 0.
1|0	1 indicates that a user module will not remain open after it is loaded. 0 indicates that the module remains open in the WinRunner window. The default value is 0.

Note: If you make changes to a function in a loaded compiled module, you must unload and reload the compiled module in order for the changes to take effect.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function returns 0 for success, and 1 for failure.

load_16_dll

Standard • Miscellaneous

performs a runtime load of a 16-bit dynamic-link (external) library.

load_16_dll (*pathname* **);**

pathname	The full pathname of the dynamic-link library (DLL) to be loaded.

Note: To call an external function, you must declare it with the extern function declaration.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

load_dll

Standard • Miscellaneous

performs a runtime load of a dynamic-link (external) library.

load_dll (*pathname* **);**

pathname	The full pathname of the dynamic-link library (DLL) to be loaded.

Note: To call an external function, you must declare it with the extern function declaration.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

log

Standard • Arithmetic

returns the natural (base *e*) logarithm of the specified number.

log (*x* **);**

x	Specifies a positive, nonzero number.

Return Values

This function returns a real number.

Availability

This function is always available.

lov_get_item

Context Sensitive • Oracle

retrieves an item from a list of values in an Oracle application.

lov_get_item (*list*, *column*, *row*, *out_value* **);**

list	The name of the list of values.
column	The column number of the item.
row	The row number of the item.
out_value	The parameter where the item will be stored.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

lov_select_item

Context Sensitive • Oracle

selects an item from a list of values in an Oracle application.

lov_select_item (*list*, *item* **);**

list	The list name.
item	The logical name of the item.

Note: This function cannot be recorded.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Developer 2000 support only.

---

lr_whoami

Standard • Load Testing

returns information about the Vuser executing the script.

lr_whoami (*vuser* **[,** *sgroup* **]);**

vuser	The output variable that stores the ID of the Vuser.
sgroup	The output variable that stores the name of the Sgroup.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for LoadRunner GUI Vusers only.

---

match

Standard • String

finds the occurrence of a regular expression in a string.

match (*string*, *regular_expression* **);**

string	The enclosing string.
regular_expression	The expression to locate in the string.

Return Values

This function returns the character position at which the regular expression starts. If no match is found, the value 0 is returned.

Availability

This function is always available.

---

menu_get_desc

Context Sensitive • Menu Object

returns the physical description of a menu.

menu_get_desc (*menu*, *oblig*, *optional*, *selector*, *out_desc* **);**

menu	The full menu path, consisting of the menu's logical name and the menu item, separated by a semicolon (such as file;open). For submenus, the path includes the menu name, menu item, and submenu item.
oblig	The list of obligatory properties (separated by blank spaces).
optional	The list of optional properties (separated by blank spaces).
selector	The type of selector to be used (location or index).
out_desc	The output variable that stores the description of the menu.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

menu_get_info

Context Sensitive • Menu Object

returns the value of a menu property.

menu_get_info (*menu*, *property*, *out_value* **);**

menu	The full menu path, consisting of the menu's logical name and the menu item, separated by a semicolon (such as file;open). For submenus, the path includes the menu name, menu item, and submenu item.
property	The property to be checked. The following properties may be specified: class, label, value, enabled, MSW_id, sub_menu, count, sys_menu, and position.
out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

menu_get_item

Context Sensitive • Menu Object

returns the contents of a menu item.

menu_get_item (*menu*, *item_number*, *out_contents* **);**

menu	The logical name of the menu. For submenus, the full path, consisting of the menu's logical name and the menu item, separated by a semicolon (such as file;type).
item_number	The numeric position of the item in the menu. Note that the first position is numbered 0.
out_contents	The output variable to which the value of the designated menu item is assigned.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

menu_get_item_num

Context Sensitive • Menu Object

returns the position of a menu item.

menu_get_item_num (*menu*, *item*, *out_position* **);**

menu	The logical name of the menu. For submenus, the full path, consisting of the menu’s logical name and the menu item separated by a semicolon (such as file;type).
item	The name (string value) of the item as it appears in the menu.
out_position	The output variable which stores the numeric value of the item.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

menu_select_item

Context Sensitive • Menu Object

selects a menu item.

menu_select_item (*menu*; *item* **[** *x*, *y* **]);**

menu	The logical name of the menu.
item	The item to select.

x,y	The position of the mouse click, expressed as x- and y- (pixel) coordinates.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118

Availability

This function is always available.

---

menu_wait_info

Context Sensitive • Menu Object

waits for the value of a menu property.

menu_wait_info (*menu*, *property*, *value*, *time* **);**

menu	The logical name of the menu.
property	Any of the properties listed in the *User's Guide*.
value	The property value.
time	Indicates the maximum interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

method_wizard

Context Sensitive • Java

Launches the Java Method wizard. The wizard enables you to view the methods associated with any jco object in your application or applet and to generate the appropriate **java_activate_method** statement for one of the displayed methods.

method_wizard ([*object* **]);**

object	The name of the object whose methods will be displayed in the Java Method wizard.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner with Java support only.

move_locator_abs

Analog • Input Device

moves the mouse pointer to a new absolute position.

move_locator_abs (*x*, *y* **[,** *time* **]);**

x, *y*	The absolute screen coordinates of the new pointer position, in pixels.
time	The interval, in milliseconds, that elapses before the locator is moved.

Return Values

This function always returns 0.

Availability

This function is always available.

move_locator_rel

Analog • Input Device

moves the mouse pointer to a new relative position.

move_locator_rel (*x*, *y* **[,** *time* **]);**

x, *y*	The screen coordinates of the new pointer position, in pixels, relative to the current pointer position.
time	The interval that elapses before the locator is moved, in milliseconds.

Return Values

The return value of the function is always 0.

Availability

This function is always available.

move_locator_text

Analog • Input Device

moves the screen pointer to a string.

move_locator_text (*string*, *search_area* **[,** *x_shift* **[,***y_shift* **]]);**

string	A valid string expression. The string must be complete, and preceded and followed by a space. A regular expression with no blank spaces can be specified.
search_area	The area to search, specified as x_1, y_1, x_2, y_2 coordinates that define any two diagonal corners of a rectangle. The interpreter searches for the text in the area defined by the rectangle.
x_shift, y_shift	Indicates the offset of the pointer position from the specified string, in pixels.

Return Values

This function returns 0 if the text is located, and 1 if the text is not found.

Availability

This function is always available.

move_locator_track

Analog • Input Device

moves the mouse pointer along a prerecorded track.

move_locator_track (*track_id* **);**

track_id	A code that points to tracking information stored in the test database. The specified track is a series of continuous pointer movements uninterrupted by input from keyboard or mouse.

Return Values

This function always returns the value 0.

Availability

This function is always available.

mtype

Analog• Input Device

specifies mouse button input.

mtype (*button_input* **[,** *technical_id* **]);**

button_input	A string expression representing mouse button input.
technical_id	Points to internal timing and synchronization data. This parameter is only present when the mtype statement is recorded.

Return Values

This function always returns the value 0.

Availability

This function is always available.

nargs

Standard • Miscellaneous

returns the number of arguments passed.

nargs ( );

Return Values

This function returns the number of arguments actually passed, not the number specified in the definition of the function or test.

Availability

This function is always available.

obj_check_bitmap

Context Sensitive • Object

compares an object bitmap to an expected bitmap.

obj_check_bitmap (*object*, *bitmap*, *time* **[** , *x*, *y*, *width*, *height* **]);**

object	The logical name of the GUI object. The object may belong to any class.
bitmap	A string expression that identifies the captured bitmap.
time	The interval, which is added to the *timeout_msec* testing option, marking the maximum delay between the previous input event and the capture of the current bitmap, in seconds. For more information, refer to the "Setting Testing Options from a Test Script" chapter in the *WinRunner User's Guide*.
x, *y*	For an area bitmap: the coordinates of the upper left corner, relative to the window in which the area is located.
width, *height*	For an area bitmap: the size of the area, in pixels.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

obj_check_gui

Context Sensitive • Object

compares current GUI object data to expected data.

obj_check_gui (*object*, *checklist*, *expected_results_file*, *time* **);**

object	The logical name of the GUI object. The object may belong to any class.
checklist	The name of the checklist defining the GUI checks.
expected_results_file	The name of the file that stores the expected GUI data.
time	The interval, which is added to the timeout test option, marking the maximum delay between the previous input event and the capture of the current GUI data, in seconds. This interval is added to the timeout testing option during test execution.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

obj_check_info

Context Sensitive • Object

checks the value of an object property.

obj_check_info (*object*, *property*, *property_value* **);**

object	The logical name of the GUI object. The object may belong to any class.
property	The property to check.
property_value	The property value.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

obj_click_on_text

Context Sensitive • Object

clicks on text in an object.

obj_click_on_text (*object*, *string* **[,** *search_area* **[,** *string_def* **[,** *mouse_button* **]]]);**

object	The logical name of the object to search.
string	The text to locate. To specify a literal, case sensitive string, enclose the string in quotation marks. Alternatively, you can specify a string variable, which can include a regular expression. The regular expression need not begin with an exclamation mark.
search_area	The region of the object to search, relative to the object. This area is defined as a pair of coordinates, with x_1,y_1,x_2,y_2 specifying any two diagonally opposite corners of the rectangular search region. If no *search_area* is defined, then the entire object is considered as the search area.

string_def	Defines how the text search is performed. If no *string_def* is specified (0 or FALSE, the default parameter), the interpreter searches for a single, complete word only. If 1, or TRUE, is specified, the search is not restricted to a single, complete word.
mouse_button	Specifies the mouse button that clicks on the text string. The value can be LEFT, MIDDLE, or RIGHT. If no button is specified, the default is the left button. Note that if you specify 1, or TRUE, for *string_def*, then you must specify the mouse button to use. Similarly, if you specify the mouse button to use, then you must specify the *string_def*.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

obj_drag

Context Sensitive • Object

drags an object from a source object.

obj_drag (*source_object*, *x*, *y* **[** , *mouse_button* **]);**

source_object	The logical name of the GUI object. The object may belong to any class.
x, *y*	The *x*,*y* coordinates of the mouse pointer when clicked on the source object, relative to the upper left corner of the source object.
mouse_button	A constant that specifies the mouse button to hold down while dragging. The value can be LEFT, MIDDLE, or RIGHT. If no button is specified, the default is the button that performs the select function. This optional parameter is available for WinRunner only.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

obj_drop

Context Sensitive • Object

drops an object onto a target object.

obj_drop (*target_object*, *x*, *y* **);**

target_object	The logical name of the GUI object. The object may belong to any class.
x, *y*	The *x*, *y* coordinates of the pointer when released over the target object, relative to the upper left corner of the target object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

obj_exists

Context Sensitive • Object

checks whether an object is displayed on the screen.

obj_exists (*object* **[,** *time* **]);**

object	The logical name of the object. The object may belong to any class.
time	The amount of time (in seconds) that is added to the default timeout setting (specified with the *timeout_msec* testing option), yielding a new maximum wait time before the subsequent statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

obj_find_text

Context Sensitive • Object

returns the location of a string within an object.

obj_find_text (*object, string*, *result_array* **[,** *search_area* **[,** *string_def* **]]);**

object	The logical name of the object. The object may belong to any class.
string	A valid string expression or the name of a string variable, which can include a regular expression. The regular expression should not include an exclamation mark (!), however, which is treated as a literal character.
result_array	The name of the four-element array that stores the location of the string. The elements are numbered 1 to 4. Elements 1 and 2 store the x- and y-coordinates of the upper left corner of the enclosing rectangle; elements 3 and 4 store the coordinates for the lower right corner.
search_area	Indicates the area of the screen to search as coordinates that define any two diagonal corners of a rectangle, expressed as a pair of x,y coordinates. The coordinates are stored in *result_array*.
string_def	Defines the type of search to perform. If no value is specified (0 or FALSE, the default), the search is for a single, complete word only. When 1, or TRUE, is specified, the search is not restricted to a single, complete word.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

obj_get_desc

Context Sensitive • Object

returns an object’s physical description.

obj_get_desc (*object*, *oblig*, *optional*, *selector*, *out_desc* **);**

object	The logical name of the GUI object. The object may belong to any class.
oblig	The list of obligatory properties (separated by blank spaces).
optional	The list of optional properties (separated by blank spaces).
selector	The type of selector used for this object class (location or index).
out_desc	The output variable that stores the description of the GUI object.

Return Values

If the *oblig*, *optional*, and *selector* parameters are null strings, **obj_get_desc** returns the current learning configuration for the object.

Availability

This function is always available.

obj_get_info

Context Sensitive • Object

returns the value of an object property.

obj_get_info (*object*, *property*, *out_value* **);**

object	The logical name of the GUI object. The object may belong to any class.
property	Any of the properties listed in the *User's Guide*.
out_value	The output variable that stores the value of the property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

obj_get_text

Context Sensitive • Object

reads text from an object.

obj_get_text (*object*, *out_text* **[** , x_1, y_1, x_2, y_2 **]);**

object	The logical name of the GUI object. The object may belong to any class.
out_text	The name of the output variable that stores the captured text.
x_1,y_1,x_2,y_2	An optional parameter that defines the location from which text will be read, relative to the specified object. The pairs of coordinates can designate any two diagonally opposite corners of a rectangle.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

obj_highlight

Context Sensitive • Object

highlights an object.

obj_highlight (*object* **[,** *flashes* **]);**

object	The logical name of the object. The object may belong to any class.
flashes	The number of times the object flashes. The default number is four.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

obj_key_type

Context Sensitive • Java

sends KeyEvents to a Java component.

obj_key_type (*object*, *keyboard_input* **);**

object	The logical name of the GUI object.
keyboard_input	A string expression that represents keystrokes.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner with Java support only.

---

obj_mouse_click

Context Sensitive • Object

clicks on an object.

obj_mouse_click (*object*, *x*, *y* **[,** *mouse_button* **[,** *modifier***]]);**

object	The logical name of the object. The object may belong to any class.
x, *y*	The position of the mouse click expressed as x and y (pixel) coordinates. Coordinates are relative to the upper left corner of the GUI object.
mouse_button	A constant that specifies the mouse button to click. The value can be LEFT, MIDDLE, or RIGHT. If no button is specified, the default is the button that performs the **select** function.
modifier	A constant that specifies the modifier key used with the mouse button. The value can be CONTROL, SHIFT, or CONTROL_SHIFT.

Note: When running a test with an **obj_mouse_click** statement, the object that the mouse clicks must be fully displayed.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

obj_mouse_dbl_click

Context Sensitive • Object

performs a double-click within an object.

obj_mouse_dbl_click (*object*, *x*, *y* **[** , *mouse_button* **[** , *modifier***]]);**

object	The logical name of the GUI object. The object may belong to any class.
x, *y*	The position of the double-click expressed as x and y (pixel) coordinates. Coordinates are relative to the upper left corner of the GUI object.
mouse_button	A constant that specifies the mouse button to click. The value can be LEFT, MIDDLE, or RIGHT. If no button is specified, the default is the button that performs the **select** function.
modifier	A constant that specifies the modifier key used with the mouse button. The value can be CONTROL, SHIFT, or CONTROL_SHIFT.

Note: When running a test with an **obj_mouse_dbl_click** statement, the object that the mouse clicks must be fully displayed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

obj_mouse_drag

Context Sensitive • Object

drags the mouse within an object.

obj_mouse_drag (*object*, *start_x*, *start_y*, *end_x*, *end_y* **[,** *mouse_button* **[,** *modifier***]]);**

object	The logical name of the object. The object may belong to any class.
start_x, start_y	The x and y coordinates of the start point of the mouse drag. The coordinates are relative to the upper left corner of the GUI object.
end_x, end_y	The x and y coordinates of the end point of the mouse drag. The coordinates are relative to the upper left corner of the GUI object.
mouse_button	A constant that specifies the mouse button to hold down. The value can be LEFT, MIDDLE, or RIGHT. If no button is specified, the default is the button that performs the **select** function.
modifier	A constant that specifies the modifier key used with the mouse button. The value can be CONTROL, SHIFT, or CONTROL_SHIFT.

Note: When running a test with an **obj_mouse_drag** statement, the object that the mouse drags must be fully displayed.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

obj_mouse_move

Context Sensitive • Object

moves the mouse pointer within an object.

obj_mouse_move (*object*, *x*, *y* **);**

object	The logical name of the GUI object. The object may belong to any class.
x, y	The position of the mouse pointer, expressed as x and y (pixel) coordinates. Note that the specified coordinates are relative to the upper left corner of the object. This position is relative to the upper left corner of the object.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

obj_move_locator_text

Context Sensitive • Object

moves the mouse pointer to a string in an object.

obj_move_locator_text (*object*, *string* **[,** *search_area* **[,** *string_def* **]]);**

object	The logical name of the object.
string	The text to locate. To specify a literal, case sensitive string, enclose the string in quotation marks. Alternatively, you can specify the name of a string variable. The value of the string variable can include a regular expression (the regular expression need not begin with an exclamation mark).
search_area	The region of the object to search, relative to the window. This area is defined as a pair of coordinates, with x_1,y_1,x_2,y_2 specifying any two diagonally opposite corners of the rectangular search region. If this parameter is not defined, then the entire *object* is considered the search area.
string_def	Defines how the text search is performed. If no *string_def* is specified, (0 or FALSE, the default parameter), the interpreter searches for a complete word only. If 1, or TRUE, is specified, the search is not restricted to a single, complete word.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

obj_set_info

Context Sensitive • Java

sets the value of an object property.

obj_set_info (*object*, *property*, *value* **);**

object	The logical name of the Java object. The object may belong to any class.
property	Any property that has a set method.
value	The variable that stores the new value of the property.

Return Values

This function returns one of the standard return values. It returns E_ATTR_NOT_SUPPORTED for a specified property (for example, value) if one of the following events occur:

- The object does not have the method setValue.
- The method setValue exists, but it either has more than one parameter or the parameter does not belong to one of the following Java classes: String, int, boolean, Integer, Boolean.
    - The parameter given in a TSL call statement cannot be converted to one of the Java classes mentioned above.
- The method setValue throws a Java exception when using the parameters provided in the call statement.

Availability

This function is available for WinRunner with Java support only.

obj_type

Context Sensitive • Object

sends keyboard input to an object.

obj_type (*object*, *keyboard_input* **);**

object	The logical name of the GUI object.
keyboard_input	A string expression that represents keystrokes.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

obj_wait_bitmap

Context Sensitive • Object

waits for an object bitmap to be drawn on the screen.

obj_wait_bitmap (*window*, *bitmap*, *time* **[** , *x*, *y*, *width*, *height* **]);**

object	The logical name of the object. The object may belong to any class.
bitmap	A string expression that identifies the captured bitmap.
time	Indicates the interval between the previous input event and the capture of the current bitmap, in seconds. This parameter is added to the *timeout_msec* testing option and the sum indicates how much time WinRunner will wait for the capture of the bitmap.
x, y	For an area bitmap: the coordinates of the upper left corner, relative to the object in which the selected region is located.
width, height	For an area bitmap: the size of the selected region, in pixels.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

obj_wait_info

Context Sensitive • Object

waits for the value of an object property.

obj_wait_info (*object*, *property*, *value*, *time* **);**

object	The logical name of the object.
property	Any of the properties listed in the *User's Guide*.
value	The property value for which the function waits.
time	The interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

output_message

Standard • Load Testing

sends a message to the controller.

output_message (*message* **);**

message Any string.

The **output_message** function sends a message from a Vuser script to the controller's Output window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118

Availability

This function is available for LoadRunner GUI Vusers only.

password_edit_set

Standard • Password

sets the value of a password edit field to a given value.

password_edit_set (*edit_object*, *encrypted_password* **);**

edit_object The logical name of the edit object.

encrypted_password The encrypted password as it appears in the script.

Note: You can also use the **edit_set**, **type**, and **obj_type** TSL functions to set a password, however the **password_edit_set** function provides extra security by eliminating the password from the test script.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

password_encrypt

Context Sensitive • Password

encrypts a plain password.

password_encrypt (*password* **);**

password	The plain password.

Return Values

This function returns the encrypted password.

Availability

This function is always available.

---

pause

Standard • I/O

pauses test execution and displays a message box.

pause ([*expression* **]);**

expression	Any valid expression.

Return Values

This function always returns 0.

Availability

This function is always available.

phone_append_text

Context Sensitive • WAP

appends the specified text string to the current contents of the phone editor.

phone_append_text (*text* **);**

text	The text string to append in the phone editor.

Note: This function works only while the phone is in editing mode. Trying to use this function while the phone is not in editing mode will return an illegal operation.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for the WAP Add-in. This function is supported for both the Nokia and Phone.com emulators.

phone_edit_set

Context Sensitive • WAP

replaces the contents of the phone editor with the specified text string.

phone_edit_set (text **);**

text	The text string to insert in the phone editor.

Note: This function works only while the phone is in editing mode. Trying to use this function while the phone is not in editing mode will return an illegal operation.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for the WAP Add-in. This function is supported for both the Nokia and Phone.com emulators.

---

phone_get_name

Context Sensitive • WAP

returns the model name of the phone.

phone_get_name (*name*);

name	The model name of the phone.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for the WAP Add-in. This function is supported for both the Nokia and Phone.com emulators.

---

phone_GUI_load

Context Sensitive • WAP

unloads the currently loaded GUI map file and loads the GUI map for the specified Phone.com phone.

phone_GUI_load ([*name*]);

name	The model name of the phone.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for the WAP Add-in. This function is supported for the Phone.com emulator only.

---

phone_key_click

Context Sensitive • WAP

clicks a phone key.

phone_key_click (*key* **[,** *delay* **[,** *timeout* **]]);**

key	The logical name of the phone key.
delay	The Boolean parameter indicating that there is an additional delay to compensate for inserting a new letter while editing.
timeout	The amount of time (in milliseconds) between pressing and releasing the key.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for the WAP Add-in. This function is supported for both the Nokia and Phone.com emulators.

---

phone_navigate

Context Sensitive • WAP

directs the phone to connect to the specified site.

phone_navigate (*URL* **[,** *timeout* **]);**

URL	The URL to which the phone navigates.

timeout	The amount of time (in milliseconds) the phone waits while trying to establish a connection.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for the WAP Add-in. This function is supported for both the Nokia and Phone.com emulators.

phone_sync

Context Sensitive • WAP

recorded after any phone navigation on the Nokia emulator, and instructs WinRunner to wait until the phone is ready to handle the next operation.

phone_sync ([*redirect* **[,** *timeout* **]]);**

redirect	An optional Boolean parameter indicating that the phone will wait an additional amount of time to redirect to another URL.
timeout	The amount of time (in milliseconds) that the phone will wait to try to establish a connection.

Note: This function is inserted automatically to the test scripts after a **phone_key_click** statement is recorded on a Nokia phone that included navigation. The timeout is the expected period of time during which WinRunner expects the navigation to be concluded.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for the WAP Add-in.

This function is supported for recording on the Nokia emulator only. This function is supported for running tests on both the Nokia and the phone.com emulators.

popup_select_item

Context Sensitive • Java

selects an item from a Java popup menu.

popup_select_item (*"menu component;menu item"* **);**

menu	The logical name of the Java component containing the menu.
item	The item to select.

Note: When using **popup_menu_select** on JDK 1.2 - 1.2.2_001, insert the following statement before the **set_window** statement of the popup menu’s parent window:

```
set_aut_var("USE_LOW_LEVEL_EVENTS", "all");
```

You can change this parameter back to "none" using the following statement:

```
set_aut_var("USE_LOW_LEVEL_EVENTS", "none");
```

---

qt_force_send_key

Standard • QuickTest 2000

instructs WinRunner to recognize an edit field which prompts a screen change when information is inserted.

qt_force_send_key (*window_name*, *field_name* **[,** *additional_key* **]);**

window_name	The name of the window.
field_name	The name of the edit field.
additional_key	The key which causes the screen change.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for QuickTest 2000 only.

qt_reset_all_force_send_key

Standard • QuickTest 2000

negates screen change configurations previously made using the **qt_force_send_key** function.

qt_reset_all_force_send_key ( );

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

rand

Standard • Arithmetic

returns a pseudo-random floating point number (n) in the range of $0 \leq n < 1$.

rand ( );

Return Values

This function returns a real number.

Availability

This function is always available.

reload

Standard • Compiled Module

removes a compiled module from memory and loads it again.

reload (*module_name* **[,1|0 [,1|0]]);**

module_name	A string expression indicating the name of an existing compiled module.
1|0	1 indicates a system module. 0 indicates a user module. The default values is 0.
1|0	This parameter is optional and only implemented if the second parameter is implemented. 1 indicates that a user module will not remain open after it is loaded. 0 indicates that the module remains open in the WinRunner window. The default value is 0.

Note: If you make changes to a function in a loaded compiled module, you must unload and reload the compiled module in order for the changes to take effect. For additional information, refer to the "Creating Compiled Modules" chapter in the *WinRunner User's Guide*.

Return Values

This function returns 0 for success, and 1 for failure.

Availability

This function is always available.

---

rendezvous

Standard • Load Testing

sets a rendezvous point in a Vuser script.

rendezvous (*rendezvous_name* **);**

rendezvous_name	The name of the rendezvous declared in a **declare_rendezvous** statement.

Return Value

This function returns 0 if the operation is successful, or one of the following error codes if it fails:

Error code	Number	Description
E_OK	0	operation successful
E_TIMEOUT	-10016	timeout reached before operation performed
E_REND_NF	-10218	rendezvous not defined
E_REND_NOT_MEM	-10219	vuser not defined as a participant in the rendezvous
E_REND_INVALID	-10220	rendezvous disabled

Availability

This function is available for LoadRunner GUI Vusers only.

report_msg

Standard • I/O

writes a message in the test report.

report_msg (*message* **);**

message	A valid string expression.

Return Values

This function always returns 0.

Availability

This function is always available.

return

Standard • Call Statements

returns an expression to the calling function or test.

return [*expression* **];**

expression	The expression to return.

The **return** statement returns an expression to the calling function or test. It is used exclusively in functions. It also halts execution of the called function and passes control back to the calling function or test.

Note about arrays: You cannot return an array from a function. In order to return values in an array, you must declare the array as an OUT parameter in the function.

The return value of a function can be one of the following:

- char (signed and unsigned)
- string (equivalent to C char*)
- short (signed and unsigned)
- int (signed and unsigned)
- long (signed and unsigned)
- float
- double

Return Values

If no expression is used, then an empty string is returned. Otherwise, the return statement does not have a return value.

Availability

This statement is always available.

Note: The **return** statement is not a function. Therefore, it does not appear in the Function Generator.

scroll_check_info

Context Sensitive • Scroll Object

checks the value of a scroll property.

scroll_check_info (*scroll*, *property*, *property_value* **);**

scroll	The logical name of the scroll.
property	The property to be checked.
property_value	The expected property value.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

scroll_check_pos

Context Sensitive • Scroll Object

checks the current position of a scroll.

scroll_check_pos (*scroll*, *position* **);**

scroll	The logical name of the scroll.
position	A number indicating the expected scroll position.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

scroll_drag

Context Sensitive • Scroll Object.

scrolls to the specified location.

scroll_drag (*scroll*, *orientation*, *position* **);**

scroll	The logical name of the scroll.
orientation	The direction of the scroll; either VSCROLL (vertical) or HSCROLL (horizontal).
position	The absolute position within the scroll.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function can be used for scroll bar and slider objects.

scroll_drag_from_min

Context Sensitive • Scroll Object

scrolls from the minimum position.

scroll_drag_from_min (*scroll*, *orientation*, *position* **);**

scroll	The logical name of the scroll object.
orientation	The direction of the scroll; either VSCROLL (vertical) or HSCROLL (horizontal).

Note: The orientation parameter is not available for Java objects.

---

position	The number of units from the minimum position to drag the scroll.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function can be used for scroll bar and slider objects.

---

scroll_get_info

Context Sensitive • Scroll Object

returns the value of a scroll property.

scroll_get_info (*scroll*, *property*, *out_value* **);**

scroll	The logical name of the scroll.
property	Any of the properties listed in the *WinRunner User's Guide*.
out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function can be used for scroll bar and slider objects.

---

scroll_get_max

Context Sensitive • Scroll Object

returns the maximum (end) position of a scroll.

scroll_get_max (*scroll*, *orientation*, *out_max* **);**

scroll	The logical name of the scroll.
orientation	The direction of the scroll; either VSCROLL (vertical) or HSCROLL (horizontal).
out_max	The output variable which stores the maximum value of the scroll.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function can be used for scroll bar and slider objects.

---

scroll_get_min

Context Sensitive • Scroll Object

returns the minimum (start) position of a scroll.

scroll_get_min (*scroll*, *orientation*, *out_min* **);**

scroll	The logical name of the scroll.
orientation	The direction of the scroll; either VSCROLL (vertical) or HSCROLL (horizontal).
out_min	The output variable that stores the minimum (starting) value of the scroll.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function can be used for scroll bar and slider objects.

---

scroll_get_pos

Context Sensitive • Scroll Object

returns the current scroll position.

scroll_get_pos (*scroll*, *orientation*, *out_pos* **);**

scroll	The logical name of the scroll.
orientation	The direction of the scroll; either VSCROLL (vertical) or HSCROLL (horizontal).
out_pos	The output variable which stores the current position of the scroll.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function can be used for scroll bar and slider objects.

---

scroll_get_selected

Context Sensitive • Scroll Object

returns the minimum and maximum values of the selected range on a slider.

scroll_get_selected (*slider*, *min_value*, *max_value* **);**

slider	The logical name of the slider.
min_value	The output variable that stores the minimum value of the selected range.
max_value	The output variable that stores the maximum value of the selected range.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

The scroll_get_selected function works only for slider objects, for which the TBS_ENABLESELRANGE flag is set. This flag allows a selection range within the scroll to be displayed.

---

scroll_line

Context Sensitive • Scroll Object

scrolls the specified number of lines.

scroll_line (*scroll*, *orientation,* **[+|-]** *lines* **);**

scroll	The logical name of the scroll.
orientation	The direction of the scroll; either VSCROLL (vertical) or HSCROLL (horizontal).

[+|-] *lines*	The number of scrolled lines. "+" indicates the scroll is performed downward or to the right; "-" indicates the scroll is performed upward or to the left. The default is "+".

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function can be used for scroll bar and slider objects.

---

scroll_max

Context Sensitive • Scroll Object

sets a scroll to its maximum (end) position.

scroll_max (*scroll*, *orientation* **);**

scroll	The logical name of the scroll.
orientation	The direction of the scroll; either VSCROLL (vertical) or HSCROLL (horizontal).

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function can be used for scroll bar and slider objects.

---

scroll_min

Context Sensitive • Scroll Object

sets the scroll to its minimum (start) position.

scroll_min (*scroll*, *orientation* **);**

scroll	The logical name of the scroll object.
orientation	The direction of the scroll; either VSCROLL (vertical) or HSCROLL (horizontal).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function can be used for scroll bar and slider objects.

---

scroll_page

Context Sensitive • Scroll Object

moves the scroll the specified number of pages.

scroll_page (*scroll*, *orientation*, **[+|-]** *pages* **);**

scroll	The logical name of the scroll.
orientation	The direction of the scroll; either VSCROLL (vertical) or HSCROLL (horizontal).
[+|-] *pages*	The number of scrolled pages. "+" indicates that the scroll is performed downward or to the right; "-" indicates that the scroll is performed upward or to the left. The default is '+'.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function can be used for scroll bar and slider objects.

---

scroll_wait_info

Context Sensitive • Scroll Object

waits for the value of a scroll property.

scroll_wait_info (*scroll*, *property*, *value*, *time* **);**

scroll	The logical name of the scroll.
property	Any of the properties listed in the *WinRunner User's Guide*.
value	The property value.

time	The interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function can be used for scroll bar and slider objects.

---

set_aut_var

Standard • Testing Option

sets how WinRunner learns descriptions of objects, records tests, and runs tests on Java applets or applications.

set_aut_var (*variable*, *value* **);**

variable	The variable to set.
value	The value of the variable.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available only for WinRunner with Java support.

---

set_class_map

Context Sensitive • GUI Map Configuration

associates a custom class with a standard class.

set_class_map (*custom_class*, *standard_class* **);**

custom_class	The name of the custom class used in the application.
standard_class	The name of the Mercury class or the MS Windows standard class with the same behavior as the custom class.

Note: You should store **set_class_map** statements in a startup test.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner and GUI Vusers running on PC platforms only.

set_record_attr

Context Sensitive • GUI Map Configuration

sets the properties to learn for an object class.

set_record_attr (*class*, *oblig_prop*, *optional_prop*, *selector* **);**

class	The name of the Mercury class, MSW_class, or X_class.
oblig_prop	A list of properties (separated by blank spaces) to always learn.
optional_prop	A list of descending properties (separated by blank spaces) to add to the description until unique identification of the object is achieved.
selector	The type of selector to be applied in case both obligatory and optional properties do not achieve a unique object identification. This may be either index or location.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

set_record_method

Context Sensitive • GUI Map Configuration

specifies the record method for a class.

set_record_method (*class*, *method* **);**

class	The name of a standard class, MSW_class, or TOOLKIT_class.
method	The record method to use, as described in the table below.

Method	Description
RM_RECORD	Records operations using Context Sensitive functions. This is the default method for all the standard classes, except the object class (for which the default is MIC_MOUSE).
RM_IGNORE	Turns off recording.
RM_PASSUP	Records mouse operations (relative to the parent of the object) and keyboard input.
RM_AS_OBJECT	Records all windows or objects as general "object" class objects (**obj_mouse_click** or **win_mouse_click**).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

set_window

Context Sensitive • Window Object

specifies the window to receive subsequent input and (optionally) specifies the amount of time to wait for the specified window.

set_window (*window* **[,***time* **]);**

window	The logical name of the window.
time	The amount of time, in seconds, added to the timeout option (set in the Run tab of the **Settings** > **General Options** dialog box) to give the maximum interval before the next statement is executed (WinRunner). If the Window is found before the maximum time is reached, the test continues to run.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

_set_window

Context Sensitive • Window Object

specifies a window to receive input.

_set_window (*desc*, *time* **);**

desc	The physical description of the window.
time	The time is added to the *timeout_msec* testing option to give the maximum interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

setvar

Standard • Testing Option

sets the value of a testing option.

setvar (*option*, *value* **);**

option	A testing option.
value	The value to assign to the testing option.

The **setvar** function changes the value of a testing option. For a list and an in-depth explanations of **setvar** options, refer to the "Setting Testing Options from a Test Script" chapter in the *WinRunner User's Guide*.

Return Values

This function always returns 0.

Availability

This function is always available.

---

siebel_click_history

Context Sensitive • Siebel

clicks the Siebel History button.

siebel_click_history (*thread_bar_object* **);**

thread_bar_object	The logical name of the Siebel bar object containing the History button.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

siebel_connect_repository

Context Sensitive • Siebel

connects to the Siebel repository database.

siebel_connect_repository (*connection_string* **);**

connection_string	The string that activates the connection to the Siebel repository database.

Note: You only need to call this function once per connection.

If you encounter difficulties connecting the repository using an existing DSN, use the ODBC Data Source Administrator from the Windows Control Panel to define a new User Data Source (DSN) that refers to the Siebel Repository database.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

siebel_get_active_applet

Context Sensitive • Siebel

returns the active applet name.

siebel_get_active_applet (*applet_name* **);**

applet_name	The output variable that stores the name of the active applet.

Note: A **set_window** statement must precede this function in order to direct the input to the correct application window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

siebel_get_active_buscomp

Context Sensitive • Siebel

returns the active business component name.

siebel_get_active_buscomp (*bus_comp_name* **);**

bus_comp_name	The output variable that stores the name of the active business component.

Note: A **set_window** statement must precede this function in order to direct the input to the correct application window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

siebel_get_active_busobj

Context Sensitive • Siebel

returns the active business object name.

siebel_get_active_busobj (*bus_obj_name* **);**

bus_obj_name	The output variable that stores the name of the active business object.

Note: A **set_window** statement must precede this function in order to direct the input to the correct application window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

siebel_get_active_control

Context Sensitive • Siebel

returns the active control name.

siebel_get_active_control (*control_name* **);**

control_name	The output variable that stores the name of the active control.

Notes: This function makes it possible to use the **siebel_get_control_value** and **siebel_set_control_value** functions. A **set_window** statement must precede this function in order to direct the input to the correct application window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

siebel_get_active_view

Context Sensitive • Siebel

returns the active view name.

siebel_get_active_view (*view_name* **);**

view_name	The output variable that stores the name of the active View object.

Note: A **set_window** statement must precede this function in order to direct the input to the correct application window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

siebel_get_chart_data

Context Sensitive • Siebel

returns the legend data and chart values from the specified chart.

siebel_get_chart_data (*chart_object*, *ret_legend_array*, *ret_values_array* **);**

chart_object	The logical name of the chart or the chart's legend.
ret_legend_array	The output variable that stores the array of legend elements.
ret_values_array	The output variable that stores the array of chart values.

Note: Either the legend or the chart may be selected, and that both will return the same data.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

siebel_get_control_value

Context Sensitive • Siebel

returns the value of the active control.

siebel_get_control_value (*value* **);**

value	The output variable that stores the value of the active control.

Note: The **siebel_set_active_control** function must precede this statement in order to establish the active control.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for WinRunner with Siebel support.

---

siebel_goto_record

Context Sensitive • Siebel

navigates to the specified record.

siebel_goto_record (*direction* **);**

direction	The direction in which to move to get to the desired record from the current location. Possible values are: "First", "Last", "Previous", or "Next".

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for WinRunner with Siebel support.

---

siebel_navigate_view

Context Sensitive • Siebel

navigates to the specified view.

siebel_navigate_view (*view_name* **);**

view_name	The internal name of the view to be reached.

Note: Navigation is sensitive to the record context.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

---

siebel_obj_get_info

Context Sensitive • Siebel

returns the value of a single Siebel property from the Siebel repository database.

siebel_obj_get_info (*obj_type*, *obj_name*, *applet_name*, *property_name*, *ret_prop_val* **);**

obj_type	The Siebel type for which to retrieve the attribute. Possible values for this parameter are: S_APPLET, S_BUSCOMP, S_BUSOBJ, S_CONTROL, S_FIELD, or S_VIEW
obj_name	The internal object name for which to retrieve the attribute.
applet_name	The applet name Required only with *obj_type*: CONTROL or FIELD. For all other *obj_types*, enter "".
property_name	The name of the property to retrieve.
ret_prop_val	The output variable that stores the value of the specified object property.

Note: You must connect to the Siebel repository database with a **siebel_connect_repository** statement before you use this function.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for WinRunner with Siebel support.

---

siebel_obj_get_properties

Context Sensitive • Siebel

returns all properties of a specified Siebel in the Siebel repository database.

siebel_obj_get_properties (*obj_type*, *obj_name*, *applet_name*, *ret_prop_array* **);**

obj_type	The Siebel type for which to retrieve the properties. Possible values for this parameter are: S_APPLET, S_BUSCOMP, S_BUSOBJ, S_CONTROL, S_FIELD, or S_VIEW
obj_name	The internal object name for which to retrieve the properties.
applet_name	The applet name. Required only with obj_type: CONTROL or FIELD. For all other obj_types, enter "".
ret_prop_array	The output variable that stores the array of values for the specified object property.

Note: You must connect to the Siebel repository database with a **siebel_connect_repository** statement before you use this function.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for WinRunner with Siebel support.

---

siebel_select_alpha

Context Sensitive • Siebel

selects a letter key from the alpha tab bar.

siebel_select_alpha (*alpha_tab_object*, *key* **);**

alpha_tab_object	The logical name of the alpha tab object; usually "alpha tab".
key	The letter key to select from the alpha tab.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for WinRunner with Siebel support.

---

siebel_set_active_applet

Context Sensitive • Siebel

sets the specified applet as the active applet.

siebel_set_active_applet (*applet_name* **);**

applet_name	The internal name of the of the applet to activate. If you do not know the applet’s internal name, you may use the **siebel_get_active_applet** to retrieve it.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for WinRunner with Siebel support.

---

siebel_set_active_control

Context Sensitive • Siebel

sets the specified control as the active control.

siebel_set_active_control (*control_name* **);**

control_name	The internal name of the control to activate. If you do not know the control’s internal name, you can use the **siebel_get_active_applet** function to retrieve it.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is supported for WinRunner with Siebel support.

---

siebel_set_control_value

Context Sensitive • Siebel

sets the value of the active control.

siebel_set_control_value (*new_value* **);**

new_value	The value to be assigned to the active control.

Note: The **siebel_set_active_control** function must precede this statement in order to establish the active control.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

---

siebel_terminate

Context Sensitive • Siebel

closes the Siebel application.

siebel_terminate ( );

Note: Call this function to terminate the Siebel application or immediately after manually closing the application.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Siebel support.

---

sin

Standard • Arithmetic

calculates the sine of an angle expressed in radians.

sin (*x*);

Return Values

This function returns a real number.

Availability

This function is always available.

spin_get_info

Context Sensitive • Spin Object

returns the value of a spin property.

spin_get_info (*spin*, *property*, *out_value* **);**

spin	The logical name of the spin object.
property	Any of the properties listed in the *User's Guide*.
out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

spin_get_pos

Context Sensitive • Spin Object

returns the current position of a spin object.

spin_get_pos (*spin*, *out_value* **);**

spin	The logical name of the spin object.
property	Any of the properties listed in the *User's Guide*.
out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

spin_get_range

Context Sensitive • Spin Object

returns the minimum and maximum positions of a spin object.

spin_get_range (*spin*, *out_min_pos*, *out_max_pos* **);**

spin	The logical name of the spin object.
out_min_pos	The output variable that stores the minimum position of the spin object.
out_max_pos	The output variable that stores the maximum position of the spin object.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

spin_max

Context Sensitive • Spin Object

sets a spin object to its maximum value.

spin_max (*spin* **);**

spin	The logical name of the spin object.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

spin_min

Context Sensitive • Spin Object

sets a spin object to its minimum value.

spin_min (*spin*);

spin	The logical name of the spin object.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

spin_next

Context Sensitive • Spin Object

sets a spin object to its next value.

spin_next (*spin* [, *index*]);

spin	The logical name of the spin object.
index	The number of the text field in the spin object.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

spin_prev

Context Sensitive • Spin Object

sets a spin object to its previous value.

spin_prev (*spin*);

spin	The logical name of the spin object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

spin_set

Context Sensitive • Spin Object

sets a spin object to an item.

spin_set (*spin*, *item*);

spin	The logical name of the spin object.
item	The item to select in the spin object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

spin_up

Context Sensitive • Spin Object

scrolls a spin control up the specified number of times.

spin_up (*spin_obj***,** *spins* **);**

spin_obj	The name of the spin control.
spins	The number of times the control is moved up.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is supported for WinRunner with Visual Basic support.

spin_wait_info

Context Sensitive • Spin Object

waits for a spin property to attain a specified value.

spin_wait_info (*spin*, *property*, *value*, *time* **);**

spin	The logical name of the spin.
property	Any of the properties listed in the *WinRunner User's Guide*.
value	The property value for which the function waits.
time	The interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

split

Standard • Array

divides an input string into fields and stores them in an array.

split (*string*, *array* **[** , *field_separators* **]);**

string	A valid string expression.
array	The name of the storage array.
field_separators	The characters in the string which designate where the string is to be split into fields. Each single character is used as a separator.

Note: The first element in the array index is numbered 1. The number of elements in the array equals the result of the split. As in any array, they are sequential integers.

Return Values

This function returns the number of elements in the array.

Availability

This function is always available.

sprintf

Standard • I/O

returns a formatted string to a variable.

sprintf (*format*, exp_1, exp_2, ... exp_n **);**

format	May include both a literal string to be printed and formatting specifications.
exp	The expressions to format.

Return Values

This function returns a formatted string.

Availability

This function is always available.

---

sqrt

Standard • Arithmetic

returns the square root of its argument.

sqrt (*x*);

x	A variable.

Return Values

This function returns a real number.

Availability

This function is always available.

---

srand

Standard • Arithmetic

defines a seed parameter for the **rand** function, which returns a pseudo-random floating point number (*n*) within the range of $0 \leq n \leq 1$.

srand ([x]);

x	Specifies the seed parameter. If no seed is entered, the time of day is the value of the seed.

Note: The seed parameter provided by **srand** starts the random sequence.

Return Values

This function returns a real number indicating the user-defined seed parameter, or, if no seed is given, the value returned by **get_time**.

Availability

This function is always available.

---

start_transaction

Standard • Load Testing

marks the beginning of a transaction for performance analysis.

start_transaction (*transaction_name* **);**

transaction_name	A string expression that names the transaction. The string must not contain any spaces.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for LoadRunner GUI Vusers only.

---

static_check_info

Context Sensitive • Static Text Object

checks the value of a static text object property.

static_check_info (*static*, *property*, *property_value* **);**

static	The logical name of the static text object.
property	The property to check.
property_value	The expected property value.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

static_check_text

Context Sensitive • Static Text Object

checks the content of a static text object.

static_check_text (*static*, *text*, *case_sensitive* **);**

static	The logical name of the static text object.
text	The contents of the static text object.
case_sensitive	Indicates whether the comparison is case sensitive. This value is either TRUE or FALSE.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

static_get_info

Context Sensitive • Static Text Object

returns the value of a static text object property.

static_get_info (*static*, *property*, *out_value* **);**

static	The logical name of the static text object.
property	Any of the properties listed in the *User's Guide*.
out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

static_get_text

Context Sensitive • Static Text Object

returns the contents of a static text object.

static_get_text (*static*, *out_string* **);**

static	The logical name of the static text object.
out_string	The output variable that stores the string found in the static text object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

static_wait_info

Context Sensitive • Static Text Object

waits for the value of a static text object property.

static_wait_info (*static*, *property*, *value*, *time* **);**

static	The logical name of the static text object.
property	Any of the properties listed in the *User's Guide*.
value	The expected property value.
time	The maximum interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

statusbar_get_field_num

Context Sensitive • Statusbar

returns the numeric index of a field on a status bar.

statusbar_get_field_num (*statusbar*, *field*, *field_index* **);**

statusbar	The logical name of the status bar.
field	The text in the status bar field. If the text in the field changes, you can use a regular expression.
field_index	The output variable that stores the numeric index of the field. Note that the first field in the status bar is numbered 0.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

statusbar_get_info

Context Sensitive • Statusbar

returns the value of a status bar property.

statusbar_get_info (*statusbar*, *property*, *out_value* **);**

statusbar	The logical name of the status bar.

property	The following properties may be specified: *abs_x*, *abs_y*, *active*, *attached_text*, *class*, *count*, *displayed*, *enabled*, *focus*, *handle*, *height*, *label*, *MSW_class*, *MSW_id*, *nchildren*, *parent*, *value* (default), *width*, *x*, *y*
out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

statusbar_get_text

Context Sensitive • Statusbar

reads text from a field on a status bar.

statusbar_get_text (*statusbar*, *field_index*, *out_text* **);**

statusbar	The logical name of the status bar.
field_index	The index number of the field containing the text you want to read. The first field in the status bar is numbered 0.
out_text	The name of the output variable that stores the text.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

statusbar_wait_info

Context Sensitive • Statusbar

waits for the value of a status bar property.

statusbar_wait_info (*statusbar*, *property*, *value*, *time* **);**

statusbar	The logical name of the status bar.
property	The property to wait for. The following properties may be specified: *abs_x*, *abs_y*, *active*, *attached_text*, *class*, *count*, *displayed*, *enabled*, *focus*, *handle*, *height*, *label*, *MSW_class*, *MSW_id*, *nchildren*, *parent*, *value* (default), *width*, *x*, *y*
value	The property value.
time	Indicates the interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

str_map_logical_to_visual

Standard • I/O

converts a logical string to a visual string or vice-versa.

str_map_logical_to_visual (*logical_string*, *visual_string* **);**

logical_string	A valid logical string expression.
visual_string	The corresponding returned valid visual string expression.

The **str_map_logical_to_visual** function returns a valid visual string expression for a valid logical string expression. Alternatively, it returns a valid logical string expression for a valid visual string expression.

Note: This function is primarily intended for use with RTL-style windows. When working with applications with RTL-style windows, the **get_text** function sometimes returns a logical string instead of a visual string.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

substr

Standard • String

extracts a substring from a string.

substr (*string*, *position* **[,** *length* **]);**

string	A valid string expression.
position	An integer that indicates the position of the first character of the substring. The position of the first character of the string is 1, the second is 2, etc.
length	Defines the number of characters (starting from *position*) to include in the substring.

Return Values

This function returns a string. If the value of *position* is greater than the length of the specified string, then the function returns the null string.

Availability

This function is always available.

system

Standard • Operating System

executes an operating system command.

system (*expression* **);**

expression	A string expression that specifies the system command to execute.

Return Values

The return value of the function is the value of the operating system command executed.

Availability

This function is available for WinRunner and LoadRunner GUI Vusers on UNIX platforms. The **system** function is also supported on other platforms for purposes of porting and backward compatibility.

tab_get_info

Context Sensitive • Tab Object

returns the value of a tab property.

tab_get_info (*tab*, *property*, *out_value* **);**

tab	The logical name of the tab object.
property	Any of the properties listed in the *WinRunner User's Guide*.
out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

tab_get_item

Context Sensitive • Tab Object

returns the name of a tab item.

tab_get_item (*tab*, *item_num*, *out_item* **);**

tab	The logical name of the tab.
item_num	The location of the tab item. Note that the first tab item in a property sheet is numbered 0.
out_item	The output variable that stores the tab name.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

tab_get_selected

Context Sensitive • Tab Object

returns the name and number of the selected tab item.

tab_get_selected (*tab*, *out_item*, *out_num* **);**

tab	The logical name of the tab.
out_item	The output variable that stores the name of the selected tab item. Note that the first tab item in a property sheet is numbered 0.
out_num	The output variable that stores the index of the selected tab item.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

tab_select_item

Context Sensitive • Tab Object

selects a tab item.

tab_select_item (*tab*, *item* **);**

tab	The logical name of the tab.
item	The item to select. The item can be denoted by either its name or its numeric index. The index is specified as a string preceded by the character #. The first tab item is numbered 0.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

tab_wait_info

Context Sensitive • Tab Object

waits for the value of a tab property.

tab_wait_info (*tab*, *property*, *value*, *time* **);**

tab	The logical name of the tab.
property	Any of the properties listed in the *User's Guide*.
value	The property value for which the function waits.
time	The maximum interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

tbl_activate_cell

Context Sensitive • Table

double-clicks the specified cell in a table.

tbl_activate_cell (*table*, *row*, *column* **);**

table	The logical name of the table.
row	**By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". For WinRunner with PowerBuilder support, the *row* can also be in the following format: **By content:** <Column_name>=<column_content$_1$ [column_content$_n$....]> The contents of one or more cells in the row, separated by semicolons and preceded by the name of the column in which they appear and an equal sign, such as "Flight_Number=306;From=LAX". The contents of all the cells specified must be present in order to specify the row. Choose this format to specify a row by the contents of cells in that row. If the contents of some cells appear in multiple rows, specify multiple cells whose contents will uniquely identify the row.
column	The *column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <Column_name> The column name, such as "Flight_Number". When the column name is specified, WinRunner takes the name from the database itself, and not from the application.

Note for PowerBuilder users: When *row* is specified **by content**, *column* must also be specified **by content**.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is not supported for WebTest.

This function is supported for WinRunner with Java support. It is supported for the following Java toolkit packages: JFC, EWT (Oracle), and KLG.

This function is supported for WinRunner with PowerBuilder or Siebel support.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_activate_col

Context Sensitive • Table

double-clicks the specified column in a table.

tbl_activate_col (*table*, *column* **);**

table	The logical name of the table.
column	The *column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <Column_name> The column name, such as "Flight_Number". When the column name is specified, WinRunner takes the name from the database itself, and not from the application.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java support. It is supported for the following Java toolkit packages: JFC and KLG.

tbl_activate_header

Context Sensitive • Table

double-clicks the specified column header in a table.

tbl_activate_header (*table*, *column* **);**

table	The logical name of the table.
column	The *column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <Column_name> The column name, such as "Flight_Number".

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is not supported for WebTest.

This function is supported for WinRunner with Siebel support.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_activate_row

Context Sensitive • Table

double-clicks the specified row in a table.

tbl_activate_row (*table*, *row* **);**

table	The logical name of the table.
row	The *row* can be either **By location:** # <column_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". **By content:** <row_name> The row name, such as "Flight_2".

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available for WinRunner with Java support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, and KLG.

This function is supported for WinRunner with Siebel support.

tbl_click_cell

Analog • Table

clicks in a cell in a JFC JTable object.

tbl_click_cell (*table_name*, *cell_index*, *column_name* **[,** *mouse_button* **]);**

table_name	The name of the table.
cell_index	An index number denoting the position of the cell in the column. The index number is preceded by #, for example #2.
column_name	The name of the column in which the cell is located.
mouse_button	The mouse button used to click on the cell (optional).

Note: WinRunner records this function only after the **set_aut_var** function is used to set the TABLE_RECORD_METHOD variable to ANALOG.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for PowerBuilder and Table Functions," on page 123.

Availability

This function is available only for WinRunner with Java Add-in support.

tbl_dbl_click_cell

Analog • Table

double-clicks in a cell in a JFC JTable object.

tbl_dbl_click_cell (*table_name*, *cell_index*, *column_name* **[** , *mouse_button* **]);**

table_name	The name of the table.
cell_index	An index number denoting the position of the cell in the column. The index number is preceded by #, for example #2.
column_name	The name of the column in which the cell is located.
mouse_button	The mouse button used to click on the cell (optional).

Note: WinRunner records this function only after the **set_aut_var** function is used to set the TABLE_RECORD_METHOD variable to ANALOG.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java Add-in support.

---

tbl_deselect_col

Context Sensitive • Table

deselects the specified column in a table.

tbl_deselect_col (*table*, *column* **);**

table	The logical name of the table.
column	The *column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <column_name> The column name, such as "Flight_Number". When the column name is specified, WinRunner takes the name from the database itself, and not from the application.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java support. It is supported for the JFC Java toolkit package.

tbl_deselect_cols_range

Context Sensitive • Table

deselects the specified range of columns in a table.

tbl_deselect_cols_range (*table*, *from_column*, *to_column* **);**

table	The logical name of the table.
from_column	The *from_column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <column_name> The column name, such as "Flight_Number". When a column name is specified, WinRunner takes the name from the database itself, and not from the application.
to_column	The *to_column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <column_name> The column name, such as "Flight_Number". When a column name is specified, WinRunner takes the name from the database itself, and not from the application.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java support. It is supported for the JFC Java toolkit package.

tbl_deselect_row

Context Sensitive • Table

deselects the specified row in a table.

tbl_deselect_row (*table*, *row* **);**

table	The logical name of the table.
row	The *row* can be either: **By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". **By content:** <row_name> The row name, such as "Flight_2".

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, and KLG.

tbl_deselect_rows_range

Context Sensitive • Table

deselects the specified range of rows in a table.

tbl_deselect_rows_range (*table*, *from_row*, *to_row* **);**

table	The logical name of the table.
from_row	The *from_row* can be either: **By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". **By content:** <row_name> The row name, such as "Flight_2".

to_row The *to_row* can be either:

By location: # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2".

By content: <row_name> The row name, such as "Flight_2".

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for PowerBuilder and Table Functions," on page 123.

Availability

This function is available only for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC and Visual Cafe.

---

tbl_drag

Analog • Table

drags a cell to a different location within a JFC JTable object.

tbl_drag (*table_name*, *start_row*, *start_col*, *end_row*, *end_col* **[** , *mouse_button* **]);**

table_name The name of the table.

start_row The row name or an index number denoting the row which contains the cell before the drag operation is performed. The index number is preceded by #, for example #3.

start_col The column name or an index number denoting the column which contains the cell before the drag operation is performed. The index number is preceded by #, for example #2.

end_row The row name or an index number denoting the row which contains the cell after the drag operation is performed. The index number is preceded by #, for example #5.

end_col	The column name or an index number denoting the column which contains the cell after the drag operation is performed. The index number is preceded by #, for example #7.
mouse_button	The mouse button used to drag the cell (optional).

Note: WinRunner records this function only after the **set_aut_var** function is used to set the TABLE_RECORD_METHOD variable to ANALOG.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java Add-in support.

tbl_extend_col

Context Sensitive • Table

adds a column to the currently selected columns in a table.

tbl_extend_col (*table*, *column* **);**

table	The logical name of the table.
column	The column can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <Column_name> The column name, such as "Flight_Number". When the column name is specified, WinRunner takes the name from the database itself, and not from the application.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java Add-in support. It is supported for the JFC Java toolkit package.

---

tbl_extend_cols_range

Context Sensitive • Table

adds columns to the currently selected columns in a table.

tbl_extend_cols_range (*table*, *from_column*, *to_column* **);**

table	The logical name of the table.
from_column	The *from_column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <column_name> The column name, such as "Flight_Number". When a column name is specified, WinRunner takes the name from the database itself, and not from the application.
to_column	The *to_column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <column_name> The column name, such as "Flight_Number". When a column name is specified, WinRunner takes the name from the database itself, and not from the application.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java Add-in support. It is supported for the JFC Java toolkit package.

---

tbl_extend_row

Context Sensitive • Table

adds a row to the currently selected rows in a table.

tbl_extend_row (*table*, *row* **);**

table	The logical name of the table.
row	The *row* can either: **By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". **By content:** <row_name> The row name, such as "Flight_2".

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, and KLG.

tbl_extend_rows_range

Context Sensitive • Table

adds rows to the currently selected rows in a table.

tbl_extend_rows_range (*table*, *from_row*, *to_row* **);**

table	The logical name of the table.
from_row	The *from_row* can be either: **By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". **By content:** <row_name> The row name, such as "Flight_2".
to_row	The *to_row* can be either: **By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". **By content:** <row_name> The row name, such as "Flight_2".

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC and Visual Cafe.

tbl_get_cell_data

Context Sensitive • Table

retrieves the contents of the specified cell from a table.

tbl_get_cell_data (*table*, *row*, *column*, *out_text* **);**

table	The logical name of the table.
row	**By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". For WinRunner with PowerBuilder or Java, support, the *row* can also be in the following format: **By content:** <Column_name>=<column_content1 [column_contentn....]> The contents of one or more cells in the row, separated by semicolons and preceded by the name of the column in which they appear and an equal sign, such as "Flight_Number=306;From=LAX". The contents of all the cells specified must be present in order to specify the row. Choose this format to specify a row by the contents of cells in that row. If the contents of some cells appear in multiple rows, specify multiple cells whose contents will uniquely identify the row.
column	**By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <Column_name> The column name, such as "Flight_Number". When the column name is specified, WinRunner takes the name from the database itself, and not from the application.

out_text

For WinRunner with Oracle, Java, or WebTest support, *out_text* is the output variable that stores the string found in the specified cell.

For WinRunner with PowerBuilder support, *out_text* is the output variable that stores the string found in the specified cell; the actual string retrieved depends on the style of the cell, as follows:

DropDown: The name of the item selected.

Radio Button: The label of the selected radio button in the cell. (PowerBuilder only)

Edit: The contents of the cell.

EditMask: The contents of the cell.

Checkbox: Either "OFF" or "ON".

Note: The maximum table size supported by WinRunner is 327,680 bytes. If the table is larger than this, the value of the *out_text* parameter may be "!" or "Null".

Note for PowerBuilder, Java, and WebTest support users: When row is specified by content, column must also be specified by content.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available for WinRunner the Java Add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, EWT (Oracle), and KLG.

This function is supported for WebTest and for WinRunner with Oracle, PowerBuilder, or Siebel support.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_get_cols_count

Context Sensitive • Table

retrieves the number of columns in a table.

tbl_get_cols_count (*table*, *out_cols_count* **);**

table	The logical name of the table.
out_cols_count	The output variable that stores the total number of columns in the table.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, EWT (Oracle), and KLG.

This function is supported for WebTest and for WinRunner with Oracle, PowerBuilder, or Siebel support.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_get_column_name

Context Sensitive • Table

retrieves the column header name of the specified column in a table.

tbl_get_column_name (*table*, *col_index*, *out_col_name* **);**

table	The logical name of the table.
col_index	The numeric index of the column within the table, specified by an integer.
out_col_name	The parameter into which the retrieved name is stored.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, and KLG.

This function is supported for WebTest and for WinRunner with Siebel support.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_get_column_names

Context Sensitive • Table

retrieves the names and number of columns in a table.

tbl_get_column_names (*table*, *out_col_names*, *out_cols_count* **);**

table	The name of the table.
out_col_names	The output variable that stores the names of the columns in the table.
out_cols_count	The output variable that stores the total number of columns in the table.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is supported only for WinRunner with PowerBuilder support. The corresponding function for WinRunner without PowerBuilder support is **tbl_get_column_name.**

This function is not supported for WebTest.

tbl_get_rows_count

Context Sensitive • Table

retrieves the number of rows in the specified table.

tbl_get_rows_count (*table*, *out_rows_count* **);**

table	The logical name of the table.
out_rows_count	The output variable that stores the total number of rows in the table.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for PowerBuilder and Table Functions," on page 123.

Availability

This function is available for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, EWT (Oracle), and KLG.

This function is supported for WebTest and for WinRunner with Oracle, PowerBuilder or Siebel support.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_get_selected_cell

Context Sensitive • Table

returns the cell currently in focus in a table.

tbl_get_selected_cell (*table*, *out_row*, *out_column* **);**

table	The logical name of the table.
out_row	**By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". For WinRunner with PowerBuilder support, the *out_row* can also be in the following format: **By content:** <Column_name>=<column_content1 [column_contentn....]> The contents of one or more cells in the row, separated by semicolons and preceded by the name of the column in which they appear and an equal sign, such as "Flight_Number=306;From=LAX". The contents of all the cells specified must be present in order to specify the row. Choose this format to specify a row by the contents of cells in that row. If the contents of some cells appear in multiple rows, specify multiple cells whose contents will uniquely identify the row.
out_column	The output variable that stores the column name of the cell.

Note for PowerBuilder users: When *out_row* is specified **by content**, *out_column* must also be specified **by content**.

Note for Java add-in users: When using this function for Java tables, the row and column parameters are returned as numeric indexes (without the # character).

Notes: The column name is taken from the database itself and not from the application. If multiple cells are selected, WinRunner retrieves the row and column number of the first selected cell in the table.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for PowerBuilder and Table Functions," on page 123.

Availability

This function is available for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, EWT (Oracle), and KLG.

This function is supported for WebTest and for WinRunner with PowerBuilder, Oracle, or Siebel support.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_get_selected_row

Context Sensitive • Table

returns the row currently selected in a table.

tbl_get_selected_row (*table*, *row* **);**

table	The logical name of the table.
row	**By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". For WinRunner with PowerBuilder support, the *row* can also be in the following format: **By content:** <Column_name>=<column_content1 [column_contentn....]> The contents of one or more cells in the row, separated by semicolons and preceded by the name of the column in which they appear and an equal sign, such as "Flight_Number=306;From=LAX". The contents of all the cells specified must be present in order to specify the row. Choose this format to specify a row by the contents of cells in that row. If the contents of some cells appear in multiple rows, specify multiple cells whose contents will uniquely identify the row. For WinRunner with PowerBuilder support, *row* specifies the selected row following the row whose index is specified in the function.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, and KLG.

This function is supported for WinRunner with PowerBuilder, Oracle or Siebel support.

This function is not supported for WebTest.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_select_cells_range

Context Sensitive • Table

clicks the specified range of cells in a table.

tbl_select_cells_range (*table*, *start_row*, *start_col*, *end_row*, *end_col* **);**

table — The logical name of the table.

start_row — The *start_row* can be either:

By location: # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2".

By content: <row_name> The row name, such as "Flight_2".

start_col — The *start_column* can be either:

By location: # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2".

By content: <Column_name> The column name, such as "Flight_Number".

end_row The *end_row* can be either:

By location: # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2".

By content: <row_name> The row name, such as "Flight_2"

end_col The *end_column* can be either:

By location: # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2".

By content: <Column_name> The column name, such as "Flight_Number".

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java support. It is supported for the following Java toolkit packages: JFC and KLG

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tbl_select_col_header

Context Sensitive • Table

selects the specified column header of a table.

tbl_select_col_header (*table*, *column* **);**

table The logical name of the table.

column The *column* can be either:

By location: # <column_location> The location of the column within the table, specified by a string preceded by the character#, such as "#2".

By content: <Column_name> The column name, such as "Flight_Number".

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available for WinRunner with Siebel or Java add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, and KLG.

This function is not supported for WebTest.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_select_cols_range

Context Sensitive • Table

clicks the specified range of columns in a table.

tbl_select_cols_range (*table*, *from_column*, *to_column* **);**

table	The logical name of the table.
from_column	The *from_column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <column_name> The column name, such as "Flight_Number". When a column name is specified, WinRunner takes the name from the database itself, and not from the application.
to_column	The *to_column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <column_name> The column name, such as "Flight_Number". When a column name is specified, WinRunner takes the name from the database itself, and not from the application.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC and KLG.

tbl_select_rows_range

Context Sensitive • Table

selects the specified range of rows in a table.

tbl_select_rows_range (*table*, *from_row*, *to_row* **);**

table	The logical name of the table.
from_row	The *from_row* can be either: **By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". **By content:** <row_name> The row name, such as " Flight_2". When a row name is specified, WinRunner takes the name from the database itself, and not from the application.
to_row	The *to_row* can be either: **By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". **By content:** <row_name> The row name, such as " Flight_2". When a row name is specified, WinRunner takes the name from the database itself, and not from the application.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, and KLG.

tbl_set_cell_data

Context Sensitive • Table

sets the contents of a cell to the specified text in a table.

tbl_set_cell_data (*table*, *row*, *column*, *data* **);**

table	The logical name of the table.
row	**By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". For WinRunner with PowerBuilder, Java, or WebTest support, the *row* can also be in the following format: **By content:** <Column_name>=<column_content1 [column_contentn....]> The contents of one or more cells in the row, separated by semicolons and preceded by the name of the column in which they appear and an equal sign, such as "Flight_Number=306;From=LAX". The contents of all the cells specified must be present in order to specify the row. Choose this format to specify a row by the contents of cells in that row. If the contents of some cells appear in multiple rows, specify multiple cells whose contents will uniquely identify the row.
column	**By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <Column_name> The column name, such as "Flight_Number".

data

For WinRunner with Oracle, Java, or WebTest support, the *data* is a string denoting the contents to be entered into the specified cell.

For WinRunner with PowerBuilder support, data is a string denoting the contents to be entered into the specified cell; the nature of the string depends on the style of the cell, as follows:

DropDown DataWindow: The name of the item selected.

Radio Button: The label of the selected radio button in the cell.

Edit: The contents of the cell.

EditMask: The contents of the cell.

Checkbox: Either "OFF" or "ON".

Note for PowerBuilder users: When *row* is specified **by content**, *column* must also be specified **by content**.

When a column name is specified, WinRunner takes the name from the database itself and not from the application.

For a column with a DropDown DataWindow style, *data* can specify the contents of any of the columns, and not only the one that is displayed in the table. (See the example below.) For a column with a DropDown DataWindow or DropDown list style, the item can be a string denoting the row number of the cell, preceded by the character #.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, EWT (Oracle), and KLG.

This function is not supported for WebTest.

This function is supported for WinRunner with PowerBuilder, Oracle, or Siebel support.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_set_cell_focus

Context Sensitive • Table

sets the focus to the specified cell in a table.

tbl_set_cell_focus (*table*, *row*, *column* **);**

table The logical name of the table.

row The column can be either:

By location: # <row_location>

The location of the row within the table, specified by a string preceded by the character #, such as "#2".

By content: <column_name>=<column_content1 [column_contentn....]>

The contents of one or more cells in the row, separated by semicolons and preceded by the name of the column in which they appear and an equal sign, such as "Flight_Number=306;From=LAX". The contents of all the cells specified must be present in order to specify the row. Choose this format to specify a row by the contents of cells in that row. If the contents of some cells appear in multiple rows, specify multiple cells whose contents will uniquely identify the row. If the values match more then one row WinRunner refers to the first matching row.

column The column can be either:

By location: # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2".

By content: <column_name> The column name, such as "Flight_Number".

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is supported only for WinRunner with Siebel support.

tbl_set_selected_cell

Context Sensitive • Table

selects (clicks) the specified cell in a table.

tbl_set_selected_cell (*table*, *row*, *column* **);**

table	The logical name of the table.
row	**By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". For WinRunner with PowerBuilder support, the *row* can also be in the following format: **By content:** <Column_name>=<column_content1 [column_contentn....]> The contents of one or more cells in the row, separated by semicolons and preceded by the name of the column in which they appear and an equal sign, such as "Flight_Number=306;From=LAX". The contents of all the cells specified must be present in order to specify the row. Choose this format to specify a row by the contents of cells in that row. If the contents of some cells appear in multiple rows, specify multiple cells whose contents will uniquely identify the row.
column	**By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <Column_name> The column name, such as "Flight_Number". When a column name is specified, WinRunner takes the name from the database itself and not from the application.

Note for PowerBuilder users: When *row* is specified **by content**, *column* must also be specified **by content**.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, EWT (Oracle), and KLG.

This function is not supported for WebTest.

This function is supported for WinRunner with PowerBuilder, Oracle, or Siebel support.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
Sheridan Data Grid Control	SSDataWidgets.SSDBGridCtrl.1
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tbl_set_selected_col

Context Sensitive • Table

selects the specified column in a table.

tbl_set_selected_col (*table*, *column* **);**

table	The logical name of the table.
column	The *column* can be either: **By location:** # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2". **By content:** <Column_name> The column name, such as "Flight_Number". When a column name is specified, WinRunner takes the name from the database itself, and not from the application.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available only for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC and EWT (Oracle).

tbl_set_selected_row

Context Sensitive • Table

selects the specified row in a table.

tbl_set_selected_row (*table*, *row*);

table	The logical name of a table.
row	**By location:** # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". For WinRunner with PowerBuilder support, the *row* can also be in the following format: **By content:** <Column_name>=<column_content$_1$ [column_content$_n$....]> The contents of one or more cells in the row, separated by semicolons and preceded by the name of the column in which they appear and an equal sign, such as "Flight_Number=306;From=LAX". The contents of all the cells specified must be present in order to specify the row. Choose this format to specify a row by the contents of cells in that row. If the contents of some cells appear in multiple rows, specify multiple cells whose contents will uniquely identify the row.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for PowerBuilder and Table Functions,” on page 123.

Availability

This function is available for WinRunner with Java Add-in support. It is supported for the following Java toolkit packages: JFC, Visual Cafe, EWT (Oracle), and KLG.

This function is not supported for WebTest.

This function is supported for WinRunner with PowerBuilder, Oracle, or Siebel support.

This function is supported for the following ActiveX controls:

ActiveX Control	MSW_class
Data Bound Grid Control	MSDBGrid.DBGrid
FarPoint Spreadsheet Control	FPSpread.Spread.1
MicroHelp MH3d List Control	MHGLBX.Mh3dListCtrl.1
Microsoft Grid Control	MSGrid.Grid
True DBGrid Control	TrueDBGrid50.TDBGrid, TrueDBGrid60.TDBGrid, and TrueOleDBGrid60.TDBGrid

tddb_get_step_value

Standard • TestDirector

returns the value of a field in the "dessteps" table in a TestDirector project database.

tddb_get_step_value (*field*, *step_index* **[,** *td_path* **]);**

field	The logical name of the field.
step_index	The index of the step.
td_path	The TestDirector test path (optional argument - the default is the current test).

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

The **tddb_get_step_value** function is only available when WinRunner is connected to a TestDirector project database.

tddb_get_test_value

Standard • TestDirector

returns the value of a field in the "test" table in a TestDirector project database.

tddb_get_test_value (*field* **[,** *td_path* **]);**

field	The logical name of the field.
td_path	The TestDirector test path (optional argument - the default is the current test).

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

The **tddb_get_test_value** function is only available when WinRunner is connected to a TestDirector project database.

tddb_get_testset_value

Standard • TestDirector

returns the value of a field in the "testcycl" table in a TestDirector project database.

tddb_get_testset_value (*field* **[,** *td_path* **[,** *test_set* **]]);**

field	The logical name of the field.
td_path	The TestDirector test path (optional argument - the default is the current test).
test_set	The name of the test_set (optional argument - the default is the current TestSet).

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

The **tddb_load_attachment** function is only available when WinRunner is connected to a TestDirector project database.

tddb_load_attachment

Standard • TestDirector

downloads a test's file attachment to the local cache and returns the file system path of the local cache, to which the file is downloaded.

tddb_load_attachment (*attachment* [, *path*]);

attachment	The name of the file attachment.
path	The system path of the location from which the file is loaded. Note that if this path is not to the current test, it is ignored.

Return Values

This function returns the path to the local cache, to which the attached file is downloaded.

Availability

The **tddb_load_attachment** function is only available when WinRunner is connected to a TestDirector project database.

TE_add_screen_name_location

Context Sensitive • Terminal Emulator

adds a screen name location.

TE_add_screen_name_location (*x*, *y*, *length*);

x	The x-coordinate of the new area to search.
y	The y-coordinate of the new area to search.
length	The number of characters to the right of the Y position that WinRunner will search for a string.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_bms2gui

Context Sensitive • Terminal Emulator

teaches WinRunner the user interface from a BMS file.

TE_bms2gui (*bms_filename*, *gui_filename*, LEARN|RELEARN **);**

bms_filename	The full path of the BMS file containing the description of the application's user interface.
gui_file_name	The full path of the GUI map file into which the descriptions are learned. If no file name is given, the default is the temporary GUI map file of the test.
LEARN|RELEARN	Instructs WinRunner how to deal with name/description conflicts in the BMS file.

Return Values

This function has no return value.

Availability

This function is available for applications running on 3270 mainframes only.

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_check_text

Context Sensitive • Terminal Emulator

captures and compares the text in a terminal emulator window.

TE_check_text (*file_name* **[,** *start_column*, *start_row*, *end_column*, *end_row* **]);**

file_name	A string expression given by WinRunner that identifies the captured window.
start_column/row	The column/row at which the captured text begins.
end_column/row	The column/row at which the captured text ends.

Return Values

This function returns 0 if the function succeeds, -1, if it fails, and 1 if a mismatch is found; otherwise, it returns a standard value. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_create_filter

Context Sensitive • Terminal Emulator

creates a filter in the test database.

TE_create_filter (*filter_name*, *start_column*, *start_row*,
end_column, *end_row*, EXCLUDE|INCLUDE, *screen_name*);

filter_name	The filter name.
start_column/row	The column/row at which the filter starts.
end_column/row	The column/row at which the filter ends.
EXCLUDE/INCLUDE	The type of filter.
screen_name	The name of the screen to which you want to create the filter or ALL_SCREENS to create the filter for all screens in the application.

Return Values

This function returns 0 if the function succeeds; -1 in the case of an illegal number of parameters; 2 if the filter already exists; and 5 in case of an IO error. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_define_sync_keys

Context Sensitive • Terminal Emulator

sets keys that enable automatic synchronization in **type**, **win_type** and **obj_type** commands.

TE_define_sync_keys (*keys*, *string*, *mode* **[** , x_1, y_1, x_2, y_2 **]);**

keys	The keys that will enable automatic synchronization. Use a comma as the delimiter between keys.
string	The string that WinRunner waits for to appear or disappear on the screen.
mode	The waiting mode: SYNC_WHILE: WinRunner waits until the string disappears. SYNC_UNTIL: WinRunner waits until the string appears. SYNC_DEFAULT: WinRunner waits the default synchronization time used by the **TE_wait_sync** function.
x_1, y_1, x_2, y_2	Optional parameters that define a rectangle on the screen in which to search for the string. If these parameters are missing, the entire screen is used.

Return Values

This function always returns 0.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_delete_filter

Context Sensitive • Terminal Emulator

deletes a specified filter from the test database.

TE_delete_filter (*filter_name* **);**

filter_name	The filter to be deleted.

Return Values

This function returns 0 if the function succeeds; -1 in the case of an illegal number of parameters; 1 if the filter cannot be found in the database; and 5 in case of an IO error. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_edit_field

Context Sensitive • Terminal Emulator

inserts text into an unprotected field.

TE_edit_field (*field_logical_name*, *string* **[,** *x_shift* **]);**

field_logical_name	The logical name of the field into which the string is inserted.
string	The text to be inserted in the field.
x_shift	Indicates the offset of the insertion position from the first character in the field, in characters. If no offset is specified, the default is 0.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_edit_hidden_field

Context Sensitive • Terminal Emulator

inserts text into a hidden field.

TE_edit_hidden_field (*field_logical_name*, *coded_string* **);**

field_logical_name	The logical name of the field.
coded_string	A pointer to a coded string that WinRunner decodes and inserts into the field.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_edit_screen

Context Sensitive • Terminal Emulator

types a string in the specified location in a screen.

TE_edit_screen (*x*, *y*, *string* **);**

x,y	The screen coordinates at which the string is inserted.
string	The text to be written on the screen.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_find_text

Context Sensitive • Terminal Emulator

returns the location of a specified string

TE_find_text (*string*, *out_x_location*, *out_y_location* **[** , x_1, y_1, x_2, y_2 **]);**

string	The text that you want to locate.
out_x_location	The output variable that stores the x coordinate of the test string.
out_y_location	The output variable that stores the x coordinate of the test string.
x_1, y_1, x_2, y_2	Describe a rectangle that define the limits of the search area.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_force_send_key

Context Sensitive • Terminal Emulator

defines a key causing a screen to change.

TE_force_send_key (*in_screen*, *in_field* **[** , *in_key* **]);**

in_screen	The name of the screen containing the field.
in_field	The name of the field.
in_key	The name of the key causing the screen to change (optional). The key name can be a mnemonic (such as @E for Enter) or one of the WinRunner macros. See the **TE_send_key** function for details.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_active_filter

Context Sensitive • Terminal Emulator

returns the coordinates of a specified active filter.

TE_get_active_filter (*filter_num* **[** , *out_start_column*, *out_start_row*, *out_end_column*, *out_end_row* **]** , *screen_name* **);**

filter_num	The filter number representing the order in which filters were activated for the test, beginning with 0.
out_start_column	The output variable that stores the starting column of the filter.
out_start_row	The output variable that stores the starting row.
out_end_column	The output variable that stores the end column.
out_end_row	The output variable that stores the end row.

screen_name	The output variable that stores the name of the screen in which the active filter is located. If the filter appears on all screens in the application, the function returns ALL_SCREENS.

Return Values

This function returns 0 if the filter exists, -1 if there is an illegal number of parameters and 1 if the filter cannot be found in the database. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_auto_reset_filters

Context Sensitive • Terminal Emulator

indicates whether or not filters are automatically deactivated at the end of a test run.

TE_get_auto_reset_filters ( );

Return Values

This function returns ON to indicate that all filters are automatically deactivated at the end of a test run; OFF indicates that filters are not automatically deactivated. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_auto_verify

Context Sensitive • Terminal Emulator

indicates whether automatic text verification is on or off.

TE_get_auto_verify ( );

Return Values

This function returns ON if automatic text verification is active; OFF indicates that automatic text verification is not active. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_cursor_position

Context Sensitive • Terminal Emulator

returns the position of the cursor.

TE_get_cursor_position (*x*, *y*);

x,*y*	The current screen coordinates of the cursor.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_field_content

Context Sensitive • Terminal Emulator

returns the contents of a field to a variable.

TE_get_field_content (*field_name*, *content* **);**

field_name	The logical name of the field.
content	The output variable that stores the contents of the field as a string.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_filter

Context Sensitive • Terminal Emulator

returns the properties of a specified filter.

TE_get_filter (*filter_name* **[** , *out_start_column*, *out_start_row*, *out_end_column*, *out_end_row*, *out_type*, *out_active*, *screen_name* **]);**

filter_name	The name of the filter.
out_start_column	The output variable that stores the starting column of the filter.
out_start_row	The output variable that stores the starting row.
out_end_column	The output variable that stores the end column.
out_end_row	The output variable that stores the end row.
out_type	The output variable that stores the filter type (INCLUDE|EXCLUDE).

out_active	The output variable that stores the filter state.
screen_name	The variable that stores the screen name.

Return Values

This function returns 0 if the function succeeds; -1 if illegal parameters are used; 1 if a filter is not found; 2 if the parameter value is incorrect. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_merge_rule

Context Sensitive • Terminal Emulator

gets the rule for merging fields in a terminal emulator application.

TE_get_merge_rule (*from_field*, *to_field*, *rule* **);**

from_field	The logical name of the first field to be merged.
to_field	The logical name of the last field to be merged.
rule	The merging rule.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_refresh_time

Context Sensitive • Terminal Emulator

returns the time WinRunner waits for the screen to refresh.

TE_get_refresh_time ( );

Return Values

The return value of this function is an integer representing the refresh time. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_screen_name_location

Context Sensitive • Terminal Emulator

returns the screen name location.

TE_get_screen_name_location (*index*, *x*, *y*, *length* **);**

index	A number between 0 - 10. 0 indicates that the screen name location was set by the function TE_set_screen_name_location. 1 – 10 indicates that the screen name was added with the function TE_add_screen_name_location.
x,y	The screen coordinates where WinRunner locates the logical name of the screen name.
length	The number of characters to the right of the y position that WinRunner locates the screen name string. The default length is 30 (maximum).

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_sync_time

Context Sensitive • Terminal Emulator

returns the system synchronization time.

TE_get_sync_time ( );

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_text

Context Sensitive • Terminal Emulator

reads text from screen and stores it in a string.

TE_get_text (x_1, y_1, x_2, y_2 **);**

x_1, y_1, x_2, y_2	Describes a rectangle that encloses the text to be read. The pairs of coordinates can designate any two diagonally opposite corners of the rectangle.

Return Values

This function returns the text read from the screen. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_get_timeout

Context Sensitive • Terminal Emulator

returns the current synchronization time.

TE_get_timeout ( );

Return Values

The return value is the current value of the timeout. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_merge_fields

Context Sensitive • Terminal Emulator

sets the rule for merging fields in a terminal emulator application.

TE_merge_fields (*rule*);

rule	The merging rule.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_reset_all_filters

Context Sensitive • Terminal Emulator

deactivates all filters in a test.

TE_reset_all_filters ( );

Return Values

The return value of this function is always 0.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_reset_all_force_send_key

Context Sensitive • Terminal Emulator

deactivates the execution of **TE_force_send_key** functions.

TE_reset_all_force_send_key ( );

Return Values

This function always returns 0.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_reset_all_merged_fields

Context Sensitive • Terminal Emulator

deactivates the merging of fields in a Terminal Emulator application.

TE_reset_all_merged_fields ( );

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_reset_filter

Context Sensitive • Terminal Emulator

deactivates a specified filter.

TE_reset_filter (*filter_name* **);**

filter_name	Indicates the name of the filter to be deactivated.

Return Values

This function returns 0 if the function succeeds; -1 if illegal parameters are used; 1 if a filter is not found; 2 if the parameter value is incorrect. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_reset_screen_name_location

Context Sensitive • Terminal Emulator

Resets the screen name location to 0.

TE_reset_screen_name_location ( );

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_send_key

Context Sensitive • Terminal Emulator

sends to the mainframe the specified F-key function.

TE_send_key (*key*);

key	The F-key that is sent. The keys supported for this function are described in *the TSL Online Reference*.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_auto_reset_filters

Context Sensitive • Terminal Emulator

deactivates the automatic reset of filters when a test run is completed.

TE_set_auto_reset_filters (ON|OFF **);**

ON|OFF	ON indicates that upon completion of a test run, all filters are deactivated. OFF indicates that filters are not automatically deactivated. The default value is ON.

Return Values

This function returns 0 if it succeeds and -1 if it fails. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_auto_transaction

Context Sensitive • Terminal Emulator

defines a recorded **TE_wait_sync** statement as a transaction.

TE_set_auto_transaction (ON|OFF **);**

ON|OFF	ON activates set automatic transaction. OFF (the default) disables set automatic transaction is disabled.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_auto_verify

Context Sensitive • Terminal Emulator

activates/deactivates automatic text verification.

TE_set_auto_verify (ON|OFF **[,** x_1 **,**y_1 **,**x_2 **,**y_2 **[,** FIRST|LAST **]]);**

ON|OFF	Activates or deactivates automatic text verification during recording.
x_1, y_1, x_2, y_2	Describes a rectangle that encloses the text to be verified. The pairs of coordinates can designate any two diagonally opposite corners of the rectangle.
FIRST|LAST	An optional parameter indicating the partial check coordinates to use: FIRST indicates the first incidence of partial text capture in the script, LAST indicates the partial text immediately before the current statement.

Return Values

The return value of this function is always 0.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_BMS_name_tag

Context Sensitive • Terminal Emulator

allows you to change a name tag that appears in your BMS file.

TE_set_BMS_name_tag (*name* **);**

name	The name being set.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is available for applications running on 3270 mainframes only.

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_cursor_position

Context Sensitive • Terminal Emulator

defines the position of the cursor at the specified location on the screen of your mainframe application.

TE_set_cursor_position (*x*, *y* **);**

x,*y*	The current screen coordinates of the cursor.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_field

Context Sensitive • Terminal Emulator

specifies the field that will receive subsequent input.

TE_set_field (*field_logical_name* **[,** *x_offset* **]);**

field_logical_name	The name of the field.

x_offset	Indicates the offset of the insertion position from the first character in the field, in characters. If no offset is specified, the default is 0. The property byte is -1.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_filter

Context Sensitive • Terminal Emulator

creates and activates a filter.

**TE_set_filter (*filter_name* [, *start_column*, *start_row*, *end_column*, *end_row,*
EXCLUDE|INCLUDE, *screen_name*]);**

filter_name	The name of the filter.
start_column/row	The column/row at which the filter starts.
end_column/row	The column/row at which the filter ends.
EXCLUDE/INCLUDE	The type of filter.
screen_name	The name of the screen in which you want to set the filter or ALL_SCREENS to set the filter in all screens in the application.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_filter_mode

Context Sensitive • Terminal Emulator

specifies whether to assign filters to all screens or to the current screen.

TE_set_filter_mode (*mode* **);**

mode	The mode: ALL_SCREENS: assigns filters to all screens. CURRENT_SCREEN: assigns filters to the current screen (default).

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_record_method

Context Sensitive • Terminal Emulator

specifies the recording method for operations on terminal emulator objects.

TE_set_record_method (*method* **);**

method	This can be one of two constants: FIELD_METHOD (or 2), or POSITION_METHOD (or 1). FIELD_METHOD, the default, is full Context Sensitive recording. When POSITION_METHOD (partial Context Sensitive) is specified, keyboard and mouse input only is recorded for operations on objects in mainframe applications.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

For applications running on VT100, only POSITION_METHOD is available.

TE_set_refresh_time

Context Sensitive • Terminal Emulator

sets the interval that WinRunner waits for the screen to refresh.

TE_set_refresh_time (*time* **);**

time	The interval (in seconds) WinRunner waits for the screen to refresh. The default time is one second.

Return Values

This function always returns 0.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_screen_name_location

Context Sensitive • Terminal Emulator

resets the screen name location to 0 and then instructs WinRunner where to look for the logical name of a screen.

TE_set_screen_name_location (*x*, *y*, *length* **);**

x,y	The screen coordinates where WinRunner begins looking for the logical name of all screens in the test. The default location is 1,1.

length	The number of characters to the right of the y position that WinRunner will search for a string. The default length is 30 (maximum).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_sync_time

Context Sensitive • Terminal Emulator

defines the system synchronization time.

TE_set_sync_time (*time* **);**

time	The minimum number of seconds that WinRunner will wait for the host to respond in order to determine that synchronization has been achieved before continuing test execution.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_timeout

Context Sensitive • Terminal Emulator

sets the maximum time WinRunner waits for a response from the server.

TE_set_timeout (*timeout* **);**

timeout	The interval (in seconds) WinRunner waits for a response from the server before continuing test execution. The default timeout is 60 seconds.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_set_trailing

Context Sensitive • Terminal Emulator

Determines whether WinRunner types spaces and tabs in fields during test execution.

TE_set_trailing (*mode*, *field_length* **);**

mode	One of two modes can be specified. ON or OFF.
field_length	The field length affected by the trailing mode. For example, if the field length is 5, the trailing mode affects fall fields containing up to five spaces. Fields above the designated field length are not affected.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_user_attr_comment

Context Sensitive • Terminal Emulator

enables a user to add a user-defined comment property to the physical description of fields in the GUI map.

TE_user_attr_comment (*name*);

name	The name of the user-defined comment property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_user_reset_all_attr_comments

Context Sensitive • Terminal Emulator

Resets all user-defined comment properties.

TE_user_reset_all_attr_comments ( );

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118, and "Return Values for Terminal Emulator Functions," on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_wait_field

Context Sensitive • Terminal Emulator

waits for a specified string in a specified field to appear on screen.

TE_wait_field (*field_logical_name*, *content*, *timeout* **);**

field_logical_name	The logical name of the field.
content	The text string WinRunner waits for.
timeout	The number of seconds that WinRunner waits for the string to appear before continuing test execution.

Return Values

This function returns 0 if the string is found; 1 if the string is not found; -1 if the function fails. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_wait_string

Context Sensitive • Terminal Emulator

waits for a string to appear on screen.

TE_wait_string (*string* **[,** *start_column*, *start_row*, *end_column*, *end_row* **[,** *timeout* **]]);**

string	The text WinRunner waits for.
start_column/row	The starting column/row at which the text will be searched for.
end_column/row	The end column/row at which the text will be searched for.
timeout	The number of seconds that the interpreter waits for the string to appear before continuing test execution.

Return Values

This function returns 0 if the string is found; 1 if the string is not found; -1 if the function fails. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

TE_wait_sync

Context Sensitive • Terminal Emulator

instructs WinRunner to wait for the terminal emulator screen to be redrawn.

TE_wait_sync ( );

The **TE_wait_sync** function instructs WinRunner to wait, during execution, for the screen of the terminal emulator to be redrawn before continuing test execution.

Return Values

This function returns the actual time that the terminal emulator screen took to redraw. For more information, see “General Return Values,” on page 118, and “Return Values for Terminal Emulator Functions,” on page 124.

Availability

This function is supported for WinRunner EURO and WinRunner with Terminal Emulator Add-in support only.

It is superfluous for the VT100.

texit

Standard • Call Statement

stops execution of the current test.

texit ([*expression* **]);**

expression	The value that is returned to the call statement that invokes the called test.

Return Values

The texit statement is a keyword, not a function. It does not have a return value.

Availability

This statement is always available.

Note: The **texit** statement is not a function. Therefore, it does not appear in the Function Generator.

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time_str

Standard • Time-Related

converts the integer returned by the get_time function to a string.

time_str ([*expression* **]);**

expression	The value of this expression must be expressed in the format generated by **get_time** (the time expressed in the number of seconds that have elapsed since 00:00 GMT, January 1, 1970). If expression is not included (null), **time_str** converts the current value returned by **get_time**.

Return Values

This function returns a string in the format "Day Month Date Hour:Min:Sec Year."

Availability

This function is always available.

tl_step

Standard • Miscellaneous

divides a test script into sections and inserts a status message in the test results for the previous section.

tl_step (*step_name*, *status*, *description* **);**

step_name	the name of the test step.
status	sets whether the step passed or failed. Set to 0 for pass, or any other integer for failure.
description	a short explanation of the step.

The **tl_step** function divides test scripts into sections and determines whether each section passes or fails. When the test run is completed, you view the test results in the Test Results window. The report displays a result (pass/fail) for each step you defined.

When WinRunner is connected to a TestDirector project, the message is inserted in the TestDirector "step" table as well.

Return Values

This function returns 0 if the step passes. If the return value is not zero, the step fails.

Availability

This function is always available.

tl_step_once

Standard • Miscellaneous

divides a test script into sections and inserts a status message in the test results for the previous section.

tl_step_once (*step_name*, *status*, *description* **);**

step_name	the name of the test step.
status	sets whether the step passed or failed. Set to 0 for pass, or any other integer for failure.
description	a short explanation of the step.

The **tl_step_once** function divides test scripts into sections and determines whether each section passes or fails. When the test run is completed, you view the test results in the Test Results window. The report displays a result (pass/fail) for each step you defined.

When WinRunner is connected to a TestDirector project, the message is inserted in the TestDirector "step" table as well. Note that the message is inserted in the TestDirector "step" table once per *step_name*.

Return Values

This function returns 0 if the step passes. If the return value is not zero, the step fails.

Availability

This function is always available.

---

tolower

Standard • String

converts all uppercase characters in a string to lowercase.

tolower (*string* **);**

string	A string expression.

Return Values

This function returns a lower case string.

Availability

This function is always available.

toolbar_button_press

Context Sensitive • Toolbar Object

clicks on a toolbar button.

toolbar_button_press (*toolbar*, *button*, *mouse_button* **);**

toolbar	The logical name of the toolbar.
button	The button to press. This can be either the logical name or the numeric index of the button. The logical name reflects the button's attached text (tooltip). The index is specified as a string preceded by the character #. The first button in a toolbar is #0.
mouse_button	The name of the mouse button pressed when pressing the button in the toolbar. The names (Left, Right, Middle) are defined by the XR_INP_MKEYS system parameter in the system configuration file. This parameter is optional.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

toolbar_get_button

Context Sensitive • Toolbar Object

returns the name of toolbar button.

toolbar_get_button (*toolbar*, *button_num*, *out_text* **);**

toolbar	The logical name of the toolbar.
button_num	The numeric index of the button in the toolbar.
out_text	The output variable that stores the text.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

toolbar_get_buttons_count

Context Sensitive • Toolbar Object

returns the number of buttons in a toolbar.

toolbar_get_buttons_count (*toolbar*, *out_num* **);**

toolbar	The logical name of the toolbar.
out_num	The output variable that stores the number of buttons on the toolbar.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

toolbar_get_button_info

Context Sensitive • Toolbar Object

returns the value of a toolbar button property.

toolbar_get_button_info (*toolbar*, *button*, *property*, *out_value* **);**

toolbar	The logical name of the toolbar.
button	The logical name or the numeric index of the button. The logical name reflects the button's attached text (tooltip). The index is specified as a string preceded by the character #. The first button in a toolbar is #0.
property	Any of the properties listed in the "Configuring the GUI Map" in the *WinRunner User's Guide*.

out_value	The output variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

toolbar_get_button_num

Context Sensitive • Toolbar Object

returns the position of a toolbar button.

toolbar_get_button_num (*toolbar*, *button*, *out_num* **);**

toolbar	The logical name of the toolbar.
button	The logical name of the button. The logical name reflects the button's attached text. The index is specified as a string preceded by the character #. The first button in a toolbar is #0.
out_num	The output variable that stores the numeric position of the button on the toolbar. The first button is automatically number 0.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

toolbar_get_buttons_count

Context Sensitive • Toolbar Object

returns the number of buttons in a toolbar.

toolbar_get_buttons_count (*toolbar*, *out_num* **);**

toolbar	The logical name of the toolbar.
out_num	The output variable that stores the number of buttons on the toolbar.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

toolbar_select_item

Context Sensitive • Toolbar Object

selects an item from a menu-like toolbar, as in Microsoft Internet Explorer 4.0 or the Start menu in Windows 98.

toolbar_select_item (*toolbar*, *toolbar_item_chain* **[,** *mouse_button* **]);**

toolbar	The logical name of the toolbar containing the first item in **toolbar_item_chain**.
toolbar_item_chain	The chain of toolbar items separated by the TreeView separator (by default, a semi-colon). You can configure the separator in the General Options dialog box. If the item string is not available, then the item index will be recorded instead.
mouse_button	The name of the mouse button pressed when selecting the last item in **toolbar_item_path**. The names (Left, Right, Middle) are defined by the XR_INP_MKEYS system parameter in the system configuration file. This parameter is optional.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

toupper

Standard • String

converts all lowercase characters in a string to uppercase.

toupper (*string* **);**

string	A string expression.

Return Values

This function returns an uppercase string.

Availability

This function is always available.

---

treturn

Standard • Call Statements

stops a called test and returns control to the calling test.

treturn [(*expression* **)];**

expression	The value that is returned to the call statement invoking the called test. If no value is specified, then the return value of the call statement is 0.

The **treturn** statement is used when calling a test. This statement stops execution of the current test and returns control to the calling test. The **treturn** statement also provides a return value for the called test.

Note: The **treturn** statement is not a function. Therefore, it does not appear in the Function Generator.

Return Values

The **treturn** statement is a keyword, not a function, and does not have a return value.

Availability

This statement is always available.

Note: The **treturn** statement is not a function. Therefore, it does not appear in the Function Generator.

type

Analog • Input Device

specifies keyboard input.

type (*keyboard_input* **[,** *technical_id* **]);**

keyboard_input	A string expression that represents keystrokes.
technical_id	Points to timing and synchronization data. This parameter is only present when the **type** statement is generated during recording.

The **type** function depicts the keyboard input sent to the application under test. Keyboard input is evaluated to a string using the following conventions. The *TSL Online Reference* contains the conventions for evaluating keyboard input to a string.

Return Values

The return value of the function is always 0.

Availability

This function is always available.

unload

Standard • Compiled Module

removes a compiled module or selected functions from memory.

unload ([*module* | *test* **[,** *function_name* **]]);**

module | *test*	A string expression indicating the name of an existing compiled module or test.
function_name	A string expression indicating the name of an existing compiled function.

The unload function can remove an entire module from memory, or a selected function. When only a module or test name is specified, all functions within that module/test are removed.

If no arguments are specified, unload removes all compiled modules from memory.

A system module is generally a closed module that is "invisible" to the tester. It is not displayed when it is loaded, cannot be stepped into, and is not stopped by a pause command. A system module is not unloaded when you execute an unload statement with no parameters (global unload).

A user module is the opposite of a system module in these respects. Generally, a user module is one that is still being developed. In such a module you might want to make changes and compile them incrementally.

Note: If you make changes to a function in a loaded compiled module, you must unload and reload the compiled module in order for the changes to take effect.

Return Values

This function returns 0 for success, and 1 for failure.

Availability

This function is always available.

unload_16_dll

Standard • Miscellaneous

unloads a 16-bit DLL from memory.

unload_16_dll (*pathname* **);**

pathname	The full pathname of the Dynamic Link Library (DLL) to be unloaded.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

unload_dll

Standard • Miscellaneous

unloads a DLL from memory.

unload_dll (*pathname* **);**

pathname	The full pathname of the Dynamic Link Library (DLL) to be unloaded.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

unset_class_map

Context Sensitive • GUI Map Configuration

unbinds a custom class from a standard class.

unset_class_map (*custom_class* **);**

custom_class	The name of the custom class to unbind.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner and GUI Vusers running on PC platforms only.

user_data_point

Standard • Load Testing

records a user-defined data sample.

int **user_data_point (** *sample_name*, *value* **);**

sample_name	A string indicating the name of the sample type.
value	The value to record.

Return Values

This function returns 0 if it succeeds, and -1 if it fails to write the sampled data.

Availability

This function is available for LoadRunner GUI Vusers only.

vb_get_label_names

Context Sensitive • ActiveX/Visual Basic

retrieves the names of all label controls in the given form window. The names are stored as subscripts of an array.

vb_get_label_names (*window, name_array, count* **);**

window	The logical name of the Visual Basic form.
name_array	The out parameter containing the name of the storage array.
count	The out parameter containing the number of elements in the array.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available only for the Visual Basic add-in.

wait

Standard • Time-Related

pauses test execution.

wait (*seconds* **[,** *milliseconds* **]);**

seconds	The length of the pause, in seconds. The valid range of this parameter is from 0 to 32,767 seconds.
milliseconds	The number of milliseconds that are added to the *seconds*.

Return Values

The return value of the function is always 0.

Availability

This function is always available.

wait_window

Analog • Synchronization Functions

waits for a window bitmap to appear.

Note: This function is provided for backward compatibility only. The Context Sensitive versions of this function are **win_check_bitmap** and **obj_check_bitmap**. You should use these functions instead.

---

wait_window (*time*, *image*, *window*, *width*, *height*, *x*, *y* **[** , $relx_1$, $rely_1$, $relx_2$, $rely_2$ **]);**

time	The *time* is added to the *timeout_msec* testing option to give the maximum interval between the previous input even and the screen capture.
image	A string expression identifying the captured bitmap.
window	A string expression indicating the name in the window banner.
width, *height*	The size of the window, in pixels.
x, *y*	The position of the upper left corner of the window.
$relx_1$, $rely_1$	For an area bitmap: the coordinates of the upper left corner of the rectangle, relative to the upper left corner of the window, expressed in pixels (the *x* and *y* parameters).
$relx_2$, $rely_2$	For an area bitmap: the coordinates of the lower right corner of the rectangle, relative to the lower right corner of the window (the *x* and *y* parameters).

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

web_browser_invoke

Context Sensitive • Web

invokes the browser and opens a specified site.

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

browser	The name of browser (Microsoft Internet Explorer or Netscape).
site	The address of the site.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_cursor_to_image

Context Sensitive • Web

moves the cursor to an image on a page.

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

image	The logical name of the image.
x,*y*	The x- and y-coordinates of the mouse pointer when moved to an image, relative to the upper left corner of the image.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_cursor_to_label

Context Sensitive • Web

moves the cursor to a label on a page.

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

label	The name of the label.
x,y	The x- and y- coordinates of the mouse pointer when moved to a label, relative to the upper left corner of the label.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available for WebTest only.

web_cursor_to_link

Context Sensitive • Web

moves the cursor to a link on a page.

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

link	The name of the link.
x,y	The x- and y- coordinates of the mouse pointer when moved to a link, relative to the upper left corner of the link.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available for WebTest only.

web_cursor_to_obj

Context Sensitive • Web

moves the cursor to an object on a page.

web_cursor_to_obj (*object*, *x*, *y* **);**

object	The name of the object.
x,y	The x- and y-coordinates of the mouse pointer when moved to an object, relative to the upper left corner of the object.

The **web_cursor_to_obj** function moves the cursor to an object on a frame. The x- and y-coordinates of the mouse pointer when moved to an object are relative to the upper left corner of the object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

This function is available only when using Microsoft Internet Explorer.

web_event

Context Sensitive • Web

runs an event on the specified object.

web_event (*object*, *event_name* **[** , *x*, *y* **]);**

object	The logical name of the recorded object.
event_name	The name of an event handler. Use one of the following events: **blur:** An event occurs when an object loses focus, or when a window or a frame loses focus. **change:** An event occurs when a value of an object has been modified. **click:** An event occurs when an object is clicked.

	focus: An event occurs when an object receives focus by clicking the mouse or by tabbing with the keyboard. **mousedown:** An event occurs when the mouse button is clicked down. **mouseout:** An event occurs when the mouse pointer leaves an object from inside that object. **mouseover:** An event occurs when the mouse pointer moves over an object from outside that object. **mouseup:** An event occurs when the mouse button is released.
x,y	The x- and y-coordinates of the mouse pointer when moved to an object, relative to the upper left corner of the object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

---

web_file_browse

Context Sensitive • Web

clicks a browse button.

web_file_browse (*object*);

object	A file-type object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

This function is available only when using Microsoft Internet Explorer.

web_file_set

Context Sensitive • Web

sets the text value in a file-type object.

web_file_set (*object*, *value* **);**

object	A file-type object.
value	A text string.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

This function is available only when using Microsoft Internet Explorer.

web_find_text

Context Sensitive • Web

returns the location of text within a frame.

web_find_text (*frame*, *text_to_find*, *result_array* **[** , *text_before*, *text_after*, *index*, *show* **]);**

frame	The name of the frame.
text_to_find	The specified text string to locate.
result_array	The name of the output variable that stores the location of the string as a four-element array.
text_before	Defines the start of the search area for a particular text string.
text_after	Defines the end of the search area for a particular text string.
index	The occurrence number to locate. (The default parameter number is numbered 1.)

show	Indicates whether to highlight the location of the string. If TRUE (default parameter) is specified, the text location is highlighted. If FALSE is specified, the text location is not highlighted.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

---

web_frame_get_text

Context Sensitive • Web

retrieves the text content of a frame.

web_frame_get_text (*frame*, *out_text* **[** , *text_before*, *text_after*, *index* **]);**

frame	The name of the frame.
out_text	The captured text content.
text_before	Defines the start of the search area for a particular text string.
text_after	Defines the end of the search area for a particular text string.
index	The occurrence number to locate. (The default parameter number is numbered 1).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_frame_get_text_count

Context Sensitive • Web

returns the number of occurrences of a regular expression in a frame.

web_frame_get_text_count (*frame*, *regex_text_to_find*, *count* **);**

frame	The name of the frame.
regex_text_to_find	The specified regular expression to locate.
count	The output variable that stores the count number.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_frame_text_exists

Context Sensitive • Web

returns a text value if it is found in a frame.

web_frame_text_exists (*frame*, *text_to_find* **[** , *text_before*, *text_after* **]);**

frame	The name of the frame to search.
text_to_find	The string that is searched for.
text_before	Defines the start of the search area for a particular text string.
text_after	Defines the end of the search area for a particular text string.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_get_run_event_mode

Context Sensitive • Web

returns the current run mode.

web_get_run_event_mode (*out_mode* **);**

out_mode	The run mode in use. If the mode is FALSE (the default) the test runs by mouse operations. If TRUE is specified, the test runs by events.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_get_timeout

Context Sensitive • Web

returns the maximum time that WinRunner waits for response from the web.

web_get_timeout (*out_timeout* **);**

out_timeout	The maximum response interval in seconds.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_image_click

Context Sensitive • Web

clicks a hypergraphic link or an image.

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

image	The logical name of the image.
x,y	The x- and y-coordinates of the mouse pointer when clicked on a hypergraphic link or an image. The coordinates are relative to the upper left corner of the image.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_label_click

Context Sensitive • Web

clicks the specified label.

web_label_click (*label*);

label	The name of the label.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_link_click

Context Sensitive • Web

clicks a hypertext link.

web_link_click (*link* **);**

link	The name of link.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_link_valid

Context Sensitive • Web

checks whether a URL name of a link is valid (not broken).

web_link_valid (*name*, *valid* **);**

name	The logical name of a link.
valid	The status of the link may be valid (TRUE) or invalid (FALSE)

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_obj_click

Context Sensitive • Web

clicks an object in a frame.

web_obj_click (*object*, *x*, *y* **);**

object	The name of an object.
x,y	The x- and y-coordinates of the mouse pointer when clicked on an object. The coordinates are relative to the upper left corner of the object.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

This function is available only when using Microsoft Internet Explorer.

web_obj_get_child_item

Context Sensitive • Web

returns the description of the children in an object.

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

object	The name of object.
table_row	The row number in the table.
table_column	The column number in the table.
object_type	Specifies the object type.
index	Unique number assigned to the object.
out_object	The output variable that stores the description.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available for WebTest only.

---

web_obj_get_child_item_count

Context Sensitive • Web

function returns the count of the children in an object.

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

object	The name of object.
table_row	The row number in the table.
table_column	The column number in the table.
object_type	Specifies the object type.
object_count	The output variable that stores the object count number.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available for WebTest only.

web_obj_get_info

Context Sensitive • Web

returns the value of an object property.

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

object	The name of the object.
property_name	The name of the property (PARENT, SCR, TEXT, TYPE, URL).
property_value	The output variable that stores the value of the property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_obj_get_text

Context Sensitive • Web

returns a text string from an object.

web_obj_get_text (*object*, *table_row*, *table_column*, *out_text* **[** , *text_before*, *text_after*, *index* **]);**

object	The name of the object.
table_row	If the object is a table, it specifies the location of the row within a table. The string is preceded by the # character.
table_column	If the object is a table, it specifies the location of the column within a table. The string is preceded by the # character.
out_text	The output variable that stores the text string.
text_before	Defines the start of the search area for a particular text string.

text_after	Defines the end of the search area for a particular text string.
index	The occurrence number to locate. (The default parameter number is numbered 1).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

---

web_obj_get_text_count

Context Sensitive • Web

returns the number of occurrences of a regular expression in an object.

web_obj_get_text_count (*object*, *table_row*, *table_column*, *regex_text_to_find*, *count* **);**

object	The name of the object.
table_row	If the object is a table, it specifies the location of the row within a table. The string is preceded by the character #.
table_column	If the object is a table, it specifies the location of the column within a table. The string is preceded by the character #.
regex_text_to_find	The specified regular expression to locate.
count	The output variable that stores the count number.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_obj_text_exists

Context Sensitive • Web

returns a text value if it is found in an object.

web_obj_text_exists (*object*, *table_row*, *table_column*, *text_to_find* **[** , *text_before*, *text_after* **]);**

object	The name of the object to search.
table_row	If the object is a table, it specifies the location of the row within a table. The string is preceded by the character #.
table_column	If the object is a table, it specifies the location of the column within a table. The string is preceded by the character #.
text_to_find	The string that is searched for.
text_before	Defines the start of the search area for a particular text string.
text_after	Defines the end of the search area for a particular text string.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available for WebTest only.

web_password_encrypt

Context Sensitive • Web

encrypts a password on a Web page.

web_password_encrypt (*password* **);**

password	The password on the Web page.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is available for WebTest only.

web_refresh

Context Sensitive • Web

resets WinRunner's connection to the specified frame.

web_refresh (*frame*);

frame The logical name of the frame.

Tip: Call this function when the frame changes dynamically and WinRunner does not capture the change.

Note: This function is not recordable.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_restore_event_default

Context Sensitive • Web

resets all events to their default settings.

web_restore_event_default ( );

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_set_event

Context Sensitive • Web

sets the event status.

web_set_event (*class*, *event_name*, *event_type*, *event_status* **);**

class	The MSW class of the object.
event_name	The name of an event handler. Use one of the following: **blur:** An event occurs when an object loses focus, or when a window or a frame loses focus. **change:** An event occurs when a value of an object has been modified. **click:** An event occurs when an object is clicked. **focus:** An event occurs when an object receives focus by clicking the mouse or by tabbing with the keyboard. **mousedown:** An event occurs when the mouse button is clicked down. **mouseout:** An event occurs when the mouse pointer leaves an object from inside that object. **mouseover:** An event occurs when the mouse pointer moves over an object from outside that object. **mouseup:** An event occurs when the mouse button is released.
event_type	The name of an event type. Use one of the following: **ANYCASE:** Connects to the event in any case. **BEHAVIOR:** Connects to an event only when the behavior is associated with the object class. **HANDLER:** Connects to an event only when the handler exists in the HTML script. **BEHAVIOR_OR_HANDLER:** Connects to an event only when the handler exists in the HTML script, or when the behavior is associated with the object class.

event_status — The name of an event status. Use one of the following:

ENABLE: The event is recordable.

DISABLE: Disables the recordable event for an object class, but the information is saved in the configuration file of recordable events.

DELETE: Disables the recordable event for an object class, and removes the information from the configuration file of recordable events.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

---

web_set_run_event_mode

Context Sensitive • Web

sets the event run mode.

web_set_run_event_mode (*mode* **);**

mode — The event run mode can be set to TRUE or FALSE. If set to FALSE, the test runs by mouse operations. If set to TRUE, the test runs by events.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_set_timeout

Context Sensitive • Web

sets the maximum time WinRunner waits for a response from the Web.

web_set_timeout (*timeout* **);**

timeout	The maximum interval in seconds.

The **web_set_timeout** function sets the maximum time WinRunner waits for a response from the web.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_set_tooltip_color

Context Sensitive • Web

sets the colors of the WebTest ToolTip.

web_set_tooltip_color (*fg_color*, *bg_color* **);**

fg_color	A hexadecimal number denoting a color value of the foreground color. Default color is set to black.
bg_color	A hexadecimal number denoting a color value of the background color. Default color is set to aqua.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_sync

Context Sensitive • Web

waits for the navigation of a frame to be completed.

web_sync (*timeout* **);**

time	The maximum interval in seconds.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

web_tbl_get_cell_data

Context Sensitive • Web

retrieves the contents of the specified cell from a Web table, starting from the specified character.

web_tbl_get_cell_data (*table, row, column, starting_pos, out_text, out_actual_text_length* **);**

table	The logical name of the table.
row	By location: # <row_location> The location of the row within the table, specified by a string preceded by the character #, such as "#2". The row can also be in the following format:
column	By location: # <column_location> The location of the column within the table, specified by a string preceded by the character #, such as "#2".
starting_pos	The index of the character in the cell from which WinRunner starts retrieving the text string.

out_text	The output variable that stores the string found in the specified cell.
out_actual_text_length	The actual length of the text string in the table. Note that this length cannot exceed 1023 characters.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

---

web_url_valid

Context Sensitive • Web

checks whether a URL is valid.

web_url_valid (*URL*, *valid* **);**

URL	Address of a link.
valid	The status of the link may be valid (TRUE) or invalid (FALSE).

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WebTest only.

win_activate

Context Sensitive • Window Object

activates a window.

win_activate (*window* **);**

window	The logical name of the window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available in WinRunner only.

win_check_bitmap

Context Sensitive • Window Object

compares a window bitmap to an expected bitmap.

win_check_bitmap (*window*, *bitmap*, *time* **[** , *x*, *y*, *width*, *height* **]);**

window	The logical name of the window.
bitmap	A string expression that identifies the captured bitmap.
time	The interval marking the maximum delay between the previous input event and the capture of the current bitmap, in seconds. This interval is added to the *timeout_msec* testing option.
x, *y*	For an area bitmap: the coordinates or the upper left corner, relative to the window in which the selected area is located.
width, *height*	For an area bitmap: the size of the selected area, in pixels.

The analog version of **win_check_bitmap** is **check_window**.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

win_check_gui

Context Sensitive • Window Object

compares current GUI data to expected GUI data for a window.

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

window	The logical name of the window.
checklist	The name of the checklist specifying the checks to perform.
expected_results_file	The name of the file storing the expected GUI data.
time	The *time* is added to the *timeout_msec* testing option to give the maximum interval between the previous input even and the screen capture.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_check_info

Context Sensitive • Window Object

checks the requested window property.

win_check_info (*window*, *property*, *property_value* **);**

window	The logical name of the window.
property	The property to check.
property_value	The expected value of the property.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_click_help

Context Sensitive • Window Object

clicks the help button in a window title bar.

win_click_help (*window* **);**

window	The logical name of the window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_click_on_text

Context Sensitive • Window Object

searches for text in a window.

win_click_on_text (*window***,** *string* **[,***search_area* **[,** *string_def* **[,** *mouse_button* **]]]);**

window	The logical name of the window.
string	The text to locate. To specify a literal, case sensitive string, enclose the string in quotation marks. Alternatively, you can specify the name of a string variable. The value of the string variable can include a regular expression (the regular expression need not begin with an exclamation mark).
search_area	The region of the object to search, relative to the window. This area is defined as a pair of coordinates, with x1,y1,x2,y2 specifying any two diagonally opposite corners of the rectangular search region. If this parameter is not defined, then the entire window specified is considered the search area.
string_def	Defines how the text search is performed. If no *string_def* is specified, (0 or FALSE, the default parameter), the interpreter searches for a complete word only. If 1, or TRUE, is specified, the search is not restricted to a single, complete word.
mouse_button	Specifies the mouse button that clicks on the text string. The value can be LEFT, MIDDLE, or RIGHT. If no button is specified, the default is the left button.

The analog version of this function is **click_on_text**.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

win_close

Context Sensitive • Window Object

closes a window.

win_close (*window* **);**

window	The logical name of the window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_drag

Context Sensitive • Window Object

drags an object from a source window.

win_drag (*source_window*, *x*, *y* **[,** *mouse_button* **]);**

source_window	The logical name of the window.
x,y	The coordinates of the mouse pointer when clicked on the source window, relative to the upper left corner of the client area of the source window expressed in pixels.
mouse_button	A constant that specifies the mouse button to hold down while dragging. The value can be LEFT, MIDDLE, or RIGHT. If no button is specified, the default is the button that performs the select function.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_drop

Context Sensitive • Window Object

drops an object onto a target window.

win_drop (*target_window*, *x*, *y* **);**

target_window	The logical name of the window.
x,y	The coordinates of the mouse pointer when released over the target window, relative to the upper left corner of the client area of the target window, expressed in pixels.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_exists

Context Sensitive • Window Object

checks whether a window is displayed on the screen.

win_exists (*window* **[,** *time* **]);**

window	The logical name of the window.
time	The amount of time (in seconds) that is added to the default timeout setting (specified with the *timeout_msec* testing option), yielding a new maximum wait time before the subsequent statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_find_text

Context Sensitive • Window Object

returns the location of a string within a window.

win_find_text (*window*, *string*, *result_array* **[,** *search_area* **[,** *string_def* **]]);**

window	The logical name of the window to search.
string	The text to locate. To specify a literal, case sensitive string, enclose the string in quotation marks. Alternatively, you can specify the name of a string variable. The value of the string variable can include a regular expression. The regular expression should not include an exclamation mark (!), however, which is treated as a literal character.
result_array	The name of the output variable that stores the location of the string as a four-element array.
search_area	The region of the object to search, relative to the window. This area is defined as a pair of coordinates, with x1,y1,x2,y2 specifying any two diagonally opposite corners of the rectangular search region. If this parameter is not defined, then the entire *window* is considered the search area.
string_def	Defines how the text search is performed. If no *string_def* is specified, (0 or FALSE, the default parameter), the interpreter searches for a complete word only. If 1, or TRUE, is specified, the search is not restricted to a single, complete word.

The Analog version of this function is **find_text**.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

win_get_desc

Context Sensitive • Window Object

returns the physical description of a window.

win_get_desc (*window*, *obligatory*, *optional*, *selector*, *out_desc* **);**

window	The logical name of the window.
obligatory	The list of obligatory properties (separated by spaces).
optional	The list of optional properties (separated by spaces).
selector	The type of selector used for this object class (location or index).
out_desc	The output variable that stores the description of the window.

Return Values

This function returns the value 0 if it succeeds and -1 if it fails. If obligatory, optional, and selector are null strings, **win_get_desc** returns the current learning configuration for the object

Availability

This function is always available.

win_get_info

Context Sensitive • Window Object

returns the value of a window property.

win_get_info (*window*, *property*, *out_value* **);**

window	The logical name of the window.
property	Any of the properties listed in the User's Guide.
out_value	The variable that stores the value of the specified property.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

---

win_get_text

Context Sensitive • Window Object

reads text from the indicated area of a window.

win_get_text (*window*, *out_text* **[** , x_1, y_1, x_2, y_2 **]);**

window	The window from which text is read.
out_text	The output variable that holds the captured text.
x_1,y_1,x_2,y_2	An optional parameter that defines the location from which to read text relative to the specified window in pixels. The coordinate pairs can designate any two diagonally opposite corners of a rectangle. The interpreter searches for the text in the area defined by the rectangle.

The Analog version of this function is **get_text**.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

win_highlight

Context Sensitive • Window Object

highlights the specified window.

win_highlight (*window* **[,** *flashes* **]);**

window	The logical name of the window.
flashes	The number of times the window flashes on screen.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_max

Context Sensitive • Window Object

maximizes a window to fill the entire screen.

win_max (*window* **);**

window	The logical name of the window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner and LoadRunner GUI Vusers running on PC platforms only.

win_min

Context Sensitive • Window Object

minimizes a window to an icon.

win_min (*window*);

window	the logical name of the window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is available for WinRunner and LoadRunner GUI Vusers running on PC platforms only.

win_mouse_click

Context Sensitive • Window Object

performs a mouse click within a window.

win_mouse_click (*window*, *x*, *y* [, *mouse_button* [, *modifier*]]);

window	The logical name of the window.
x, *y*	The position of the mouse click expressed as x and y (pixel) coordinates. Coordinates are relative to the upper left corner of the client area of the window, and not to the screen.
mouse_button	A constant specifying the mouse button to click. The value can be LEFT, MIDDLE, or RIGHT. If no *mouse_button* is specified, the default is the button performing the select function.
modifier	A constant specifying the modifier key used with the mouse button. The value can be CONTROL, SHIFT, or CONTROL_SHIFT.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

---

win_mouse_dbl_click

Context Sensitive • Window Object

performs a double-click within a window.

win_mouse_dbl_click (*window*, *x*, *y* **[,** *mouse_button* **[,** *modifier* **]]);**

window	The logical name of the window.
x, *y*	The position of the double-click expressed as x and y (pixel) coordinates. Coordinates are relative to the upper left corner of the client area of the window, and not to the screen.
mouse_button	A constant specifying the mouse button to click. The value can be LEFT, MIDDLE, or RIGHT. If no *mouse_button* is specified, the default is the button performing the select function.
modifier	A constant specifying the modifier key used with the mouse button. The value can be CONTROL, SHIFT, or CONTROL_SHIFT.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_mouse_drag

Context Sensitive • Window Object

performs a mouse drag within a window.

win_mouse_drag (*window*, *start_x*, *start_y*, *end_x*, *end_y* **[,** *mouse_button* **[,***modifier* **]]);**

window	The logical name of the window.
start_x, *start_y*	The x- and y-coordinates of the start point of the mouse drag in pixels. Coordinates are relative to the upper left corner of the client area of the window, and not to the screen.
end_x, *end_y*	The x- and y-coordinates of the end point of the mouse drag in pixels. Coordinates are relative to the upper left corner of the client area of the window, and not to the screen.
mouse_button	A constant specifying the mouse button to click (LEFT, MIDDLE, RIGHT). If no *mouse_button* is specified, the default is the one performing the selection.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_mouse_move

Context Sensitive • Window Object

moves the mouse pointer to the designated position within a window.

win_mouse_move (*window*, *x*, *y* **);**

window	The logical name of the window.
x, *y*	The position of the mouse pointer, expressed as x and y (pixel) coordinates. The coordinates are relative to the upper left corner of the client area of the window, and not to the screen.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_move

Context Sensitive • Window Object

moves a window to a new absolute location.

win_move (*window*, *x*, *y* **);**

window	The logical name of the window.
x, *y*	The *x* and *y* coordinates are relative to the upper left corner of the screen.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_move_locator_text

Context Sensitive • Window Object

moves the mouse pointer to a string in a window.

win_move_locator_text (*window*, *string* **[,** *search_area* **[,***s tring_def* **]]);**

window	The logical name of the window.
string	The text to locate. To specify a literal, case sensitive string, enclose the string in quotation marks. Alternatively, you can specify the name of a string variable. The value of the string variable can include a regular expression (the regular expression need not begin with an exclamation mark).
search_area	The region of the object to search, relative to the window. This area is defined as a pair of coordinates, with x1,y1,x2,y2 specifying any two diagonally opposite corners of the rectangular search region. If this parameter is not defined, then the entire window specified is considered the search area.
string_def	Defines how the text search is performed. If no *string_def* is specified, (0 or FALSE, the default parameter), the interpreter searches for a complete word only. If 1, or TRUE, is specified, the search is not restricted to a single, complete word.

The Analog version of this function is **move_locator_text**.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

win_open

Context Sensitive • Window Object

opens an application window.

win_open (*window* **);**

window	the logical name of the window.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

win_resize

Context Sensitive • Window Object

resizes a window.

win_resize (*window*, *width*, *height* **);**

window	The logical name of the window.
width	The new width of the window, in pixels.
height	The new height of the window, in pixels.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

win_restore

Context Sensitive • Window Object

restores a window to its previous size.

win_restore (*window* **);**

window	The logical name of the window.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_type

Context Sensitive • Window Object

sends keyboard input to a window.

win_type (*window, keyboard_input* **);**

window	The logical name of the window.
keyboard_input	A string expression that represents keystrokes.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

win_wait_bitmap

Context Sensitive • Window Object

waits for a window bitmap.

Note: This function is provided for backward compatibility only. You should use the **win_check_bitmap** and **obj_check_bitmap** functions instead of this function.

---

win_wait_bitmap (*window*, *bitmap*, *time* **[** , *x*, *y*, *width*, *height* **]);**

window	The logical name of the window.
bitmap	A string expression identifying the captured bitmap.
time	The *time* is added to the *timeout_msec* testing option to give the maximum interval between the previous input even and the screen capture.
x, *y*	For an area bitmap: the coordinates of the upper left corner, relative to the window in which the selected region is located in pixels.
width, *height*	For an area bitmap: the size of the selected region, in pixels.

For an Analog version of the **win_wait_bitmap**, see **wait_window**.

Return Values

This function returns one of a list of return values. For more information, see “General Return Values,” on page 118.

Availability

This function is always available.

win_wait_info

Context Sensitive • Window Object

waits for the value of a window property.

win_wait_info (*window*, *property*, *value*, *time* **);**

window	The logical name of the window.
property	Any of the properties listed in the *User's Guide*.
value	The property value for which the function waits.
time	The interval, in seconds, before the next statement is executed.

Return Values

This function returns one of a list of return values. For more information, see "General Return Values," on page 118.

Availability

This function is always available.

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Mercury Interactive Corporation
1325 Borregas Avenue
Sunnyvale, CA 94089 USA

Main Telephone: (408) 822-5200
Sales & Information: (800) TEST-911
Customer Support: (877) TEST-HLP
Fax: (408) 822-5300

Home Page: www.mercuryinteractive.com
Customer Support: support.mercuryinteractive.com