

Simulink[®] Test[™]

Reference



MATLAB[®]&SIMULINK[®]

R2017a



How to Contact MathWorks



Latest news: www.mathworks.com
Sales and services: www.mathworks.com/sales_and_services
User community: www.mathworks.com/matlabcentral
Technical support: www.mathworks.com/support/contact_us



Phone: 508-647-7000



The MathWorks, Inc.
3 Apple Hill Drive
Natick, MA 01760-2098

Simulink[®] Test[™] Reference

© COPYRIGHT 2015–2017 by The MathWorks, Inc.

The software described in this document is furnished under a license agreement. The software may be used or copied only under the terms of the license agreement. No part of this manual may be photocopied or reproduced in any form without prior written consent from The MathWorks, Inc.

FEDERAL ACQUISITION: This provision applies to all acquisitions of the Program and Documentation by, for, or through the federal government of the United States. By accepting delivery of the Program or Documentation, the government hereby agrees that this software or documentation qualifies as commercial computer software or commercial computer software documentation as such terms are used or defined in FAR 12.212, DFARS Part 227.72, and DFARS 252.227-7014. Accordingly, the terms and conditions of this Agreement and only those rights specified in this Agreement, shall pertain to and govern the use, modification, reproduction, release, performance, display, and disclosure of the Program and Documentation by the federal government (or other entity acquiring for or through the federal government) and shall supersede any conflicting contractual terms or conditions. If this License fails to meet the government's needs or is inconsistent in any respect with federal procurement law, the government agrees to return the Program and Documentation, unused, to The MathWorks, Inc.

Trademarks

MATLAB and Simulink are registered trademarks of The MathWorks, Inc. See www.mathworks.com/trademarks for a list of additional trademarks. Other product or brand names may be trademarks or registered trademarks of their respective holders.

Patents

MathWorks products are protected by one or more U.S. patents. Please see www.mathworks.com/patents for more information.

Revision History

March 2015	Online Only	New for Version 1.0 (Release 2015a)
September 2015	Online Only	Revised for Version 1.1 (Release 2015b)
October 2015	Online only	Rereleased for Version 1.0.1 (Release 2015aSP1)
March 2016	Online Only	Revised for Version 2.0 (Release 2016a)
September 2016	Online Only	Revised for Version 2.1 (Release 2016b)
March 2017	Online Only	Revised for Version 2.2 (Release 2017a)

1 | Functions — Alphabetical List

2 | Classes — Alphabetical List

3 | Methods — Alphabetical List

4 | Blocks — Alphabetical List

Functions — Alphabetical List

disp

Display results of `sltest.AssessmentSet` or `sltest.Assessment`

Syntax

```
disp(as)
```

Description

`disp(as)` displays the results of the assessment object `as`.

Examples

Display results of an assessment

Display the results of the assessment `as`, where `as` is an `sltest.Assessment`.

```
disp(as)
```

```
sltest.Assessment
Package: sltest

Properties:
  Name: 'Simulink:verify_high'
  BlockPath: [1×1 Simulink.SimulationData.BlockPath]
  Values: [1×1 timeseries]
  Result: Fail
```

Input Arguments

as — Assessment object

```
sltest.Assessment | sltest.AssessmentSet
```

Assessment object for which to display results.

Example: as

See Also

See Also

`sltest.Assessment` | `sltest.AssessmentSet` | `sltest.getAssessments`

find

Find assessments in `sltest.AssessmentSet` or `sltest.Assessment` object

Syntax

```
asout = find(as, 'PropertyName', 'PropertyValue')
asout = find(as, 'PropertyName1', 'PropertyValue1', '-logical',
'PropertyName2', 'PropertyValue2' ...)
asout = find(as, '-regexp', 'PropertyName', 'PropertyValue')
```

Description

`asout = find(as, 'PropertyName', 'PropertyValue')` returns the results `asout` specified by the properties matching `'PropertyName'`, and `'PropertyValue'`.

`asout = find(as, 'PropertyName1', 'PropertyValue1', '-logical', 'PropertyName2', 'PropertyValue2' ...)` returns the results `asout` specified by multiple `'PropertyName'`, `'PropertyValue'` pairs, and the `'-logical'` operator specifying the connective between the pairs. `'-logical'` can be `'-and'` or `'-or'`.

`asout = find(as, '-regexp', 'PropertyName', 'PropertyValue')` returns assessment results whose `'PropertyName'` matches the regular expression `'PropertyValue'`. When using regular expression search, `'PropertyName'` can be the assessment object `'Name'` or `'BlockPath'`.

Examples

Get Assessments from a Simulation

This example shows how to simulate a model with `verify` statements and obtain assessment results via the programmatic interface.

Get the Assessment Set and One Assessment Result

1. Open the model.

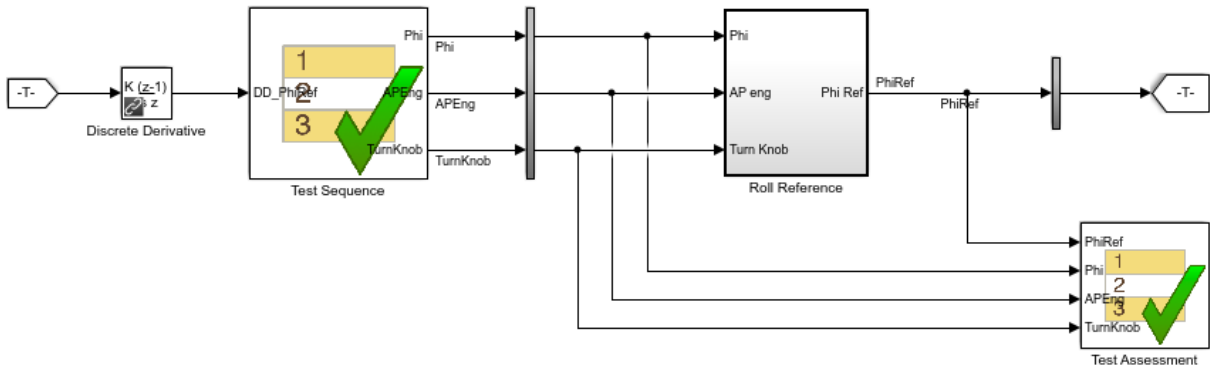
```
open_system(fullfile(matlabroot, 'examples', 'simulinktest', 'sltestRollRefTestExample.sl'))
```



```
% Turn the command line warning off for verify() statements
warning off Stateflow:Runtime:TestVerificationFailed
```

This model is used to show how verify() statements work in Test Sequence and Test Assessment blocks.
The Roll Reference subsystem is a copy of a component of a larger model.
To view the larger model, enter RollAutopilotMdlRef in MATLAB(R).

Copyright 2016 The MathWorks, Inc



2. Run the model.

```
s = sim('sltestRollRefTestExample');
```

3. Get the assessment set.

```
as = sltest.getAssessments('sltestRollRefTestExample');
```

4. Get assessment 3 from the assessment set.

```
as3 = get(as,3);
```

Display Results of the Assessment Set and Assessment Result

1. Get summary of the assessment set.

```
asSummary = getSummary(as)
```

```
asSummary =  
  
    struct with fields:  
  
        Total: 6  
        Untested: 3  
        Passed: 2  
        Failed: 1  
        Result: Fail
```

2. Display the result of assessment 3.

```
disp(as3)
```

```
sltest.Assessment  
Package: sltest  
  
Properties:  
    Name: 'Simulink:verify_high'  
    BlockPath: [1×1 Simulink.SimulationData.BlockPath]  
    Values: [1×1 timeseries]  
    Result: Fail
```

3. Find untested or failed results in the assessment set.

```
asFailUntested = find(as, 'Result', slTestResult.Fail, '-or', 'Result', slTestResult.Untested)
```

```
asFailUntested =  
  
sltest.AssessmentSet  
Summary:  
    Total: 4  
    Untested: 3  
    Passed: 0  
    Failed: 1  
    Result: Fail  
  
Untested Assessments (first 10):  
    2 : Untested 'Simulink:verify_high'  
    3 : Untested 'Simulink:verifyTKLow'  
    4 : Untested 'Simulink:verifyTKNormal'
```

```
Failed Assessments (first 10):
  1 : Fail 'Simulink:verify_high'
```

4. Find assessments under the Test Assessment block, using a regular expression.

```
assessBlock = find(as, '-regexp', 'BlockPath', '[Aa]ssess')
```

```
assessBlock =
```

```
sltest.AssessmentSet
Summary:
  Total: 6
  Untested: 3
  Passed: 2
  Failed: 1
  Result: Fail
```

```
Untested Assessments (first 10):
  4 : Untested 'Simulink:verify_high'
  5 : Untested 'Simulink:verifyTKLow'
  6 : Untested 'Simulink:verifyTKNormal'
```

```
Passed Assessments (first 10):
  1 : Pass 'Simulink:verify_normal'
  2 : Pass 'Simulink:verify_low'
```

```
Failed Assessments (first 10):
  3 : Fail 'Simulink:verify_high'
```

Input Arguments

as — Assessment object

sltest.Assessment | sltest.AssessmentSet

Assessment object to search.

Example: as

'-logical' — Logical operator

'-and' | '-or'

Logical operator connecting multiple property names or property values.

Example: `'-and'`

'PropertyName' — Type of property to search

`'Name'` | `'Result'` | `'BlockPath'`

Type of property to search.

Example: `'BlockPath'`

'PropertyValue' — Property value to search

`character vector` | `slTestResult` enumeration

Property value to search, specified as a character vector. Can be a regular expression when using the `'-regexp'` argument.

When using the `'Result'` property name, `'PropertyValue'` is an enumeration of the assessment result:

- `slTestResult.Fail` for failed assessments
- `slTestResult.Pass` for passed assessments
- `slTestResult.Untested` for untested assessments

Example: `slTestResult.Fail`

Example: `'[Aa]sess'`

'-regexp' — Command to search using regular expression

`character vector`

Regular expression for `BlockPath` properties search, specified as a character vector.

Example: `'-regexp'`

Output Arguments

asout — Assessment results output

`sltest.assessmentSet` object

Assessment results output from the find operation, specified as an `sltest.assessmentSet` object.

Example: `sltest.AssessmentSet`

See Also

See Also

`sltest.Assessment` | `sltest.AssessmentSet` | `sltest.getAssessments`

get

Get assessment of `sltest.AssessmentSet`

Syntax

```
indexResult = get(as,index)
```

Description

`indexResult = get(as,index)` gets the individual assessment result `indexResult` from the `sltest.AssessmentSet` `as`, specified by the integer `index`.

Examples

Get Assessments from a Simulation

This example shows how to simulate a model with `verify` statements and obtain assessment results via the programmatic interface.

Get the Assessment Set and One Assessment Result

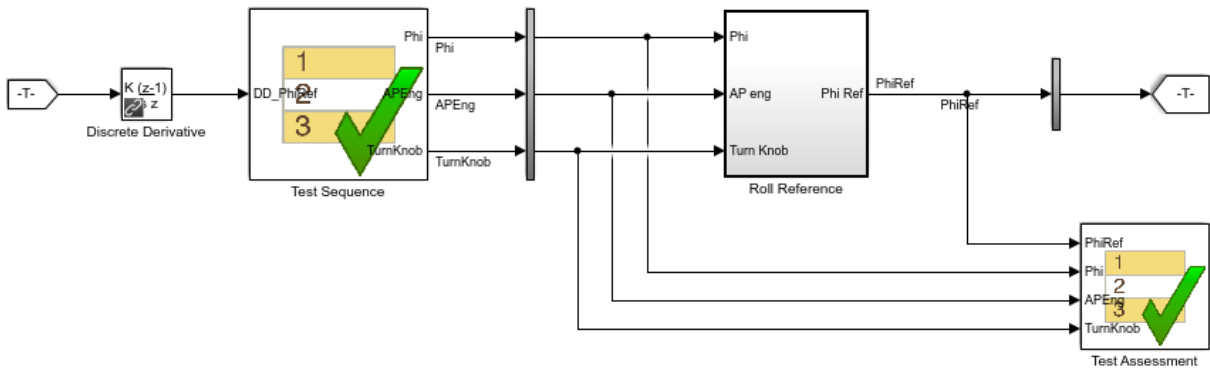
1. Open the model.

```
open_system(fullfile(matlabroot,'examples','simulinktest','sltestRollRefTestExample.sl'))
```

```
% Turn the command line warning off for verify() statements  
warning off Stateflow:Runtime:TestVerificationFailed
```

This model is used to show how verify() statements work in Test Sequence and Test Assessment blocks.
 The Roll Reference subsystem is a copy of a component of a larger model.
 To view the larger model, enter RollAutopilotMdlRef in MATLAB(R).

Copyright 2016 The MathWorks, Inc



2. Run the model.

```
s = sim('sltestRollRefTestExample');
```

3. Get the assessment set.

```
as = sltest.getAssessments('sltestRollRefTestExample');
```

4. Get assessment 3 from the assessment set.

```
as3 = get(as,3);
```

Display Results of the Assessment Set and Assessment Result

1. Get summary of the assessment set.

```
asSummary = getSummary(as)
```

```
asSummary =
```

```
struct with fields:
```

```
Total: 6
Untested: 3
Passed: 2
Failed: 1
Result: Fail
```

2. Display the result of assessment 3.

```
disp(as3)
```

```
sltest.Assessment
Package: sltest

Properties:
  Name: 'Simulink:verify_high'
  BlockPath: [1×1 Simulink.SimulationData.BlockPath]
  Values: [1×1 timeseries]
  Result: Fail
```

3. Find untested or failed results in the assessment set.

```
asFailUntested = find(as, 'Result', slTestResult.Fail, '-or', 'Result', slTestResult.Untested)
```

```
asFailUntested =
```

```
sltest.AssessmentSet
Summary:
  Total: 4
  Untested: 3
  Passed: 0
  Failed: 1
  Result: Fail
```

```
Untested Assessments (first 10):
 2 : Untested 'Simulink:verify_high'
 3 : Untested 'Simulink:verifyTKLow'
 4 : Untested 'Simulink:verifyTKNormal'
```

```
Failed Assessments (first 10):
 1 : Fail 'Simulink:verify_high'
```


4. Find assessments under the Test Assessment block, using a regular expression.

```
assessBlock = find(as, '-regexp', 'BlockPath', '[Aa]ssess')
```

```
assessBlock =
```

```
sltest.AssessmentSet
```

```
Summary:
```

```
  Total: 6
```

```
  Untested: 3
```

```
  Passed: 2
```

```
  Failed: 1
```

```
  Result: Fail
```

```
Untested Assessments (first 10):
```

```
  4 : Untested 'Simulink:verify_high'
```

```
  5 : Untested 'Simulink:verifyTKLow'
```

```
  6 : Untested 'Simulink:verifyTKNormal'
```

```
Passed Assessments (first 10):
```

```
  1 : Pass 'Simulink:verify_normal'
```

```
  2 : Pass 'Simulink:verify_low'
```

```
Failed Assessments (first 10):
```

```
  3 : Fail 'Simulink:verify_high'
```

Input Arguments

as — Assessment set from which to get a single assessment

```
sltest.AssessmentSet
```

This is the `sltest.AssessmentSet`, from which to get a single assessment.

Example: `sltest.AssessmentSet`

index — Index of single assessment

```
integer
```

Index of a single assessment to return to the `sltest.Assessment` object, specified as an integer.

Example: 3

See Also

See Also

`sltest.Assessment` | `sltest.AssessmentSet` | `sltest.getAssessments`

Introduced in R2016b

getSummary

Get summary of `sltest.AssessmentSet`

Syntax

```
testOut = getSummary(as)
```

Description

`testOut = getSummary(as)` gets the summary `testOut` of the `sltest.AssessmentSet` `as`.

Examples

Get Assessments from a Simulation

This example shows how to simulate a model with `verify` statements and obtain assessment results via the programmatic interface.

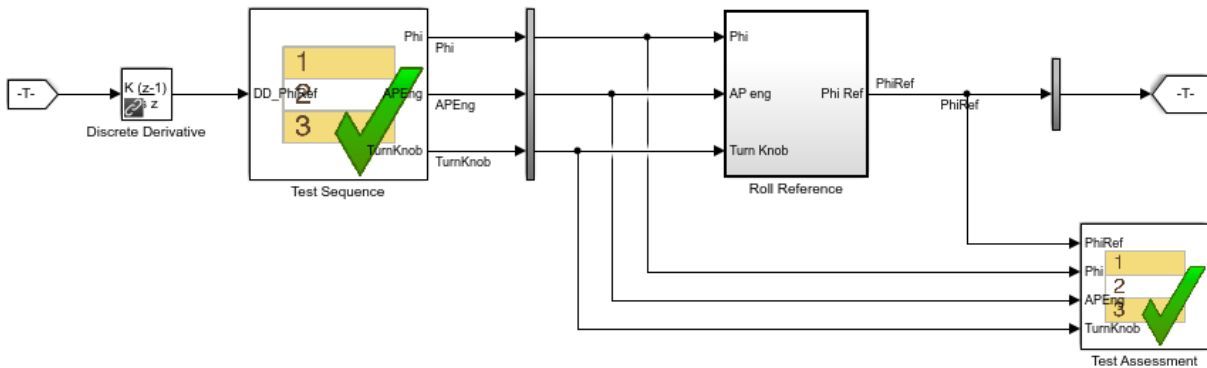
Get the Assessment Set and One Assessment Result

1. Open the model.

```
open_system(fullfile(matlabroot, 'examples', 'simulinktest', 'sltestRollRefTestExample.sl'))  
  
% Turn the command line warning off for verify() statements  
warning off Stateflow:Runtime:TestVerificationFailed
```

This model is used to show how verify() statements work in Test Sequence and Test Assessment blocks.
 The Roll Reference subsystem is a copy of a component of a larger model.
 To view the larger model, enter RollAutopilotMdlRef in MATLAB(R).

Copyright 2016 The MathWorks, Inc



2. Run the model.

```
s = sim('sltestRollRefTestExample');
```

3. Get the assessment set.

```
as = sltest.getAssessments('sltestRollRefTestExample');
```

4. Get assessment 3 from the assessment set.

```
as3 = get(as,3);
```

Display Results of the Assessment Set and Assessment Result

1. Get summary of the assessment set.

```
asSummary = getSummary(as)
```

```
asSummary =
```

```
struct with fields:
```

```

    Total: 6
  Untested: 3
    Passed: 2
    Failed: 1
  Result: Fail

```

2. Display the result of assessment 3.

```
disp(as3)
```

```

sltest.Assessment
Package: sltest

Properties:
  Name: 'Simulink:verify_high'
  BlockPath: [1×1 Simulink.SimulationData.BlockPath]
  Values: [1×1 timeseries]
  Result: Fail

```

3. Find untested or failed results in the assessment set.

```
asFailUntested = find(as, 'Result', slTestResult.Fail, '-or', 'Result', slTestResult.Untested)
```

```
asFailUntested =
```

```

sltest.AssessmentSet
Summary:
  Total: 4
  Untested: 3
  Passed: 0
  Failed: 1
  Result: Fail

```

```

Untested Assessments (first 10):
  2 : Untested 'Simulink:verify_high'
  3 : Untested 'Simulink:verifyTKLow'
  4 : Untested 'Simulink:verifyTKNormal'

```

```

Failed Assessments (first 10):
  1 : Fail 'Simulink:verify_high'

```

4. Find assessments under the Test Assessment block, using a regular expression.

```
assessBlock = find(as, '-regexp', 'BlockPath', '.[Aa]ssess')
```

```
assessBlock =
```

```
sltest.AssessmentSet
```

```
Summary:
```

```
    Total: 6  
  Untested: 3  
    Passed: 2  
    Failed: 1  
    Result: Fail
```

```
Untested Assessments (first 10):
```

```
 4 : Untested 'Simulink:verify_high'  
 5 : Untested 'Simulink:verifyTKLow'  
 6 : Untested 'Simulink:verifyTKNormal'
```

```
Passed Assessments (first 10):
```

```
 1 : Pass 'Simulink:verify_normal'  
 2 : Pass 'Simulink:verify_low'
```

```
Failed Assessments (first 10):
```

```
 3 : Fail 'Simulink:verify_high'
```

Input Arguments

as — Assessment set from which to get a summary

sltest.AssessmentSet

This is the sltest.AssessmentSet, from which to get a summary.

Example: sltest.AssessmentSet

Output Arguments

testOut — Assessment summary

struct

Summary of the assessment set, specified as a `struct`.

See Also

See Also

`sltest.Assessment` | `sltest.AssessmentSet` | `sltest.getAssessments`

sltest.getAssessments

Returns test assessment set object

Syntax

```
testResults = sltest.getAssessments(model)
```

Description

`testResults = sltest.getAssessments(model)` returns `testResults`, an `sltest.AssessmentSet` from assessments in `model`. Simulate the model before getting the assessment results.

Examples

Create an Assessment Set Object

```
as = sltest.getAssessments('sltestRollRefTestExample')
```

Get Assessments from a Simulation

This example shows how to simulate a model with `verify` statements and obtain assessment results via the programmatic interface.

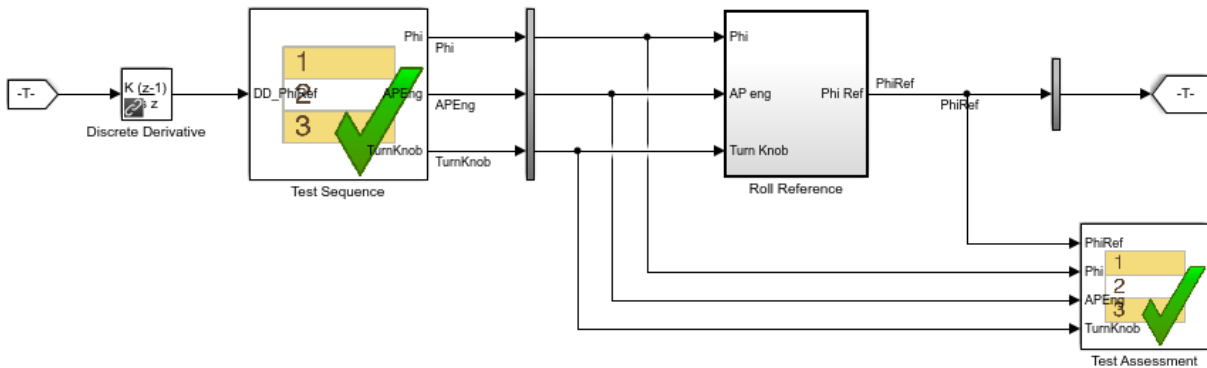
Get the Assessment Set and One Assessment Result

1. Open the model.

```
open_system(fullfile(matlabroot, 'examples', 'simulinktest', 'sltestRollRefTestExample.sl'))  
  
% Turn the command line warning off for verify() statements  
warning off Stateflow:Runtime:TestVerificationFailed
```


This model is used to show how verify() statements work in Test Sequence and Test Assessment blocks.
 The Roll Reference subsystem is a copy of a component of a larger model.
 To view the larger model, enter RollAutopilotMdlRef in MATLAB(R).

Copyright 2016 The MathWorks, Inc



2. Run the model.

```
s = sim('sltestRollRefTestExample');
```

3. Get the assessment set.

```
as = sltest.getAssessments('sltestRollRefTestExample');
```

4. Get assessment 3 from the assessment set.

```
as3 = get(as,3);
```

Display Results of the Assessment Set and Assessment Result

1. Get summary of the assessment set.

```
asSummary = getSummary(as)
```

```
asSummary =
```

```
struct with fields:
```

```
Total: 6
Untested: 3
Passed: 2
Failed: 1
Result: Fail
```

2. Display the result of assessment 3.

```
disp(as3)
```

```
sltest.Assessment
Package: sltest

Properties:
  Name: 'Simulink:verify_high'
  BlockPath: [1×1 Simulink.SimulationData.BlockPath]
  Values: [1×1 timeseries]
  Result: Fail
```

3. Find untested or failed results in the assessment set.

```
asFailUntested = find(as, 'Result', slTestResult.Fail, '-or', 'Result', slTestResult.Untest
```

```
asFailUntested =
```

```
sltest.AssessmentSet
Summary:
  Total: 4
  Untested: 3
  Passed: 0
  Failed: 1
  Result: Fail
```

```
Untested Assessments (first 10):
 2 : Untested 'Simulink:verify_high'
 3 : Untested 'Simulink:verifyTKLow'
 4 : Untested 'Simulink:verifyTKNormal'
```

```
Failed Assessments (first 10):
 1 : Fail 'Simulink:verify_high'
```

4. Find assessments under the Test Assessment block, using a regular expression.

```
assessBlock = find(as, '-regexp', 'BlockPath', '.[Aa]ssess')
```

```
assessBlock =
```

```
sltest.AssessmentSet
```

```
Summary:
```

```
    Total: 6  
    Untested: 3  
    Passed: 2  
    Failed: 1  
    Result: Fail
```

```
Untested Assessments (first 10):
```

```
 4 : Untested 'Simulink:verify_high'  
 5 : Untested 'Simulink:verifyTKLow'  
 6 : Untested 'Simulink:verifyTKNormal'
```

```
Passed Assessments (first 10):
```

```
 1 : Pass 'Simulink:verify_normal'  
 2 : Pass 'Simulink:verify_low'
```

```
Failed Assessments (first 10):
```

```
 3 : Fail 'Simulink:verify_high'
```

See Also

See Also

sltest.Assessment | sltest.AssessmentSet

Introduced in R2016b

sltest.harness.check

Compare component under test between harness model and main model

Syntax

```
CheckResult = sltest.harness.check(harnessOwner, harnessName)
[CheckResult, CheckDetails] = sltest.harness.check(harnessOwner,
harnessName)
```

Description

`CheckResult = sltest.harness.check(harnessOwner, harnessName)` computes the checksum of the component under test in the harness model `harnessName` and compares it to the checksum of the component `harnessOwner` in the main model. The function returns `CheckResult` as `true` or `false`.

`[CheckResult, CheckDetails] = sltest.harness.check(harnessOwner, harnessName)` returns additional details of the check operation to the structure `CheckDetails`.

Examples

Compare Checksums for a Subsystem

Compute the checksums of the `Controller` subsystem in the model `f14` and the harness model `controller_harness`, and compare the results.

```
f14;
sltest.harness.create('f14/Controller', 'Name', 'controller_harness');
CheckResult = sltest.harness.check('f14/Controller', ...
'controller_harness')
```

```
CheckResult = 0
```

Compare Checksums for a Subsystem and Get Details

Compute the checksums of the `Controller` subsystem in the model `f14` and the harness model `controller_harness`, and compare the results.

```
f14;
sltest.harness.create('f14/Controller', 'Name', 'controller_harness');
[CheckResult, CheckDetails] = sltest.harness.check('f14/Controller', ...
    'controller_harness')

CheckResult = 0

CheckDetails =

    overall: 0
    contents: 0
    interface: 0
    reason: 'VirtualSubsystem'
```

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle or path, specified as a character vector or double.

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

harnessName — Harness name

character vector

The name of the harness, specified as a character vector.

Example: 'harness_name'

Output Arguments

CheckResult — Result of comparison

true | false

The result of the component comparison between the harness model and the system model, returned as true or false.

For a block diagram harness, the function returns `CheckResult = true`.

For a virtual subsystem harness, the function returns `CheckResult = false`.

CheckDetails — Details of the check operation

structure

Details of the check operation, returned as a structure. Fields contain the results of the overall component comparison, the results of the component interface and contents comparison, the type of component under test in the harness, and the checksum values for the main model and harness model components.

See Also

See Also

`sltest.harness.close` | `sltest.harness.create` | `sltest.harness.delete`
| `sltest.harness.export` | `sltest.harness.find` | `sltest.harness.load` |
`sltest.harness.open` | `sltest.harness.push` | `sltest.harness.rebuild` |
`sltest.harness.set`

Introduced in R2015a

sltest.harness.clone

Copy test harness

Syntax

```
sltest.harness.clone(HarnessOwner, HarnessName)
sltest.harness.clone(HarnessOwner, HarnessName, NewHarness)
sltest.harness.clone(HarnessOwner, HarnessName, Name, Value)
```

Description

`sltest.harness.clone(HarnessOwner, HarnessName)` clones the test harness `HarnessName` associated with the model or component `HarnessOwner`. The cloned harness contains the source harness model contents, configuration settings, and callbacks.

`sltest.harness.clone(HarnessOwner, HarnessName, NewHarness)` uses an additional argument `NewHarness` to specify the name of the cloned harness.

`sltest.harness.clone(HarnessOwner, HarnessName, Name, Value)` clones the test harness `HarnessName` associated with `HarnessOwner` using additional options specified by one or more `Name, Value` pair arguments.

Examples

Clone a Subsystem Test Harness

Create a test harness `ControllerHarness1` for the `Controller` subsystem of the model `f14`. Clone the harness and save it as `ControllerHarness2`.

```
f14
sltest.harness.create('f14/Controller', 'Name', 'ControllerHarness1', ...
'SynchronizationMode', 'SyncOnOpenAndClose')
sltest.harness.clone('f14/Controller', 'ControllerHarness1', 'ControllerHarness2')
```

Clone the test harness `ControllerHarness1` created in the previous step to the `Aircraft Dynamics Model` subsystem and save it as `ControllerHarnessClone`.

```
sltest.harness.clone('f14/Controller', 'ControllerHarness1', 'DestinationOwner', ...  
'f14/Aircraft Dynamics Model', 'Name', 'ControllerHarnessClone')
```

Input Arguments

HarnessOwner — Model or component

character vector | double

Model or component handle or path, specified as a character vector or a double.

Example: 1.9500e+03

Example: 'f14'

Example: 'f14/Controller'

HarnessName — Source harness name

character vector

The name of the source harness, specified as a character vector.

Example: 'ControllerHarness'

NewHarness — Cloned harness name

character vector

The name of the cloned harness, specified as a character vector. If no value is specified, a default value is automatically generated.

Example: 'ControllerHarness2'

Name-Value Pair Arguments

Specify optional comma-separated pairs of **Name**, **Value** arguments. **Name** is the argument name and **Value** is the corresponding value. **Name** must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as **Name1**, **Value1**, ..., **NameN**, **ValueN**.

Example: 'DestinationOwner', 'model3/
Controller3', 'Name', 'newClonedHarness'

'DestinationOwner' — Owner block to which the harness is cloned

harnessOwner (default) | character vector

Owner block to which the test harness is cloned, specified as the comma-separated pair consisting of 'DestinationOwner' and a character vector.

Example: 'DestinationOwner', 'model3/Controller3'

'Name' — Name of the cloned test harness

autogenerated name (default) | character vector

The name of the cloned test harness, specified as the comma-separated pair consisting of 'Name' and a character vector. If no value is specified for Name, a default value is automatically generated.

Example: 'Name', 'newClonedHarness'

See Also

See Also

sltest.harness.check | sltest.harness.close | sltest.harness.create
| sltest.harness.delete | sltest.harness.export | sltest.harness.find
| sltest.harness.load | sltest.harness.open | sltest.harness.push |
sltest.harness.rebuild | sltest.harness.set

Introduced in R2015b

sltest.harness.close

Close test harness

Syntax

```
sltest.harness.close(modelName)  
sltest.harness.close(harnessOwner)  
sltest.harness.close(harnessOwner, harnessName)
```

Description

`sltest.harness.close(modelName)` closes the open test harness associated with the model `modelName`.

`sltest.harness.close(harnessOwner)` closes the open test harness associated with the model or component `harnessOwner`.

`sltest.harness.close(harnessOwner, harnessName)` closes the test harness `harnessName`, which is associated with the model or component `harnessOwner`.

Examples

Close a Harness Associated With a Subsystem

Close the test harness named `controller_harness`, associated with the subsystem `Controller` in the model `f14`.

```
f14;  
sltest.harness.create('f14/Controller', 'Name', 'sample_controller_harness');  
sltest.harness.open('f14/Controller', 'sample_controller_harness');  
sltest.harness.close('f14/Controller', 'sample_controller_harness');
```

Close a Harness Associated With a Top-level Model

Close the test harness named `sample_harness`, which is associated with the model `f14`.

```
f14;  
sltest.harness.create('f14','Name','sample_harness');  
sltest.harness.open('f14','sample_harness');  
sltest.harness.close('f14','sample_harness');
```

Input Arguments

modelName — Model name

character vector | double

Model handle or path, specified as a character vector or double.

Example: 1.9500e+03

Example: 'model_name'

harnessOwner — Model or component name

character vector | double

Model or component handle or path, specified as a character vector or double.

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

harnessName — Harness name

character vector

The name of the harness, specified as a character vector.

Example: 'harness_name'

See Also

See Also

sltest.harness.check | sltest.harness.create | sltest.harness.delete
| sltest.harness.export | sltest.harness.find | sltest.harness.load |
sltest.harness.open | sltest.harness.push | sltest.harness.rebuild |
sltest.harness.set

Introduced in R2015a

sltest.harness.convert

Convert test harnesses between internal and external storage

Syntax

```
sltest.harness.convert(modelName)  
sltest.harness.convert(modelName,conversion)
```

Description

`sltest.harness.convert(modelName)` converts the test harnesses storage type for `modelName`.

`sltest.harness.convert(modelName,conversion)` converts test harnesses storage type using the additional option `conversion` specifying which storage type is being converted to.

Examples

Convert Test Harnesses from External to Internal

```
sltest.harness.convert('f14', 'InternalToExternal')
```

Input Arguments

modelName — Model name

character vector

Model handle or path, specified as a character vector.

Example: 'model_name'

conversion — Conversion type

'InternalToExternal' | 'ExternalToInternal'

Conversion to perform, specified as a character vector.

Example: 'InternalToExternal'

See Also

See Also

`sltest.harness.check` | `sltest.harness.close` | `sltest.harness.create` |
`sltest.harness.delete` | `sltest.harness.export` | `sltest.harness.open`

Introduced in R2016a

sltest.harness.create

Create test harness

Syntax

```
sltest.harness.create(harnessOwner)
sltest.harness.create(harnessOwner,Name,Value)
```

Description

`sltest.harness.create(harnessOwner)` creates a test harness for the model component `harnessOwner`, using default properties.

`sltest.harness.create(harnessOwner,Name,Value)` uses additional options specified by one or more `Name,Value` pair arguments.

Examples

Create Harness for a Model

Create harness for the `f14` model. The harness is called `sample_harness` and has a Signal Builder block source and a scope sink.

```
f14;
sltest.harness.create('f14','Name','sample_harness','Source',...
'Signal Builder','Sink','Scope')
```

Create Harness for a Subsystem

Create harness for the `Controller` subsystem of the `f14` model. The harness allows editing of `Controller` and uses default properties for the other options.

```
f14;
sltest.harness.create('f14/Controller','EnableComponentEditing',true);
```

Create Default Harness for a Subsystem

Create a default harness for the `Controller` subsystem of the `f14` model.

```
f14;  
sltest.harness.create('f14/Controller');
```

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle or path, specified as a character vector or double.

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

Name-Value Pair Options

Specify optional comma-separated pairs of **Name**, **Value** arguments. **Name** is the argument name and **Value** is the corresponding value. **Name** must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as **Name1**, **Value1**, ..., **NameN**, **ValueN**.

Example: 'Name', 'controller_harness', 'Source', 'Signal Builder', 'Sink', 'To File' specifies a harness named `controller_harness`, with a signal builder block source and To File block sinks for the component under test.

'Name' — Harness name

character vector

The name for the harness you create, specified as the comma-separated pair consisting of 'Name' and a valid MATLAB filename.

Example:

```
'Name', 'harness_name'
```

'Description' — Harness description

character vector

The harness description, specified as the comma-separated pair consisting of 'Description' and a character vector.

Example:

```
'Description', 'A test harness'
```

'Source' — Component under test input

```
'Inport' (default) | 'Signal Builder' | 'From Workspace' | 'From File' |  
'Test Sequence' | 'None' | 'Custom'
```

The input to the component, specified as the comma-separated pair consisting of 'Source' and one of the possible source values.

Example:

```
'Source', 'Signal Builder'
```

'CustomSourcePath' — Path to library block for custom source

character vector

For a custom source, the path to the library block to use as the source, specified as the comma-separated pair consisting of 'CustomSourcePath' and the path.

Example:

```
'CustomSourcePath', 'simulink/Sources/Sine Wave'
```

'Sink' — Harness output

```
'Outport' (default) | 'Scope' | 'To Workspace' | 'To File' | 'None' |  
'Custom'
```

The output of the component, specified as the comma-separated pair consisting of 'Sink' and one of the possible sink values.

Example:

```
'Sink', 'Scope'
```

'CustomSinkPath' — Path to library block for custom sink

character vector

For a custom sink, the path to the library block to use as the sink, specified as the comma-separated pair consisting of 'CustomSinkPath' and the path.

Example:

'CustomSinkPath', 'simulink/Sinks/Terminator'

'SeparateAssessment' — **Separate Test Assessment block when using Test Sequence source**

false (default) | true

Option to add a separate Test Assessment block to the test harness, specified as a comma-separated pair consisting of 'SeparateAssessment' and false or true. 'Source' must be 'Test Sequence'.

Example:

'SeparateAssessment', true

'DriveFcnCallWithTestSequence' — **Connect function call triggers to Test Sequence block output**

true (default) | false

For a component or block diagram that has function call trigger inputs, this is an option specifying how to connect function call trigger inputs, specified as a comma-separated pair consisting of 'DriveFcnCallWithTestSequence' and true or false.

true connects function call trigger inputs to outputs of a Test Sequence block. Choose true if you want to schedule multiple input function calls in a determined order.

false connects function call trigger inputs to Inport blocks. Choose false if you want to map an external Boolean timeseries signal to the inports, to drive the function call triggers.

Example:

'DriveFcnCallWithTestSequence', false

'SynchronizationMode' — **Specifies the synchronization behavior of the component under test**

'SyncOnOpenAndClose' (default) | 'SyncOnOpen' | 'SyncOnPushRebuildOnly'

An option to specify when the component under test synchronizes between the main model and the test harness.

- 'SyncOnOpenAndClose' rebuilds the component under test from the main model when the test harness opens, and pushes changes from the component under test to the main model when the test harness closes.

- 'SyncOnOpen' rebuilds the component under test from the main model when the test harness opens. It does not push changes from the component under test to the main model when the test harness closes.
- 'SyncOnPushRebuildOnly' rebuilds and pushes changes only when you manually initiate rebuild or push for the entire test harness. For more information, see “Synchronize Changes Between Test Harness and Model”.

Example:

```
'SynchronizationMode', 'SyncOnOpen'
```

'CreateWithoutCompile' — Option to create harness without compiling main model
false (default) | true

Option to specify harness creation without compiling the main model, specified as a comma-separated pair consisting of 'CreateWithoutCompile' and false or true.

false compiles the model and runs other operations to support the harness build.

true creates the harness without model compilation.

Example:

```
'CreateWithoutCompile', false
```

'VerificationMode' — Option to use normal (model), software-in-the-loop (SIL), or processor-in-the-loop (PIL) block as component under test
'Normal' (default) | 'SIL' | 'PIL'

An option to specify what type of block to use in the test harness, specified as a comma-separated pair consisting of 'VerificationMode' and the type of block to use. SIL and PIL blocks require Simulink Coder.

Example:

```
'VerificationMode', 'SIL'
```

'RebuildOnOpen' — Sets the harness rebuild command to execute when the harness opens
false (default) | true

Option to have the harness rebuild when it opens, specified as the comma-separated pair consisting of 'UseDefaultName' and false or true.

Example:

'RebuildOnOpen', true

'RebuildModelData' — Sets configuration set and model workspace entries to be updated during the test harness rebuild

false (default) | true

Option to have the configuration set and model workspace entries updated during test harness rebuild, specified as the comma-separated pair consisting of 'RebuildModelData' and true or false.

Example:

'RebuildModelData', true

'SaveExternally' — Test harnesses saved as separate SLX files

false (default) | true

Option to have each test harness saved as a separate SLX file, specified as the comma-separated pair consisting of 'SaveExternally' and true or false. A model cannot use both external and internal test harness storage. If a model already has test harnesses, a new test harness follows the storage type of the existing harnesses, which this option does not override. See “Manage Test Harnesses”.

Example:

'SaveExternally', true

'HarnessPath' — Path to external test harness file

character vector

If 'SaveExternally' is specified, you can specify a location for the external harness SLX file using a comma-separated pair consisting of 'HarnessPath' and a character vector..

Example:

'HarnessPath', 'C:\MATLAB\SafetyTests'

'ScheduleInitTermReset' — Drive model initialize, reset, and terminate ports

false (default) | true

Option to drive model initialize, reset, and terminate ports with the chosen test harness source, specified as the comma-separated pair consisting of 'ScheduleInitTermReset' and false or true. This option only applies to harnesses created for a block diagram.

Example:

```
'ScheduleInitTermReset',true
```

See Also

See Also

```
sltest.harness.check | sltest.harness.clone | sltest.harness.close |  
sltest.harness.convert | sltest.harness.delete | sltest.harness.export  
| sltest.harness.find | sltest.harness.load | sltest.harness.open |  
sltest.harness.set
```

Introduced in R2015a

sltest.harness.delete

Delete test harness

Syntax

```
sltest.harness.delete(harnessOwner, harnessName)
```

Description

`sltest.harness.delete(harnessOwner, harnessName)` deletes the harness `harnessName` associated with `harnessOwner`.

Examples

Delete a Harness Associated With a Subsystem

Delete the test harness `controller_harness`, which is associated with the `Controller` subsystem in the `f14` model.

```
f14;  
sltest.harness.create('f14/Controller', 'Name', 'controller_harness');  
sltest.harness.delete('f14/Controller', 'controller_harness');
```

Delete a Harness Associated With a Top-level Model

Delete the test harness `bd_harness`, which is associated with the model `f14`.

```
f14;  
sltest.harness.create('f14', 'Name', 'bd_harness');  
sltest.harness.delete('f14', 'bd_harness');
```

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle or path, specified as a character vector or double.

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

harnessName — Harness name

character vector

The name of the harness, specified as a character vector.

Example: 'harness_name'

See Also

See Also

`sltest.harness.check` | `sltest.harness.clone` | `sltest.harness.close` |
`sltest.harness.create` | `sltest.harness.export` | `sltest.harness.find` |
`sltest.harness.load` | `sltest.harness.open` | `sltest.harness.push` |
`sltest.harness.rebuild` | `sltest.harness.set`

Introduced in R2015a

sltest.harness.export

Export test harness to Simulink model

Syntax

```
sltest.harness.export(harnessOwner, harnessName, 'Name', modelName)
```

Description

`sltest.harness.export(harnessOwner, harnessName, 'Name', modelName)` exports the harness `harnessName`, associated with the model or component `harnessOwner`, to a new Simulink® model specified by the pair `'Name', modelName`.

The model must be saved prior to export.

Examples

Export a Harness to a New Model

Export the harness `controller_harness`, which is associated with the `Controller` subsystem of the `f14` model. The new model name is `model_from_harness`.

```
f14;  
sltest.harness.create('f14/Controller', 'Name', 'controller_harness');  
save_system('f14');  
sltest.harness.export('f14/Controller', 'controller_harness', 'Name', ...  
    'model_from_harness');
```

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle or path, specified as a character vector or double

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

harnessName — Name of the harness from which to create the model

character vector

The name of the harness, specified as a character vector.

Example: 'harness_name'

modelName — Name of the new model

character vector

A valid MATLAB filename for the model generated from the harness, specified as a character vector.

Example: 'harness_name'

See Also

See Also

sltest.harness.check | sltest.harness.clone | sltest.harness.close |
sltest.harness.create | sltest.harness.delete | sltest.harness.find
| sltest.harness.import | sltest.harness.load | sltest.harness.open |
sltest.harness.push | sltest.harness.rebuild | sltest.harness.set

Introduced in R2015a

sltest.harness.find

Find test harnesses in model

Syntax

```
harnessList = sltest.harness.find(harnessOwner)
harnessList = sltest.harness.find(harnessOwner,Name,Value)
```

Description

`harnessList = sltest.harness.find(harnessOwner)` returns a structure listing harnesses and harness properties that exist for the component or model `harnessOwner`.

`harnessList = sltest.harness.find(harnessOwner,Name,Value)` uses additional search options specified by one or more `Name,Value` pair arguments.

Examples

Use RegExp to Find Harnesses for a Model Component

Find harnesses for the f14 model and its first-level subsystems. The function matches harness names according to a regular expression.

```
f14;
sltest.harness.create('f14','Name','model_harness');
sltest.harness.create('f14/Controller','Name','Controller_Harness1');
harnessList = sltest.harness.find('f14','SearchDepth',1,'Name','_[Hh]arnes+',...
'RegExp','on')
```

```
harnessList =
```

```
1x2 struct array with fields:
```

```
    model
    name
    description
    type
    ownerHandle
```

```

ownerFullPath
ownerType
isOpen
canBeOpened
lockMode
verificationMode
saveIndependently
rebuildOnOpen
rebuildModelData
graphical
origSrc
origSink

```

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle or path, specified as a character vector or double

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

Name-Value Pair Options

Specify optional comma-separated pairs of **Name**, **Value** arguments. **Name** is the argument name and **Value** is the corresponding value. **Name** must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as **Name1**, **Value1**, ..., **NameN**, **ValueN**.

Example: 'SearchDepth',2,'Name','controller_harness' searches the model or component, and two lower hierarchy levels, for harnesses named `controller_harness`.

'Name' — Harness name to search for

character vector | regular expression

Harness name to search for in the model, specified as the comma-separated pair consisting of **'Name'** and a character vector or a regular expression. You can specify a regular expression only if you also use the **Name,Value** pair **'RegExp','on'**.

Example:

```
'Name', 'sample_harness'
```

```
'Name', '_[Hh]arnes+'
```

'RegExp' — Ability to search using a regular expression

'off' (default) | 'on'

Ability to search using a regular expression, specified as the comma-separated pair consisting of 'RegExp' and 'off' or 'on'. When 'RegExp' is set to 'on', you can use a regular expression with 'Name'.

Example:

```
'RegExp', 'on'
```

'SearchDepth' — Subsystem levels to search

all levels (default) | nonnegative integer

Subsystem levels into harnessOwner to search for harnesses, specified as the comma-separated pair consisting of 'SearchDepth' and an integer. For example:

0 searches harnessOwner.

1 searches harnessOwner and its subsystems.

2 searches harnessOwner, its subsystems, and their subsystems.

When you do not specify SearchDepth, the function searches all levels of harnessOwner.

Example:

```
'SearchDepth', 1
```

'OpenOnly' — Search option for open harnesses

'off' (default) | 'on'

Search option to return only active harnesses, specified as the comma-separated pair consisting of 'OpenOnly' and 'off' or 'on'.

Example:

'OpenOnly', 'on'

See Also

See Also

sltest.harness.check | sltest.harness.clone | sltest.harness.close |
sltest.harness.create | sltest.harness.delete | sltest.harness.export
| sltest.harness.load | sltest.harness.open | sltest.harness.push |
sltest.harness.rebuild | sltest.harness.set

Introduced in R2015a

sltest.harness.import

Import Simulink model to test harness

Syntax

```
sltest.harness.import(harnessOwner, 'ImportFileName',  
importModel, 'ComponentName', TestedComponent)  
sltest.harness.import(harnessOwner, 'ImportFileName',  
importModel, 'ComponentName', TestedComponent, Name, Value)
```

Description

`sltest.harness.import(harnessOwner, 'ImportFileName', importModel, 'ComponentName', TestedComponent)` creates a test harness from the Simulink model `importModel`, with a default harness name, associated with `harnessOwner`, with `TestedComponent` the harness component under test.

`sltest.harness.import(harnessOwner, 'ImportFileName', importModel, 'ComponentName', TestedComponent, Name, Value)` uses additional `Name, Value` arguments to specify test harness properties.

Examples

Programmatically Create a Test Harness from a Standalone Model

This example shows how to use `sltest.harness.import` to create a test harness by importing a standalone verification model. You create a test harness for a basic cruise control subsystem.

The standalone model contains a Signal Builder block driving a copy of the Controller subsystem, with a subsystem verifying that the throttle output goes to 0 if the brake is applied for three consecutive time steps.

```
exPath = fullfile(matlabroot, 'examples', 'simulinktest');  
mainModel = 'sltestBasicCruiseControl';
```

```
harnessModel = 'sltestBasicCruiseControlHarnessModel';
```

1. Load the main model.

```
load_system(fullfile(exPath,mainModel))
```

2. Create a test harness from the standalone model. Create the harness for subsystem Controller in the main model, with Controller the harness component under test.

```
sltest.harness.import([mainModel '/Controller'], 'ImportFileName', harnessModel, ...
    'ComponentName', [harnessModel '/Controller'], 'Name', ...
    'VerificationSubsystemHarness')
```

3. Return the properties of the new test harness.

```
testHarnessProperties = sltest.harness.find([mainModel '/Controller'])
```

```
testHarnessProperties =
```

```
    struct with fields:
```

```
        model: 'sltestBasicCruiseControl'
        name: 'VerificationSubsystemHarness'
    description: ''
        type: 'Testing'
    ownerHandle: 6.0033
    ownerFullPath: 'sltestBasicCruiseControl/Controller'
        ownerType: 'Simulink.SubSystem'
        isOpen: 0
    canBeOpened: 1
        lockMode: 0
    verificationMode: 0
    saveExternally: 0
    rebuildOnOpen: 0
    rebuildModelData: 0
        graphical: 0
        origSrc: 'Signal Builder'
        origSink: 'Outport'
    synchronizationMode: 2
```

```
close_system(mainModel,0)
```

- “Create Test Harnesses from Standalone Models”

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle or path, specified as a character vector or double

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

importModel — File path

character vector

Path to the standalone model to import as a test harness

Example: 'C:\MATLAB\sltestBasicCruiseControlTestModel'

TestedComponent — Tested component in standalone model

character vector

The name or path and name of the tested component in the standalone model. After import, this component is linked to the `harnessOwner` component in the main model.

Example: 'Controller'

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1, Value1, ..., NameN, ValueN`.

Example:

'Name' — Harness name

character vector

The name for the harness you create, specified as the comma-separated pair consisting of `'Name'` and a valid MATLAB filename.

Example:

'Name', 'harness_name'

'SynchronizationMode' — Specifies the synchronization behavior of the component under test

'SyncOnOpenAndClose' (default) | 'SyncOnOpen' | 'SyncOnPushRebuildOnly'

An option to specify when the component under test synchronizes between the main model and the test harness.

- 'SyncOnOpenAndClose' rebuilds the component under test from the main model when the test harness opens, and pushes changes from the component under test to the main model when the test harness closes.
- 'SyncOnOpen' rebuilds the component under test from the main model when the test harness opens. It does not push changes from the component under test to the main model when the test harness closes.
- 'SyncOnPushRebuildOnly' rebuilds and pushes changes only when you manually initiate rebuild or push for the entire test harness. For more information, see “Synchronize Changes Between Test Harness and Model”.

Example:

'SynchronizationMode', 'SyncOnOpen'

'RebuildOnOpen' — Sets the harness rebuild command to execute when the harness opens

false (default) | true

Option to have the harness rebuild when it opens, specified as the comma-separated pair consisting of 'UseDefaultName' and false or true.

Example:

'RebuildOnOpen', true

'RebuildModelData' — Sets configuration set and model workspace entries to be updated during the test harness rebuild

false (default) | true

Option to have the configuration set and model workspace entries updated during test harness rebuild, specified as the comma-separated pair consisting of 'RebuildModelData' and true or false.

Example:

```
'RebuildModelData',true
```

'SaveExternally' — Test harnesses saved as separate SLX files

```
false (default) | true
```

Option to have each test harness saved as a separate SLX file, specified as the comma-separated pair consisting of `'SaveExternally'` and `true` or `false`. A model cannot use both external and internal test harness storage. If a model already has test harnesses, a new test harness follows the storage type of the existing harnesses, which this option does not override. See “Manage Test Harnesses”.

Example:

```
'SaveExternally',true
```

'HarnessPath' — Path to external test harness file

```
character vector
```

If `'SaveExternally'` is specified, you can specify a location for the external harness SLX file using a comma-separated pair consisting of `'HarnessPath'` and a character vector..

Example:

```
'HarnessPath','C:\MATLAB\SafetyTests'
```

See Also

See Also

```
sltest.harness.clone | sltest.harness.create | sltest.harness.export |  
sltest.harness.push | sltest.harness.rebuild | sltest.harness.set
```

Topics

“Create Test Harnesses from Standalone Models”

Introduced in R2017a

sltest.harness.load

Load test harness

Syntax

```
sltest.harness.load(harnessOwner, harnessName)
```

Description

`sltest.harness.load(harnessOwner, harnessName)` loads the harness `harnessName` into memory. `harnessName` is associated with the model or component `harnessOwner`.

Examples

Load a Harness Associated With a Subsystem

Load the test harness `controller_harness`, which is associated with the `Controller` subsystem in the `f14` model.

```
f14;  
sltest.harness.create('f14/Controller', 'Name', 'controller_harness');  
save_system('f14');  
sltest.harness.load('f14/Controller', 'controller_harness');
```

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle or path, specified as a character vector or double.

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

harnessName — Harness name

character vector

The name of the harness, specified as a character vector.

Example: 'harness_name'

See Also

See Also

`sltest.harness.check` | `sltest.harness.close` | `sltest.harness.create` |
`sltest.harness.delete` | `sltest.harness.export` | `sltest.harness.find` |
`sltest.harness.open` | `sltest.harness.push` | `sltest.harness.rebuild` |
`sltest.harness.set`

Introduced in R2015a

sltest.harness.move

Move test harness from linked instance to library block or to a different harness owner

Syntax

```
sltest.harness.move(HarnessOwner, HarnessName)
sltest.harness.move(HarnessOwner, HarnessName, NewPath)
sltest.harness.move(HarnessOwner, HarnessName, Name, Value)
```

Description

`sltest.harness.move(HarnessOwner, HarnessName)` moves the test harness `HarnessName` associated with the block `HarnessOwner` from the linked instance to its reference library block. Moving the test harness removes it from the linked instance. This command results in an error if `HarnessName` is not a linked instance.

`sltest.harness.move(HarnessOwner, HarnessName, NewPath)` moves the test harness `harnessName` associated with the block `HarnessOwner` to the destination path specified by `NewPath`.

`sltest.harness.move(HarnessOwner, HarnessName, Name, Value)` moves the test harness `HarnessName` associated with `HarnessOwner` using additional options specified by one or more `Name, Value` pairs.

Examples

Move Test Harness

Move the test harness `Baseline_controller_tests` from the linked instance of the `Controller` subsystem to the library subsystem.

```
% Open the model
open_system sltestHeatpumpLibraryLinkExample
% Move the test harness
sltest.harness.move('sltestHeatpumpLibraryLinkExample/Controller', ...
```

```
'Baseline_controller_tests')
```

Move the test harness `Requirements_Tests` from the linked instance of the `Controller` subsystem to the `Plant` subsystem and save it as `Requirements_Tests_Moved`.

```
sltest.harness.move('sltestHeatpumpLibraryLinkExample/Controller',...  
'Requirements_Tests','DestinationOwner','sltestHeatpumpLibraryLinkExample/Plant',...  
'Name','Requirements_Tests_Moved')
```

Input Arguments

HarnessOwner — Model or component name

character vector | double

Model or component handle or path, specified as a character vector or a double.

Example: `1.9500e+03`

Example: `'model_name'`

Example: `'model_name/Subsystem'`

HarnessName — Harness name

character vector

The name of the harness, specified as a character vector.

Example: `'harness_name'`

NewPath — Destination path

character vector

The destination path of the moved test harness, specified as a character vector.

Example: `'model_name/Subsystem2'`

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (`' '`). You can specify several name and value pair arguments in any order as `Name1, Value1, ..., NameN, ValueN`.

Example: 'DestinationOwner', 'model3/
Controller3', 'Name', 'newMovedHarness'

'DestinationOwner' — Owner block to which the harness is moved

harnessOwner (default) | character vector

Owner block to which the test harness is moved, specified as the comma-separated pair consisting of 'DestinationOwner' and a character vector.

Example: 'DestinationOwner', 'model3/Controller3'

'Name' — Name of moved test harness

name of the test harness (default) | character vector

The name of the moved test harness, specified as the comma-separated pair consisting of 'Name' and a character vector. If no value is specified for **NAME**, the name of the test harness is used by default.

Example: 'Name', 'newMovedHarness'

See Also

See Also

sltest.harness.close | sltest.harness.create | sltest.harness.delete |
sltest.harness.find | sltest.harness.open

Introduced in R2016a

sltest.harness.open

Open test harness

Syntax

```
sltest.harness.open(harnessOwner, harnessName)
```

Description

`sltest.harness.open(harnessOwner, harnessName)` opens the harness `harnessName`, which is associated with the model or component `harnessOwner`.

Examples

Open a Harness Associated With a Subsystem

Open the test harness `controller_harness`, which is associated with the Controller subsystem in the `f14` model.

```
f14;  
sltest.harness.create('f14/Controller', 'Name', 'controller_harness');  
sltest.harness.open('f14/Controller', 'controller_harness');
```

Open a Harness Associated With a Model

Open the test harness `sample_harness`, which is associated with the `f14` model.

```
f14;  
sltest.harness.create('f14', 'Name', 'sample_harness');  
sltest.harness.open('f14', 'sample_harness');
```

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle or path, specified as a character vector or double.

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

harnessName — Harness name

character vector

The name of the harness, specified as a character vector.

Example: 'harness_name'

See Also

See Also

`sltest.harness.check` | `sltest.harness.close` | `sltest.harness.create` |
`sltest.harness.delete` | `sltest.harness.export` | `sltest.harness.find` |
`sltest.harness.load` | `sltest.harness.push` | `sltest.harness.rebuild` |
`sltest.harness.set`

Introduced in R2015a

sltest.harness.push

Push test harness workspace entries and configuration set to model

Syntax

```
sltest.harness.push(harnessOwner, harnessName)
```

Description

`sltest.harness.push(harnessOwner, harnessName)` pushes the configuration parameter set and workspace entries associated with the component under test from the test harness `harnessName` to the main model containing the model or component `harnessOwner`.

Examples

Push Parameters from Harness to Model

Push the parameters of the harness `controller_harness`, which is associated with the Controller subsystem in the `f14` model, to the `f14` model.

```
f14;  
sltest.harness.create('f14/Controller', 'Name', 'controller_harness');  
sltest.harness.push('f14/Controller', 'controller_harness')
```

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle, or path, specified as a character vector or double

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

harnessName — Harness name

character vector

The name of the harness, specified as a character vector.

Example: 'harness_name'

See Also

See Also

`sltest.harness.check` | `sltest.harness.close` | `sltest.harness.create` |
`sltest.harness.delete` | `sltest.harness.export` | `sltest.harness.find` |
`sltest.harness.load` | `sltest.harness.open` | `sltest.harness.rebuild` |
`sltest.harness.set`

Introduced in R2015a

sltest.harness.rebuild

Rebuild test harness and update workspace entries and configuration parameter set based on main model

Syntax

```
sltest.harness.rebuild(harnessOwner,harnessName)
```

Description

`sltest.harness.rebuild(harnessOwner,harnessName)` rebuilds the test harness `harnessName` based on the main model containing `harnessOwner`. The function transfers the configuration set and workspace entries associated with `harnessOwner` to the test harness `harnessName`. The function also rebuilds conversion subsystems in the test harness.

Examples

Rebuild Parameters from Harness to Model

Rebuild the harness `controller_harness`, which is associated with the `Controller` subsystem in the `f14` model.

```
f14;  
sltest.harness.create('f14/Controller','Name','controller_harness');  
sltest.harness.rebuild('f14/Controller','controller_harness');
```

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle, or path, specified as a character vector or double

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

harnessName — **Harness name**

character vector

The name of the harness, specified as a character vector.

Example: 'harness_name'

See Also

See Also

`sltest.harness.check` | `sltest.harness.close` | `sltest.harness.create`
| `sltest.harness.delete` | `sltest.harness.export` | `sltest.harness.find`
| `sltest.harness.load` | `sltest.harness.open` | `sltest.harness.push` |
`sltest.harness.set`

Introduced in R2015a

sltest.harness.set

Change test harness property

Syntax

```
sltest.harness.set(harnessOwner, harnessName, Name, Value)
```

Description

`sltest.harness.set(harnessOwner, harnessName, Name, Value)` changes a property, specified by one `Name, Value` pair argument, for the test harness `harnessName` owned by the model or component `harnessOwner`.

Examples

Change a test harness name

Change the name of the test harness `controller_harness`, which is associated with the `Controller` subsystem in the `f14` model. The new name is `new_name`.

```
f14;  
sltest.harness.create('f14/Controller', 'Name', 'controller_harness');  
sltest.harness.set('f14/Controller', 'controller_harness', 'Name', 'new_name')
```

Enable component editing in the test harness

Set the test harness `controller_harness` to allow editing of the component under test.

```
f14;  
sltest.harness.create('f14/Controller', 'Name', 'controller_harness');  
sltest.harness.set('f14/Controller', 'controller_harness', ...  
'EnableComponentEditing', true);
```

Input Arguments

harnessOwner — Model or component

character vector | double

Model or component handle, or path, specified as a character vector or double

Example: 1.9500e+03

Example: 'model_name'

Example: 'model_name/Subsystem'

harnessName — Harness name

character vector

The name of the harness, specified as a character vector.

Example: 'harness_name'

Name-Value Pair Options

Specify optional comma-separated pairs of **Name**, **Value** arguments. **Name** is the argument name and **Value** is the corresponding value. **Name** must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as **Name1**, **Value1**, ..., **NameN**, **ValueN**.

Example: 'Name', 'updated_harness' specifies a new harness name 'updated_harness'.

'Name' — New harness name

character vector

The new name for the harness, specified as the comma-separated pair consisting of 'Name' and a valid MATLAB filename.

Example:

'Name', 'new_harness_name'

'Description' — New harness description

character vector

The new description for the harness, specified by the comma-separated pair consisting of 'Description' and a character vector.

Example:

'Description', 'An updated test harness'

'SynchronizationMode' — Specifies the synchronization behavior of the component under test

'SyncOnOpenAndClose' (default) | 'SyncOnOpen' | 'SyncOnPushRebuildOnly'

An option to specify when the component under test synchronizes between the main model and the test harness.

- 'SyncOnOpenAndClose' rebuilds the component under test from the main model when the test harness opens, and pushes changes from the component under test to the main model when the test harness closes.
- 'SyncOnOpen' rebuilds the component under test from the main model when the test harness opens. It does not push changes from the component under test to the main model when the test harness closes.
- 'SyncOnPushRebuildOnly' rebuilds and pushes changes only when you manually initiate rebuild or push for the entire test harness. For more information, see “Synchronize Changes Between Test Harness and Model”.

Example:

```
'SynchronizationMode', 'SyncOnOpen'
```

'RebuildOnOpen' — Sets the harness rebuild command to execute when the harness opens

false (default) | true

Option to have the harness rebuild when it opens, specified as the comma-separated pair consisting of 'UseDefaultName' and false or true.

Example:

```
'RebuildOnOpen', true
```

'RebuildModelData' — Sets configuration set and model workspace entries to be updated during the test harness rebuild

false (default) | true

Option to have the configuration set and model workspace entries updated during test harness rebuild, specified as the comma-separated pair consisting of 'RebuildModelData' and true or false.

Example:

```
'RebuildModelData', true
```


'RebuildWithoutCompile' — Sets the harness to rebuild without compiling the main model

false (default) | true

Option to rebuild the harness without compiling the main model, in which cached information from the most recent compile is used to update the test harness workspace, and conversion subsystems are not updated, specified as the comma-separated pair consisting of 'RebuildWithoutCompile' and true or false.

Example:

```
'RebuildWithoutCompile',true
```

See Also

See Also

```
sltest.harness.check | sltest.harness.close | sltest.harness.create  
| sltest.harness.delete | sltest.harness.export | sltest.harness.find  
| sltest.harness.load | sltest.harness.open | sltest.harness.push |  
sltest.harness.rebuild
```

Introduced in R2015a

sltest.import.sldvData

Create test cases from Simulink Design Verifier results

Syntax

```
[owner,testHarness,testFile] = sltest.import.sldvData(dataFile)
[owner,testHarness,testFile] = sltest.import.sldvData(dataFile,Name,
Value)
```

Description

`[owner,testHarness,testFile] = sltest.import.sldvData(dataFile)` creates a test harness and test file using Simulink Design Verifier™ analysis results contained in `dataFile`. The function returns the model component `owner` associated with the test case, the `testHarness`, and the `testFile`.

`[owner,testHarness,testFile] = sltest.import.sldvData(dataFile,Name,Value)` uses additional options specified by one or more `Name,Value` pair arguments.

Examples

Create Test Cases for ShiftLogic Subsystem

Create a test file and test harness for the ShiftLogic subsystem in the `sldvdemo_autotrans` model. The inputs reflect the analysis objectives.

Analyze the ShiftLogic subsystem with Simulink Design Verifier to generate test inputs for subsystem coverage. The results data file is `ShiftLogic_sldvdata.mat`.

Create the test case.

```
[component,harness,testfile] = sltest.import.sldvData...
('./ShiftLogic/ShiftLogic_sldvdata.mat','TestHarnessName',...
'CoverageHarness','TestFileName','CoverageTests')
```

Open the test harness.

```
sltest.harness.open(component,harness)
```

Open the test file.

```
open([testfile '.mldatx'])
```

Create Test Cases for ShiftLogic Subsystem Using an Existing Test Harness

Create a test file and test harness for the ShiftLogic subsystem in the sldvdemo_autotrans model, using an existing test harness.

Analyze the ShiftLogic subsystem with Simulink Design Verifier to generate test inputs for subsystem coverage. The results data file is ShiftLogic_sldvdata.mat. The existing test harness is named DatafileHarness.

Create the test case.

```
[component,harness,testfile] = sltest.import.sldvData...
('./sldv_output/ShiftLogic/ShiftLogic_sldvdata.mat',...
'TestHarnessName','DatafileHarness','TestFileName','CoverageTests',...
'CreateHarness',false)
```

Open the test harness.

```
sltest.harness.open(component,harness)
```

Open the test file.

```
open([testfile '.mldatx'])
```

- “Test Models Using Inputs Generated by Simulink Design Verifier”

Input Arguments

dataFile — Path and file name

character vector

Path and file name of the data file generated by Simulink Design Verifier analysis, specified as a character vector.

Example: 'ShiftLogic0/ShiftLogic0_sldvdata.mat'

Example: 'Controller_sldvdata.mat'

Name-Value Pair Options

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1, Value1, . . . , NameN, ValueN`.

Example: `'TestHarnessName', 'DatafileHarness', 'CreateHarness', false`

'CreateHarness' — Create a test harness for the model or subsystem

`true` (default) | `false`

Option to add a test harness to the model or model component, which corresponds to the test cases in the test file, specified as a comma-separated pair consisting of `'CreateHarness'` and `true` or `false`.

If you specify `true`, use a new test harness name with the `'TestHarnessName'` name-value pair.

If you specify `false`, use an existing test harness name with the `'TestHarnessName'` name-value pair.

Note: If the model under analysis is a test harness, the `CreateHarness` default value is `false`.

Example:

`'CreateHarness', false`

'TestHarnessName' — Harness name

character vector

The test harness used for running the test cases, specified as the comma-separated pair consisting of `'TestHarnessName'` and the name of a test harness.

Use a new test harness name if `'CreateHarness'` is `true` and an existing test harness name if `'CreateHarness'` is `false`.

Example:

`'TestHarnessName', 'ModelCoverageTestHarness'`

'TestFileName' — Test file name

character vector

The name for the test file created for the test cases, specified as the comma-separated pair consisting of 'TestFileName' and the name of a test file.

Example:

```
'TestFileName', 'ModelCoverageTests'
```

'ExtractedModelPath' — Path of extracted model

character vector

The path to the model extracted from Simulink Design Verifier analysis, specified as the comma-separated pair consisting of 'ExtractedModelPath' and a path.

Simulink Test™ uses the extracted model to generate the test harness. By default, `sltest.import.sldvData` looks for the extracted model in the output folder specified in the Design Verifier configuration parameters. Use `ExtractedModelPath` if the extracted model is in a different location.

Simulink Design Verifier does not use an extracted model when you analyze a top-level model. When you generate test cases for a top-level model, Simulink Test does not use 'ExtractedModelPath'.

Example:

```
'Tests/ExtractedModels/'
```

See Also

Topics

“Test Models Using Inputs Generated by Simulink Design Verifier”

Introduced in R2015b

sltest.testmanager.clear

Clear test files from the Test Manager

Syntax

```
sltest.testmanager.clear
```

Description

`sltest.testmanager.clear` clears all test files from the Simulink Test Test Manager. Changes to unsaved test files are not saved.

Examples

Clear Test File from Test Manager

```
% Create test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'simulation', 'Simulation Test Case');

% Clear test file from test manager
sltest.testmanager.clear;
```

- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.close` | `sltest.testmanager.view`

Topics

“Automate Tests Programmatically”

Introduced in R2015a

sltest.testmanager.clearResults

Clear results from Test Manager

Syntax

```
sltest.testmanager.clearResults
```

Description

`sltest.testmanager.clearResults` clears all results data from the Test Manager **Results and Artifacts** pane.

Examples

Clear Results From Test Manager

```
% Run test files in Test Manager  
sltest.testmanager.run;
```

```
% Clear results from Test Manager  
sltest.testmanager.clearResults
```

- “Automate Tests Programmatically”

See Also

See Also

```
sltest.testmanager.clear
```

Topics

“Automate Tests Programmatically”

Introduced in R2016a

sltest.testmanager.close

Close the Simulink Test Manager

Syntax

```
sltest.testmanager.close
```

Description

`sltest.testmanager.close` closes the Simulink Test Manager interface. Test files and results are retained in the Test Manager until the MATLAB® session is closed.

Examples

Clear Test File and Close Test Manager

```
% Create test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'simulation', 'Simulation Test Case');

% Clear test file from Test Manager
sltest.testmanager.clear;

% Close Test Manager
sltest.testmanager.close;
```

- “Automate Tests Programmatically”

See Also

See Also

```
sltest.testmanager.view
```

Topics

“Automate Tests Programmatically”

Introduced in R2015a

sltest.testmanager.copyTests

Copy test cases or test suites to another location

Syntax

```
objArray = sltest.testmanager.copyTests(srcObjArray,targetObj)
```

Description

objArray = sltest.testmanager.copyTests(srcObjArray,targetObj) copies test cases or test suites to another test file or test suite.

Examples

Copy Test Cases to a New Test Suite

```
% Create test structure
tf = sltest.testmanager.TestFile('Test File');
ts_orig = tf.createTestSuite('Original Test Suite');
tc1 = ts_orig.createTestCase('baseline','Baseline Test Case 1');
tc2 = ts_orig.createTestCase('baseline','Baseline Test Case 2');

% Create new test suite for the target location
ts_new = tf.createTestSuite('New Test Suite');

% Copy test cases to new test suite
objArray = sltest.testmanager.copyTests([tc1,tc2],ts_new)

objArray =
```

1x2 TestCase array with properties:

```
Name
Description
Enabled
ReasonForDisabling
TestFile
TestPath
```

```
    TestType
    Parent

% Look at the details of the object array
objArray(1)

ans =

    TestCase with properties:

        Name: 'Baseline Test Case 1'
    Description: ''
        Enabled: 1
    TestFile: [1x1 sltest.testmanager.TestFile]
    TestPath: 'Test File > New Test Suite > Baseline Test Case 1'
    TestType: 'baseline'
        Parent: [1x1 sltest.testmanager.TestSuite]
```

- “Automate Tests Programmatically”

Input Arguments

srcObjArray — Test case or test suites to copy

object array

Test cases or test suites to copy, specified as an array of `sltest.testmanager.TestCase` or `sltest.testmanager.TestSuite` objects.

targetObj — Target test file or test suite

object

The destination test file or test suite to copy to, specified as an `sltest.testmanager.TestFile` or `sltest.testmanager.TestSuite` object.

Output Arguments

objArray — Test cases or test suites at new location

object array

Test cases or test suites at the target destination location, returned as an array of `sltest.testmanager.TestCase` or `sltest.testmanager.TestSuite` objects.

See Also

See Also

`sltest.testmanager.moveTests`

Topics

“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.createTestsFromModel

Generate test cases from a model

Syntax

```
testFile = sltest.testmanager.createTestsFromModel(filePath,  
modelName,testType)
```

Description

`testFile = sltest.testmanager.createTestsFromModel(filePath, modelName, testType)` generates test cases based on the model structure. The function creates test cases from test harnesses and Signal Builder groups in the model and assigns them to a test file.

Examples

Create Test Cases From a Model

Create a new test file with new test cases in the Test Manager. Each test case uses a Signal Builder group scenario.

```
testFile = sltest.testmanager.createTestsFromModel('C:\MATLAB\TestFile.mldatx',...  
          'sldemo_autotrans','baseline')
```

```
testFile =
```

```
    TestFile with properties:
```

```
        Name: 'TestFile'  
    FilePath: 'C:\MATLAB\TestFile.mldatx'  
        Dirty: 0
```

- “Automate Tests Programmatically”

Input Arguments

filePath — Test file name and path

character vector

The path and name of the test file to save the generated test cases to, specified as a character vector.

Example: 'C:\MATLAB\TestFile.mldatx'

modelName — Model name

character vector

The name of the model to generate test cases from, specified as a character vector.

Example: 'sldemo_autotrans'

testType — Test case type

'baseline' (default) | 'simulation' | 'equivalence'

The type of test cases to generate, specified as a character vector. The function creates test cases using this test case type.

Output Arguments

testFile — Test file

sltest.testmanager.TestFile object

Test file that contains the generated test cases, returned as an sltest.testmanager.TestFile object.

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.exportResults

Export results set from Test Manager

Syntax

```
sltest.testmanager.exportResults(resultObjs, filePath)
```

Description

`sltest.testmanager.exportResults(resultObjs, filePath)` exports the specified results set objects to a `.mldatx` file.

Examples

Export Results Set From Test Manager

```
% Get the results set object from Test Manager
result = sltest.testmanager.getResultSets

% Export the results set object to a file
sltest.testmanager.exportResults(result, 'C:\MATLAB\results.mldatx')
```

- “Automate Tests Programmatically”

Input Arguments

resultObjs — Results set array

object

Result sets, specified as an array of `sltest.testmanager.ResultSet` objects.

filePath — Results file path and name

character vector

The file path and name of the result file you want to output, specified as a character vector. The results file is a `.mldatx` file.

Example: 'C:\MATLAB\results.mldatx'

See Also

See Also

sltest.testmanager.ResultSet | sltest.testmanager.getResultSets

Topics

“Automate Tests Programmatically”

Introduced in R2016a

sltest.testmanager.getpref

Get Test Manager preferences

Syntax

```
settings = sltest.testmanager.getpref(group)
settings = sltest.testmanager.getpref(group, preference)
settings = sltest.testmanager.getpref(group,
{preference1, preference2, ...})
```

Description

`settings = sltest.testmanager.getpref(group)` returns Test Manager preference `settings` for the preferences in `group`.

`settings = sltest.testmanager.getpref(group, preference)` returns Test Manager preference `settings` for a specific preference. Use `settings = sltest.testmanager.getpref(group)` to get valid individual preferences for `group`.

`settings = sltest.testmanager.getpref(group, {preference1, preference2, ...})` returns Test Manager preference `settings` for multiple preferences.

Examples

Get test suite section display preferences

This example gets the Test Manager preferences for which sections in a test suite are displayed.

1 Get preferences for test suite display.

```
settings = sltest.testmanager.getpref('TestSuiteDisplay')
settings =
    struct with fields:
```

```

    TestTag: 1
    Description: 1
    Requirement: 1
    Callback: 1
    Coverage: 1

```

2 Get preferences for Description and Requirement.

```

settings = sltest.testmanager.getpref('TestSuiteDisplay',{ 'Description', 'Requirement' })

settings =

    struct with fields:

        Description: 1
        Requirement: 1

```

- “Test Sections”

Input Arguments

group — Preference group

'TestFileDisplay' | 'TestSuiteDisplay' | 'TestCaseDisplay'

Preference group name, specified as a character vector.

- 'TestFileDisplay': display preferences for test files
- 'TestSuiteDisplay': display preferences for test suites
- 'TestCaseDisplay': display preferences for test cases

Example: 'TestFileDisplay'

preference — Preference name

character vector

Preference name, specified as a character vector. Use `settings = sltest.testmanager.getpref(group)` to get valid preferences for a particular group.

Example: 'Description'

Example: 'Callback'

Output Arguments

settings — Test Manager preferences

struct

Preference settings, returned as a struct.

See Also

See Also

`sltest.testmanager.setpref`

Topics

“Test Sections”

Introduced in R2017a

sltest.testmanager.getResultSets

Returns result set objects in Test Manager

Syntax

```
rsList = sltest.testmanager.getResultSets
```

Description

`rsList = sltest.testmanager.getResultSets` returns an array of result set objects, `sltest.testmanager.ResultSet`, from the results currently in the Test Manager **Results and Artifacts** pane.

Examples

Get Test Suite Result

If there is a test suite result in the Test Manager that you want to interact with programmatically, then you can use this function to get the result set object, `sltest.testmanager.ResultSet`.

```
rsList = sltest.testmanager.getResultSets;  
tsrList = getTestSuiteResults(rsList(1));
```

- “Automate Tests Programmatically”

Output Arguments

rsList — Result set array

array of objects

The results currently in the Test Manager **Results and Artifacts** pane, returned as an array of `sltest.testmanager.ResultSet` objects.

See Also

See Also

`sltest.testmanager.ResultSet` | `sltest.testmanager.view`

Topics

“Automate Tests Programmatically”

Introduced in R2016a

sltest.testmanager.getTestFiles

Get all test files open in the Test Manager

Syntax

```
testFiles = sltest.testmanager.getTestFiles
```

Description

`testFiles = sltest.testmanager.getTestFiles` returns an array of test files that are currently open in the Test Manager. The array contains an `sltest.testmanager.TestFile` object for each test file.

Examples

Get Test Files From Test Manager

If there are test files open in the Test Manager, then you can use the function to get the `sltest.testmanager.TestFile` objects for each test file.

Load test files in the Test Manager that you want to get the objects for.

```
% Get test files from Test Manager
testFiles = sltest.testmanager.getTestFiles
```

- “Automate Tests Programmatically”

Output Arguments

testFiles – Test files

`sltest.testmanager.TestFile` object array

Test files that are open in the test manager, returned as an array of `sltest.testmanager.TestFile` objects.

See Also

See Also

`sltest.testmanager.TestFile` | `sltest.testmanager.view`

Topics

“Automate Tests Programmatically”

Introduced in R2016b

sltest.testmanager.importResults

Import Test Manager results file

Syntax

```
resultObjs = sltest.testmanager.importResults(filePath)
```

Description

`resultObjs = sltest.testmanager.importResults(filePath)` imports a results set file (.mldatx) into the Test Manager.

Examples

Import Results and Generate Report

```
% Import results set from a file
result = sltest.testmanager.importResults('testResults.mldatx');

% Set a filepath and filename for the report
filePath = 'testreport.zip';

% Generate the report
sltest.testmanager.report(result,filePath,...
    'Author','User',...
    'Title','Test',...
    'IncludeMLVersion',true,...
    'IncludeTestResults',int32(0),...
    'LaunchReport', true);
```

- “Automate Tests Programmatically”

Input Arguments

filePath — File name and path of results set
character vector

File name and path of results set, specified as a character vector.

Example: `'testResults.mldatx'`

Output Arguments

resultObjs — Results set

object

Results set, returned as an array of `sltest.testmanager.ResultSet` objects.

See Also

See Also

`sltest.testmanager.ResultSet` | `sltest.testmanager.report`

Topics

“Automate Tests Programmatically”

Introduced in R2016a

sltest.testmanager.load

Load a test file in the Simulink Test manager

Syntax

```
tfObj = sltest.testmanager.load(filename)
```

Description

`tfObj = sltest.testmanager.load(filename)` loads a test file in the Simulink Test manager.

Examples

Load Example Test File

In this example, the test file is from the example.

```
% Path to the example test file
exampleFile = fullfile(matlabroot,...
    'toolbox','simulinktest','simulinktestdemos',...
    'sltestParameterOverridesTestSuite.mldatx');

% Load the example test file
sltest.testmanager.load(exampleFile);

% View the test file in the test manager
sltest.testmanager.view;
```

- “Automate Tests Programmatically”

Input Arguments

filename — File name of test file
character vector

File name of a test file, specified as a character vector. The character vector must fully specify the location of the test file.

Example: 'C:\MATLAB\test_file.mldatx'

Output Arguments

tfobj — Test file object

object

Test file, returned as an `sltest.testmanager.TestFile` object.

See Also

See Also

`sltest.testmanager.run` | `sltest.testmanager.TestFile` |
`sltest.testmanager.view`

Topics

“Automate Tests Programmatically”

Introduced in R2015a

sltest.testmanager.moveTests

Move test cases or test suites to a new location

Syntax

```
objArray = sltest.testmanager.moveTests(srcObjArray, targetObj)
```

Description

`objArray = sltest.testmanager.moveTests(srcObjArray, targetObj)` moves test cases or test suites to another test file or test suite.

Examples

Move Test Suite to a New Test File

```
% Create test structure
tf1 = sltest.testmanager.TestFile('Test File 1');
ts = tf1.createTestSuite('Test Suite');

% Create new test file
tf2 = sltest.testmanager.TestFile('Test File 2');

% Move test suite to Test File 2
objArray = sltest.testmanager.moveTests(ts, tf2)

objArray =

    TestSuite with properties:

        Name: 'Test Suite'
        Description: ''
        Enabled: 1
        TestFile: [1x1 sltest.testmanager.TestFile]
        TestPath: 'Test File 2 > Test Suite'
        Parent: [1x1 sltest.testmanager.TestFile]
```

- “Automate Tests Programmatically”

Input Arguments

srcObjArray — Test case or test suites to move

object array

Test cases or test suites to move, specified as an array of `sltest.testmanager.TestCase` or `sltest.testmanager.TestSuite` objects.

targetObj — Target test file or test suite

object

The destination test file or test suite to move to, specified as an `sltest.testmanager.TestFile` or `sltest.testmanager.TestSuite` object.

Output Arguments

objArray — Test cases or test suites at new location

object array

Test cases or test suites at the target destination location, returned as an array of `sltest.testmanager.TestCase` or `sltest.testmanager.TestSuite` objects.

See Also

See Also

`sltest.testmanager.copyTests`

Topics

“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.report

Generate report of test results

Syntax

```
sltest.testmanager.report(resultObj,filePath,Name,Value)
```

Description

`sltest.testmanager.report(resultObj,filePath,Name,Value)` generates a report of the specified results in `resultObj` and saves the report to the `filePath` location.

Examples

Generate a Test Report

Generate a report that includes the test author, test title, and the MATLAB version used to run the test case. The report includes only failed results.

```
filePath = 'test.pdf';  
sltest.testmanager.report(resultObj,filePath,...  
    'Author','TestAuthor',...  
    'Title','Test',...  
    'IncludeMLVersion',true,...  
    'IncludeTestResults',2);
```

Use Custom Report Class to Generate Report

If you create a custom class to customize how the report is generated using the `sltest.testmanager.TestResultReport` class, then generate the report using:

```
% Import existing results or use sltest.testmanager.run to run tests  
% and collect results  
result = sltest.testmanager.importResults('testResults.mldatx');  
filePath = 'testreport.zip';  
sltest.testmanager.report(result,filePath,...
```

```
'Author', 'User', ...  
'Title', 'Test', ...  
'IncludeMLVersion', true, ...  
'IncludeTestResults', int32(0), ...  
'CustomReportClass', 'CustomReport', ...  
'LaunchReport', true);
```

- “Automate Tests Programmatically”

Input Arguments

resultObj — Results set object

object

Results set object to get results from, specified as an `sltest.testmanager.ResultSet` object.

filePath — File name and path of the generated report

character vector

File name and path of the generated report, specified as a character vector. File path must have file extension of pdf, docx, or zip, which are the only supported file types.

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1, Value1, ..., NameN, ValueN`.

Example: `'IncludeTestRequirement', true`

'Author' — Report author

empty character vector (default)

Name of the report author, specified as a character vector.

Example: `'Test Engineer'`

'Title' — Report title

'Test' (default) | character vector

Title of the report, specified as a character vector.

Example: 'Test_Report_1'

'IncludeMLVersion' — Include the MATLAB version

true (default) | false

Choose to include the version of MATLAB used to run the test cases, specified as a Boolean value, true or false.

'IncludeTestRequirement' — Include the test requirement

true (default) | false

Choose to include the test requirement link defined under **Requirements** in the test case, specified as a Boolean value, true or false.

'IncludeSimulationSignalPlots' — Include the simulation output plots

false (default) | true

Choose to include the simulation output plots of each signal, specified as a Boolean value, true or false.

'IncludeComparisonSignalPlots' — Include the comparison plots

false (default) | true

Choose to include the signal comparison plots defined under baseline criteria, equivalence criteria, or assessments using the `verify` operator in the test case, specified as a Boolean value, true or false.

'IncludeErrorMessage' — Include error messages

true (default) | false

Choose to include any error messages from the test case simulations, specified as a Boolean value, true or false.

'IncludeTestResults' — Include all or subset of test results

2 (default) | 0 | 1

Option to include all or a subset of test results in the report. You can select passed and failed results, specified as the integer value 0, select only passed results, specified as the value 1, or select only failed results, specified as the value 2.

'LaunchReport' — Open report at completion

true (default) | false

Open the report when it is finished generating, specified as a Boolean value, `true` or to not open the report, `false`.

'CustomTemplateFile' — Path to document template

character vector

Name and path for a Microsoft® Word template file to use for report generation, specified as a character vector. This is an optional argument that is only available if you have a MATLAB Report Generator™ license.

'CustomReportClass' — Class name for customized report

character vector

Name of the class used for report customization, specified as a character vector. This is an optional argument that is only available if you have a MATLAB Report Generator license.

'IncludeCoverageResult' — Include coverage result metrics

false (default) | true

Choose to include coverage metrics that are collected at test execution, specified as a Boolean value, `true` or `false`. For more information about collecting coverage, see “Collect Coverage in Tests”.

'IncludeSimulationMetadata' — Include simulation metadata

true (default) | false

Choose to include simulation metadata for each test case or iteration, specified as a Boolean value, `true` or `false`. The metadata includes: Simulink version, model version, model author, date, model user ID, model path, machine name, solver name, solver type, fixed step size, simulation start time, simulation stop time, and platform.

See Also

See Also

`sltest.testmanager.ResultSet` | `sltest.testmanager.TestResultReport`

Topics

“Automate Tests Programmatically”

Introduced in R2015a

sltest.testmanager.run

Run tests with Test Manager

Syntax

```
resultObj = sltest.testmanager.run  
resultObj = sltest.testmanager.run(Name,Value)
```

Description

`resultObj = sltest.testmanager.run` runs all of the Simulink Test test files in the Test Manager, returning a `sltest.testmanager.ResultSet` object `resultObj`.

`resultObj = sltest.testmanager.run(Name,Value)` uses additional options specified by one or more `Name, Value` pair arguments.

Examples

Run a Test Case

You can run tests at a test-file, test-suite, or test-case level if they are loaded in the test manager.

```
% Create the test file, test suite, and test case structure  
tf = sltest.testmanager.TestFile('API Test File');  
ts = createTestSuite(tf, 'API Test Suite');  
tc = createTestCase(ts, 'simulation', 'Simulation Test Case');  
  
% Assign the system under test to the test case  
setProperty(tc, 'Model', 'sldemo_autotrans');  
  
% Run the test case and return results data  
ro = run(tc);
```

- “Automate Tests Programmatically”

Input Arguments

Name-Value Pair Options

Example: `'Parallel',true,'Tags',{'safety'}`

'Parallel' — Run with parallel computing

false (default) | true

Specifies whether to run tests with Parallel Computing Toolbox™. Requires Parallel Computing Toolbox license.

Example: `'Parallel',true`

'Tags' — Run only tests with specified tags

cell array of character vectors

Specifies test tags for execution. For more information, see “Tags”.

Example: `'Tags',{'safety'}`

Example: `'Tags',{'safety','regression'}`

Output Arguments

resultObj — Results set object

object

Results set object to get results from, returned as a `sltest.testmanager.ResultSet` object.

See Also

See Also

`sltest.testmanager.load`

Topics

“Automate Tests Programmatically”

Introduced in R2015a

sltest.testmanager.setpref

Set Test Manager preferences

Syntax

```
settings = sltest.testmanager.setpref(group, preference, value)
settings = sltest.testmanager.setpref(group,
{preference1, preference2, ...}, {value1, value2, ...})
```

Description

`settings = sltest.testmanager.setpref(group, preference, value)` sets Test Manager preferences in `group`, specified by `preference`, and `value`. `settings` is the group preferences.

`settings = sltest.testmanager.setpref(group, {preference1, preference2, ...}, {value1, value2, ...})` sets multiple preferences for `group`.

Examples

Set test suite section display preferences

This example sets two Test Manager preferences in the test suite display.

- 1 Get test suite display preferences.

```
settings = sltest.testmanager.getpref('TestSuiteDisplay')

settings =

    struct with fields:

        TestTag: 1
        Description: 1
        Requirement: 1
        Callback: 1
```

- ```
Coverage: 1
```
- 2 Set Description and Requirement to not display.
- ```
settings = sltest.testmanager.setpref...
('TestFileDisplay',{'Description','Requirement'},{false,false})

settings =

    struct with fields:

        TestTag: 1
        Description: 0
        Requirement: 0
        Callback: 1
        Coverage: 1
        TestFileOption: 1
```
- “Test Sections”

Input Arguments

group — Preference group

'TestFileDisplay' | 'TestSuiteDisplay' | 'TestCaseDisplay'

Preference group name, specified as a character vector.

- 'TestFileDisplay': display preferences for test files
- 'TestSuiteDisplay': display preferences for test suites
- 'TestCaseDisplay': display preferences for test cases

Example: 'TestFileDisplay'

preference — Preference name

character vector

Preference name, specified as a character vector. Use `settings = sltest.testmanager.getpref(group)` to get valid preferences for a particular group.

Example: 'Description'

Example: 'Callback'

value — Preference value

boolean

Preference value, specified as a boolean.

Example: `false`

Output Arguments

settings — Test Manager preferences

struct

Preference settings, returned as a struct.

See Also

See Also

`sltest.testmanager.getpref`

Topics

“Test Sections”

Introduced in R2017a

sltest.testmanager.view

Launch the Simulink Test Manager

Syntax

```
sltest.testmanager.view
```

Description

`sltest.testmanager.view` launches the Simulink Test Manager interface. You can also use the function `sltestmgr` to launch the Test Manager.

Examples

Create Test Case and View in Test Manager

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Assign the system under test to test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Open Test Manager to view and edit test case
sltest.testmanager.view;
```

- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.load` | `sltest.testmanager.run`

Topics

“Automate Tests Programmatically”

Introduced in R2015a

sltest.testsequence.addStep

Add test sequence step

Syntax

```
sltest.testsequence.addStep(blockPath,stepPath,Name,Value)
```

Description

`sltest.testsequence.addStep(blockPath,stepPath,Name,Value)` adds a step named `stepPath` to a Test Sequence block specified by `blockPath`. Step properties are specified by `Name,Value` pairs.

Examples

Create a New Test Step

This example creates a test step in the Projector Fan Speed example test sequence under the parent step `SystemHeatingTest`.

- 1 Set paths and open the model.

```
Model = 'sltestProjectorFanSpeedExample';  
Harness = 'FanSpeedTestHarness';  
open_system(Model);
```

- 2 Open the test harness.

```
sltest.harness.open(Model,Harness);
```

- 3 Create a new local variable `h`.

```
sltest.testsequence.addSymbol('FanSpeedTestHarness/Test Sequence',...  
'h','Data','Local');
```

- 4 Create a step `substep1` under the step `SystemHeatingTest` and assign the value 5 to `h`.

```
sltest.testsequence.addStep('FanSpeedTestHarness/Test Sequence',...  
'SystemHeatingTest.substep1','Action','h = 5')
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

stepPath — Test step name and hierarchy level

character vector

Path of the step in the Test Sequence block, specified as a character vector. The path includes the step location in the Test Sequence hierarchy, using `.` to separate hierarchy levels.

Example: 'SystemHeatingTest.InitializeHeating'

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1, Value1, ..., NameN, ValueN`.

Example: 'Action', 'out = square(et)', 'IsWhenStep', false, 'Description', 'Square wave.' specifies a test step to produce a square wave.

'Action' — Test step actions

character vector

Test step action programming. To add a line, create the step actions using the `sprintf` function and the new line operator, `\n`.

Example: 'Action', 'out = square(et)'

'IsWhenStep' — Specifies standard or When decomposition step

false (default) | true

Specifies whether the step is a standard transition type or a When decomposition transition.

Example: `'IsWhenStep', true`

'WhenCondition' — When decomposition step switch condition

character vector

Specifies the condition that activates a When decomposition child step. To activate the When step, enter a valid logical expression.

Example: `'WhenCondition', 'a >= 1'`

'Description' — Description for the test step

character vector

Test step description, specified as a character vector.

Example: `'Description', 'This step produces a high-frequency square wave.'`

See Also

See Also

`sltest.testsequence.addStepAfter` | `sltest.testsequence.addStepBefore` | `sltest.testsequence.addSymbol` | `sltest.testsequence.addTransition` | `sltest.testsequence.editStep` | `sltest.testsequence.findStep`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2016a

sltest.testsequence.addStepAfter

Add test sequence step after existing step

Syntax

```
sltest.testsequence.addStepAfter(blockPath,newStep,stepPath,
Name,Value)
```

Description

`sltest.testsequence.addStepAfter(blockPath,newStep,stepPath,Name,Value)` adds a step to a Test Sequence block specified by `blockPath`. The new step is named `newStep` and is inserted after `stepPath`. Step properties are specified by `Name,Value`.

Examples

Create a New Test Step

This example creates a test step, `step1`, in a Test Sequence block after the step `SetLowPhi`, which is in the second level of hierarchy under the top-level step `APEngagement_AttitudeLevels`.

- 1 Set paths and open the model.

```
filePath = fullfile(matlabroot,'toolbox','simulinktest','simulinktestdemos');
rollModel = 'RollAutopilotMdlRef';
testHarness = 'RollReference_Requirement1_3';
open_system(fullfile(filePath,rollModel));
```

- 2 Open the test harness.

```
sltest.harness.open([rollModel '/Roll Reference'],testHarness)
```

- 3 Create a new local variable `h`.

```
sltest.testsequence.addSymbol('RollReference_Requirement1_3/Test Sequence',...
'h','Data','Local');
```

- 4 Add a step named `step2` and set the value of `h` to 5.

```
sltest.testsequence.addStepAfter('RollReference_Requirement1_3/Test Sequence',...  
'AttitudeLevels.APEngage_LowRoll.step2',...  
'AttitudeLevels.APEngage_LowRoll.SetLowPhi', 'Action', 'h = 5;')
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

newStep — New test step name or handle

character vector

Name of a new test step in the Test Sequence block, specified as a character vector. It is added after `stepPath` and must have the same parent step as `stepPath`.

Example: 'newStep'

Example: 'topStep.midStep.newStep'

stepPath — Test step name and hierarchy level

character vector

Path of the step in the Test Sequence block, specified as a character vector. The path includes the step location in the Test Sequence hierarchy, using `.` to separate hierarchy levels.

Example: 'SystemHeatingTest.InitializeHeating'

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (`' '`). You can specify several name and value pair arguments in any order as `Name1, Value1, ..., NameN, ValueN`.

Example: 'Action', 'out = square(et)', 'IsWhenStep', false, 'Description', 'This step produces a square wave.' specifies a test step to produce a square wave.

'Action' — Test step actions

character vector

The test step action programming. To add a line, create the step actions using the `sprintf` function and the new line operator `\n`.

Example: 'Action', 'out = square(et)'

'IsWhenStep' — Specifies standard or When decomposition step

false (default) | true

Specifies whether the step is a standard transition type or a When decomposition transition.

Example: 'IsWhenStep', true

'WhenCondition' — When decomposition step switch condition

character vector

Specifies the condition that activates a When decomposition child step. To activate the When step, enter a valid logical expression.

Example: 'WhenCondition', 'a >= 1'

'Description' — Description for the test step

character vector

Test step description, specified as a character vector.

Example: 'Description', 'This step produces a high-frequency square wave.'

See Also

See Also

sltest.testsequence.addStep | sltest.testsequence.addStepBefore |
 sltest.testsequence.addSymbol | sltest.testsequence.addTransition |
 sltest.testsequence.editStep | sltest.testsequence.findStep

Topics

“Programmatically Create a Test Sequence”

Introduced in R2016a

sltest.testsequence.addStepBefore

Add test sequence step before existing step

Syntax

```
sltest.testsequence.addStepBefore(blockPath,newStep,stepPath,
Name,Value)
```

Description

`sltest.testsequence.addStepBefore(blockPath,newStep,stepPath,Name,Value)` adds a step to a Test Sequence block specified by `blockPath`. The new step is named `newStep` and inserted immediately before the step named `stepPath`. Step properties are specified by `Name,Value`.

Examples

Create a New Test Step

This example creates a test step, `step1`, in a Test Sequence block before the step `SetLowPhi`, which is in the second level of hierarchy under the top-level step `APEngagement_AttitudeLevels`.

- 1 Set paths and open the model.

```
filePath = fullfile(matlabroot,'toolbox','simulinktest','simulinktestdemos');
rollModel = 'RollAutopilotMdlRef';
testHarness = 'RollReference_Requirement1_3';
open_system(fullfile(filePath,rollModel));
```

- 2 Open the test harness.

```
sltest.harness.open([rollModel '/Roll Reference'],testHarness)
```

- 3 Create a new local variable `h`.

```
sltest.testsequence.addSymbol('RollReference_Requirement1_3/Test Sequence',...
'h','Data','Local');
```

- 4 Add a step named `step1` and set the value of `h` to 5.

```
sltest.testsequence.addStepBefore('RollReference_Requirement1_3/Test Sequence',...  
'AttitudeLevels.APEngage_LowRoll.step1',...  
'AttitudeLevels.APEngage_LowRoll.SetLowPhi','Action','h = 5;')
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

newStep — New test step name or handle

character vector

Name of a new test step in the Test Sequence block, specified as a character vector. It is added before `stepPath` and must have the same parent step as `stepPath`.

Example: 'newStep'

Example: 'topStep.midStep.newStep'

stepPath — Test step name and hierarchy level

character vector

Path of the step in the Test Sequence block, specified as a character vector. The path includes the step location in the Test Sequence hierarchy, using `.` to separate hierarchy levels.

Example: 'SystemHeatingTest.InitializeHeating'

Name-Value Pair Options

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1, Value1, ..., NameN, ValueN`.

Example: 'Action', 'out = square(et)', 'IsWhenStep', false, 'Description', 'This step produces a square wave.' specifies a test step to produce a square wave.

'Action' — Test step actions

character vector

The test step action programming. To add a line, create the step actions using the `sprintf` function and the new line operator `\n`.

Example: 'Action', 'out = square(et)'

'IsWhenStep' — Specifies standard or When decomposition step

false (default) | true

Specifies whether the step is a standard transition type or a When decomposition transition

Example: 'IsWhenStep', true

'WhenCondition' — When decomposition step switch condition

character vector

Specifies the condition that activates a When decomposition child step. To activate the When step, enter a valid logical expression.

Example: 'WhenCondition', 'a >= 1'

'Description' — Description for the test step

character vector

Test step description, specified as a character vector.

Example: 'Description', 'This step produces a high-frequency square wave.'

See Also

See Also

sltest.testsequence.addStep | sltest.testsequence.addStepAfter |
 sltest.testsequence.addSymbol | sltest.testsequence.addTransition |
 sltest.testsequence.editStep | sltest.testsequence.findStep

Topics

“Programmatically Create a Test Sequence”

Introduced in R2016a

sltest.testsequence.addSymbol

Add symbol to test sequence

Syntax

```
sltest.testsequence.addSymbol(blockPath,name,kind,scope)
```

Description

`sltest.testsequence.addSymbol(blockPath,name,kind,scope)` adds a symbol name with properties specified by `scope` and `kind` to a Test Sequence block specified by `blockPath`. The new symbol appears in the **Symbols** sidebar of the Test Sequence Editor. Symbols include data, messages, function calls, and triggers.

Examples

Create a New Data Symbol

This example creates a parameter `theta` in the test sequence block.

Set paths and open the model.

```
filePath = fullfile(matlabroot, 'toolbox', 'simulinktest', 'simulinktestdemos');  
rollModel = 'RollAutopilotMdlRef';  
testHarness = 'RollReference_Requirement1_3';  
open_system(fullfile(filePath,rollModel));
```

Open the test harness.

```
sltest.harness.open([rollModel '/Roll Reference'],testHarness)
```

Add a parameter.

```
sltest.testsequence.addSymbol('RollReference_Requirement1_3/Test Sequence',...  
'theta','Data','Parameter')
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

name — Name of new symbol

character vector

Name of the new symbol, specified as a character vector. The symbol must not already exist in the Test Sequence block.

Example: 'theta'

kind — Symbol type

'Data' | 'Message' | 'Function Call' | 'Trigger'

Symbol type, specified as a character vector.

Example: 'Data'

scope — Symbol scope

'Input' | 'Output' | 'Local' | 'Constant' | 'Parameter' | 'Data Store Memory'

Symbol scope, specified as a character vector.

Example: 'Parameter'

See Also

See Also

`sltest.testsequence.deleteSymbol` | `sltest.testsequence.editSymbol`
| `sltest.testsequence.find` | `sltest.testsequence.findSymbol` |
`sltest.testsequence.readSymbol`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2016a

sltest.testsequence.addTransition

Add new transition to test sequence step

Syntax

```
sltest.testsequence.addTransition(blockPath,fromStep,condition,
toStep)
```

Description

`sltest.testsequence.addTransition(blockPath,fromStep,condition,toStep)` creates a test step transition in the Test Sequence block `blockPath`. The transition executes on `condition`, from the origin `fromStep`, to the destination `toStep`. `fromStep` and `toStep` must be at the same hierarchy level.

Examples

Add a Transition to Stop the Test

This example adds a local error variable, then adds a transition to stop the test sequence if the error variable is 1.

Set paths and open the model.

```
filePath = fullfile(matlabroot,'toolbox','simulinktest','simulinktestdemos');
rollModel = 'RollAutopilotMdlRef';
testHarness = 'RollReference_Requirement1_3';
open_system(fullfile(filePath,rollModel));
```

Open the test harness.

```
sltest.harness.open([rollModel '/Roll Reference'],testHarness)
```

Add a new local variable.

```
sltest.testsequence.addSymbol('RollReference_Requirement1_3/Test Sequence',...
'error','Data','Local')
```

Add a transition to the step `InitializeTest` which goes to the step `Stop` if error is 1.

```
sltest.testsequence.addTransition('RollReference_Requirement1_3/Test Sequence', 'Initial  
'error == 1', 'Stop')
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

fromStep — Origination step path

character vector

Path of an existing step in the Test Sequence block, specified as a character vector, at which the transition originates. The path must include the step name and step hierarchy, using `.` to separate hierarchy levels. This step must be at same level as `toStep`.

Example: 'topStep.midStep.step1'

condition — Condition on which the transition executes

character vector

The condition on which the transition executes, specified as a character vector. Though specified as a character vector, it must be a valid logical expression for the transition to execute.

Example: 'theta == 0 && a == 1'

toStep — Destination step path

character vector

Path of an existing step in the Test Sequence block, specified as a character vector, which becomes active step after the transition executes. The path must include the step name and step hierarchy, using `.` to separate hierarchy levels. This step must be at same level as `fromStep`.

Example: 'topStep.midStep.step2'

See Also

See Also

```
sltest.testsequence.addStep | sltest.testsequence.addSymbol  
| sltest.testsequence.deleteTransition |  
sltest.testsequence.editTransition | sltest.testsequence.find |  
sltest.testsequence.readTransition
```

Topics

“Programmatically Create a Test Sequence”

Introduced in R2016a

sltest.testsequence.deleteStep

Delete test sequence step

Syntax

```
sltest.testsequence.deleteStep(blockPath,stepPath)
```

Description

`sltest.testsequence.deleteStep(blockPath,stepPath)` deletes a test step specified by `stepPath` from a Test Sequence block specified by `blockPath`. Sub-steps of `stepPath` are also deleted.

Examples

Delete a Test Step Programmatically

This example shows how to delete a test step programmatically from a Test Sequence block.

1. Load the model.

```
cd(matlabroot);  
Model = 'sltestRollRefTestExample';  
load_system(fullfile(matlabroot,'examples','simulinktest',Model));
```

2. Delete the step `Stop` from the Test Sequence block.

```
sltest.testsequence.deleteStep('sltestRollRefTestExample/Test Sequence','Stop');
```

3. Close the model

```
close_system(Model,0);
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

stepPath — Test step name and hierarchy level

character vector

Path of the step in the Test Sequence block, specified as a character vector. The path includes the step location in the Test Sequence hierarchy, using . to separate hierarchy levels.

Example: 'SystemHeatingTest.InitializeHeating'

See Also

See Also

`sltest.testsequence.addStep` | `sltest.testsequence.deleteSymbol` |
`sltest.testsequence.deleteTransition`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.deleteSymbol

Delete test sequence block symbol

Syntax

```
sltest.testsequence.deleteSymbol(blockPath,symbolName)
```

Description

`sltest.testsequence.deleteSymbol(blockPath,symbolName)` deletes `symbolName` from a Test Sequence block specified by `blockPath`.

Examples

Delete a Test Sequence Symbol Programmatically

This example shows how to delete a data symbol programmatically from a Test Sequence block. The data symbol `DurationLimit` is a constant.

1. Load the model.

```
cd(matlabroot);  
Model = 'sltestRollRefTestExample';  
load_system(fullfile(matlabroot,'examples','simulinktest',Model));
```

2. Delete the constant `DurationLimit` from the Test Sequence block.

```
sltest.testsequence.deleteSymbol('sltestRollRefTestExample/Test Sequence',...  
    'DurationLimit');
```

3. Close the model.

```
close_system(Model,0);
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

symbolName — Symbol name

character vector

Name of the symbol to delete in the Test Sequence block, specified as a character vector.

Example: 'testOutput'

See Also

See Also

`sltest.testsequence.addSymbol` | `sltest.testsequence.deleteStep` |
`sltest.testsequence.deleteTransition`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.deleteTransition

Delete test sequence transition

Syntax

```
sltest.testsequence.deleteTransition(blockPath,stepPath,index)
```

Description

`sltest.testsequence.deleteTransition(blockPath,stepPath,index)` deletes the transition at the given numerical index from the test step specified by `blockPath` and `stepPath`.

Examples

Delete transition from test sequence

This example deletes a transition from the test sequence.

- 1 Load the model.

```
cd(matlabroot);  
Model = 'sltestRollRefTestExample';  
load_system(fullfile(matlabroot,'examples','simulinktest',Model));
```

- 2 Delete the transition from the test step `SetKnobAndPhi` under the parent step `TurnKnobAndAttitude`.

```
sltest.testsequence.deleteTransition...  
( 'sltestRollRefTestExample/Test Sequence',...  
'TurnKnobAndAttitude.SetKnobAndPhi',1)
```

- 3 Close the model.

```
close_system(Model,0);
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

stepPath — Test step name and hierarchy level

character vector

Path of the step in the Test Sequence block, specified as a character vector. The path includes the step location in the Test Sequence hierarchy, using . to separate hierarchy levels.

Example: 'SystemHeatingTest.InitializeHeating'

index — Transition index

integer

Integer specifying the transition in the test step to be edited. Corresponds to the integer displayed in the Transition cell of the Test Sequence Editor.

Example: 3

See Also

See Also

`sltest.testsequence.addTransition` | `sltest.testsequence.deleteStep` | `sltest.testsequence.deleteSymbol`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.editStep

Edit test sequence step

Syntax

```
sltest.testsequence.editStep(blockPath,stepPath,Name,Value)
```

Description

`sltest.testsequence.editStep(blockPath,stepPath,Name,Value)` edits the properties of an existing step specified by `stepPath` in a Test Sequence block specified by `blockPath`. Changes to the properties are specified by `Name,Value`.

Examples

Add and Edit a Test Step

This example adds a test step then edits the step actions of the new step.

Open the model and test harness.

```
open_system('sltestTestSequenceWhenExample')
sltest.harness.open('sltestTestSequenceWhenExample/SimpleTracker',...
'SimpleTrackerHarness')
```

Add a test step named SquareAndVeryQuick.

```
sltest.testsequence.addStep('SimpleTrackerHarness/Test Sequence',...
'Square.SquareAndVeryQuick')
```

Edit the step actions.

```
action = sprintf('mode = uint8(3);\nout = square(et);\n%% New step action')
action =
mode = uint8(3);
```

```
out = square(et);  
% New step action  
  
sltest.testsequence.editStep('SimpleTrackerHarness/Test Sequence',...  
'Square.SquareAndVeryQuick','Action',action,'Description',...  
'This step outputs a high-frequency square wave.')
```

Add two substeps to the new step.

```
sltest.testsequence.addStep('SimpleTrackerHarness/Test Sequence',...  
'Square.SquareAndVeryQuick.Step1')  
sltest.testsequence.addStep('SimpleTrackerHarness/Test Sequence',...  
'Square.SquareAndVeryQuick.Step2')
```

Change the parent step to a When decomposition.

```
sltest.testsequence.editStep('SimpleTrackerHarness/Test Sequence',...  
'Square.SquareAndVeryQuick','IsWhenStep',true)
```

Add a When condition to the substep Step1.

```
sltest.testsequence.editStep('SimpleTrackerHarness/Test Sequence',...  
'Square.SquareAndVeryQuick.Step1','WhenCondition','a >= 1')
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

stepPath — Test step name and hierarchy level

character vector

Path of the step in the Test Sequence block, specified as a character vector. The path includes the step location in the Test Sequence hierarchy, using `.` to separate hierarchy levels.

Example: 'SystemHeatingTest.InitializeHeating'

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1, Value1, ..., NameN, ValueN`.

Example: `'Action', 'out = square(et)', 'IsWhenStep', false, 'Description', 'This step produces a square wave.'` specifies a test step to produce a square wave.

'Name' — Test step name

character vector

The new name for the test step, specified as a character vector.

Example: `'Name', 'HoldOutput'`

'Action' — Test step action

character vector

The test step action programming. To add a line, create the step actions using the `sprintf` function and the new line operator `\n`.

Example: `'Action', 'out = square(et)'`

'IsWhenStep' — Specifies standard or When decomposition step

false (default) | true

Specifies whether the step is a standard transition type or a When decomposition transition

Example: `'IsWhenStep', true`

'WhenCondition' — When decomposition step switch condition

character vector

Character vector specifying the condition that activates a When decomposition child step. This must be a valid logical expression for the `When` step to activate.

Example: `'WhenCondition', 'a >= 1'`

'Description' — Description for the test step

character vector

Test step description, specified as a character vector.

Example: 'Description', 'This step produces a high-frequency square wave.'

See Also

See Also

`sltest.testsequence.addStep` | `sltest.testsequence.deleteStep` |
`sltest.testsequence.editSymbol` | `sltest.testsequence.editTransition` |
`sltest.testsequence.findStep`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2016a

sltest.testsequence.editSymbol

Edit symbol in Test Sequence block

Syntax

```
sltest.testsequence.editSymbol(blockPath,name,Name,Value)
```

Description

`sltest.testsequence.editSymbol(blockPath,name,Name,Value)` edits a symbol name with properties specified by `Name`, `Value` in a Test Sequence block specified by `blockPath`. Symbols include data, function calls, messages, and triggers.

Examples

Find, read, and edit a Test Sequence block data symbol

This example edits constant `DurationLimit` in the Test Sequence block, changing it to a local variable of `single` data type.

1. Load the model.

```
cd(matlabroot)
Model = 'sltestRollRefTestExample';
load_system(fullfile(matlabroot,'examples','simulinktest',Model))
```

2. Search for data symbols containing the word `duration`.

```
data_names = sltest.testsequence.findSymbol...
    ('sltestRollRefTestExample/Test Sequence','Name','[Dd]uration',...
    'RegExp','on','Kind','Data')
```

```
data_names =
```

```
cell
```

```
'DurationLimit'
```

3. Read the properties of the `DurationLimit` constant.

```
dlProperties = sltest.testsequence.readSymbol...  
('sltestRollRefTestExample/Test Sequence',data_names{1})
```

```
dlProperties =
```

```
struct with fields:
```

```
    Kind: 'Data'  
    Scope: 'Constant'  
    DataType: 'double'  
    Description: ''  
    Document: ''  
    InitialValue: '5'  
    Name: 'DurationLimit'  
    Size: ''  
    Tag: []
```

4. Change `DurationLimit` to a local variable of `single` data type.

```
sltest.testsequence.editSymbol('sltestRollRefTestExample/Test Sequence',...  
    data_names{1}, 'Scope', 'Local', 'DataType', 'single')
```

5. Close the model.

```
close_system(Model,0)
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

name — **Symbol name**

character vector

Name of the symbol, specified as a character vector.

Example: 'theta'

Name-Value Pair Arguments

Specify optional comma-separated pairs of **Name**, **Value** arguments. **Name** is the argument name and **Value** is the corresponding value. **Name** must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as **Name1**, **Value1**, ..., **NameN**, **ValueN**.

Find valid name-value pairs by applying `sltest.testsequence.readSymbol` to the existing symbol.

Example: 'DataType', 'single', 'Scope', 'Constant'

See Also

See Also

`sltest.testsequence.addStep` | `sltest.testsequence.addStepAfter` |
`sltest.testsequence.addStepBefore` | `sltest.testsequence.addTransition`
| `sltest.testsequence.editStep` | `sltest.testsequence.find`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.editTransition

Edit test sequence step transition

Syntax

```
sltest.testsequence.editTransition(blockPath,stepPath,index,  
Name,Value)
```

Description

`sltest.testsequence.editTransition(blockPath,stepPath,index,Name,Value)` edits transition `index` in `stepPath` of the Test Sequence block `blockPath`. Transition properties are specified by `Name,Value`.

Examples

Edit a test step transition

This example adds a transition to a test step, then edits the original transition by changing the index, condition, and next step.

Set paths and load the model.

```
Model = 'sltestRollRefTestExample';  
load_system(fullfile(matlabroot,'examples','simulinktest',Model))
```

Add a transition to the step `AttitudeLevels.APEngage_LowRoll`.

```
sltest.testsequence.addTransition('sltestRollRefTestExample/Test Sequence',...  
'AttitudeLevels.APEngage_LowRoll','true','AttitudeLevels.HighRoll')
```

Edit the original transition.

```
sltest.testsequence.editTransition('sltestRollRefTestExample/Test Sequence',...  
'AttitudeLevels.APEngage_LowRoll',1,'Index',2,...  
'NextStep','AttitudeLevels.APEngage_HighRoll',...)
```

```
'Condition', 'duration(DD_PhiRef == 0,sec) >= 5')
```

Close the model.

```
close_system(Model,0)
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

stepPath — Test step name and hierarchy level

character vector

Path of the step in the Test Sequence block, specified as a character vector. The path includes the step location in the Test Sequence hierarchy, using `.` to separate hierarchy levels.

Example: 'SystemHeatingTest.InitializeHeating'

index — Transition index

integer

Integer specifying the transition in the test step to be edited. Corresponds to the integer displayed in the `Transition` cell of the Test Sequence Editor.

Example: 3

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1, Value1, ..., NameN, ValueN`.

Example: 'Condition', 'error == 1', 'NextStep', 'Stop', 'Index', 3

'Condition' — Condition on which the transition executes

character vector

The condition on which the transition executes, specified as a character vector. To execute the transition, enter a valid logical expression.

Example: `'theta == 0 && a == 1'`

'NextStep' — Destination step of the transition

character vector

The name of the destination step of the transition, which is next in the sequence if the transition condition is satisfied.

Example: `'RampAngle'`

'Index' — Transition index

integer

Integer specifying the new transition index to be applied

Example: `'Index', 2`

See Also

See Also

`sltest.testsequence.addStep` | `sltest.testsequence.addTransition`
| `sltest.testsequence.deleteTransition` |
`sltest.testsequence.readTransition`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.find

Find Test Sequence blocks

Syntax

```
blocks = sltest.testsequence.find
```

Description

`blocks = sltest.testsequence.find` returns a cell array `blocks` listing Test Sequence blocks in open models.

Examples

Find Open Test Sequence Blocks

This example opens a test harness and finds the paths to the two Test Sequence blocks contained in the test harness.

Open the model and test harness.

```
open_system('sltestTestSequenceWhenExample')
sltest.harness.open('sltestTestSequenceWhenExample/SimpleTracker',...
'SimpleTrackerHarness')
```

Find the Test Sequence blocks. One of the blocks is used specifically for Test Assessment.

```
blocks = sltest.testsequence.find
```

```
blocks =
```

```
1×2 cell array
```

```
Column 1
```

```
'SimpleTrackerHarn...'
```

Column 2

'SimpleTrackerHarn...'

See Also

See Also

`sltest.testsequence.findStep` | `sltest.testsequence.findSymbol` |
`sltest.testsequence.getProperty` | `sltest.testsequence.readStep` |
`sltest.testsequence.readSymbol` | `sltest.testsequence.readTransition`

Introduced in R2016a

sltest.testsequence.findStep

Find test sequence steps

Syntax

```
steps = sltest.testsequence.findStep(Name,Value)
```

Description

`steps = sltest.testsequence.findStep(Name,Value)` returns a cell array `steps` listing Test Sequence steps that match properties specified by `Name,Value` pairs.

Examples

Find a test step in a Test Sequence block

This example finds a test step in a Test Sequence block.

1. Load the model.

```
cd(matlabroot)
Model = 'sltestRollRefTestExample';
load_system(fullfile(matlabroot,'examples','simulinktest',Model))
```

2. Find test sequence steps that contain the case-insensitive string `apeng`.

```
steps = sltest.testsequence.findStep('sltestRollRefTestExample/Test Sequence',...
    'Name','[Aa][Pp][Ee]ng','RegExp','on')
```

```
steps =
```

```
1×10 cell array
```

```
Columns 1 through 3
```

```
'AttitudeLevels.AP...' 'AttitudeLevels.AP...' 'AttitudeLevels.AP...'
```

Columns 4 through 6

```
'AttitudeLevels.AP...' 'AttitudeLevels.AP...' 'AttitudeLevels.AP...'
```

Columns 7 through 9

```
'AttitudeLevels.AP...' 'AttitudeLevels.AP...' 'AttitudeLevels.AP...'
```

Column 10

```
'AttitudeLevels.AP...'
```

`steps(3)`

`ans =`

`cell`

```
'AttitudeLevels.APEngage_LowRoll.EngageAP_Low'
```

3. Close the model.

```
close_system(Model,0)
```

Input Arguments

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1,Value1, ...,NameN,ValueN`.

Example: 'Name', '[Aa][Pp][Ee]ng', 'RegExp', 'on'

'Name' — Step name

character vector

The name of the test steps to search

Example: 'Name', 'Engage'

Example: 'Name', '[Aa][Pp][Ee]ng'

'CaseSensitive' — Specify case-sensitive search

'on' | 'off'

Specifies case

Example: 'CaseSensitive', 'on'

'RegExp' — Specify regular expression search

'on' | 'off'

Specify whether to search the step names using Name as a regular expression

Example:

'RegExp', 'on'

Output Arguments

steps — Test sequence steps

cell array

Cell array of test steps matching search criteria

Example: 1×10 cell array

See Also

See Also

sltest.testsequence.editStep | sltest.testsequence.find |
sltest.testsequence.findSymbol | sltest.testsequence.readStep |
sltest.testsequence.readSymbol | sltest.testsequence.readTransition

Introduced in R2017a

sltest.testsequence.findSymbol

Find Test Sequence block symbols

Syntax

```
symbols = sltest.testsequence.findSymbol(blockPath,Name,Value)
```

Description

`symbols = sltest.testsequence.findSymbol(blockPath,Name,Value)` returns symbols in the Test Sequence block `blockPath` matching properties specified by `Name,Value` pairs. Symbols include data, messages, function calls, and triggers.

Examples

Find, read, and edit a Test Sequence block data symbol

This example edits constant `DurationLimit` in the Test Sequence block, changing it to a local variable of `single` data type.

1. Load the model.

```
cd(matlabroot)
Model = 'sltestRollRefTestExample';
load_system(fullfile(matlabroot,'examples','simulinktest',Model))
```

2. Search for data symbols containing the word `duration`.

```
data_names = sltest.testsequence.findSymbol...
    ('sltestRollRefTestExample/Test Sequence','Name','[Dd]uration',...
    'RegExp','on','Kind','Data')
```

```
data_names =
    cell
```

```
'DurationLimit'
```

3. Read the properties of the `DurationLimit` constant.

```
dlProperties = sltest.testsequence.readSymbol...
('sltestRollRefTestExample/Test Sequence',data_names{1})
```

```
dlProperties =
    struct with fields:
        Kind: 'Data'
        Scope: 'Constant'
        DataType: 'double'
        Description: ''
        Document: ''
        InitialValue: '5'
        Name: 'DurationLimit'
        Size: ''
        Tag: []
```

4. Change `DurationLimit` to a local variable of `single` data type.

```
sltest.testsequence.editSymbol('sltestRollRefTestExample/Test Sequence',...
    data_names{1}, 'Scope', 'Local', 'DataType', 'single')
```

5. Close the model.

```
close_system(Model,0)
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (`' '`). You can specify several name and value pair arguments in any order as `Name1, Value1, . . . , NameN, ValueN`.

Example: `'Kind', 'Message', 'Scope', 'Output'`

Example: `'Kind', 'Data', 'Name', '[Aa]ngle', 'RegExp', 'on'`

'Kind' — Data symbol type

`'Data' | 'Message' | 'Function Call' | 'Trigger'`

The scope defines how the data symbol operates in the block. It is specified as a character vector.

Example: `'Data'`

'Scope' — Data symbol scope

`'Input' | 'Output' | 'Local' | 'Constant' | 'Parameter' | 'Data Store Memory'`

Data symbol scope, specified as a character vector.

Example: `'Parameter'`

'Name' — Step name

character vector

The name of the test steps to search

Example: `'Name', 'Engage'`

Example: `'Name', '[Aa][Pp][Ee]ng'`

'CaseSensitive' — Specify case-sensitive search

`'on' | 'off'`

Specifies case

Example: `'CaseSensitive', 'on'`

'RegExp' — Specify regular expression search

`'on' | 'off'`

Specify whether to search the step names using `Name` as a regular expression

Example:

```
'RegExp', 'on'
```

Output Arguments

symbols — Block symbols

cell array

Cell array of Test Sequence block symbols matching search criteria

Example: cell

See Also

See Also

```
sltest.testsequence.deleteSymbol | sltest.testsequence.editSymbol  
| sltest.testsequence.find | sltest.testsequence.findStep |  
sltest.testsequence.readSymbol
```

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.getProperty

Get Test Sequence block properties

Syntax

```
blockInfo = sltest.testsequence.getProperty(blockPath)
blockInfo = sltest.testsequence.getProperty(blockPath,propertyName)
```

Description

`blockInfo = sltest.testsequence.getProperty(blockPath)` returns a struct `blockInfo` containing properties of the Test Sequence block specified by `blockPath`.

`blockInfo = sltest.testsequence.getProperty(blockPath,propertyName)` returns `blockInfo`, containing the value of `propertyName`.

Examples

Programmatically Return and Set Test Sequence Block Properties

This example gets and sets properties for a Test Sequence block using the programmatic interface.

1. Load the model.

```
cd(matlabroot)
Model = 'sltestRollRefTestExample';
load_system(fullfile(matlabroot,'examples','simulinktest',Model))
```

2. Get properties of the Test Sequence block.

```
blockInfo = sltest.testsequence.getProperty([Model '/Test Sequence'])
```

```
blockInfo =
```

```
struct with fields:
```

```

        Name: 'Test Sequence'
    UpdateMethod: 'INHERITED'
        SampleTime: ''
        Description: ''
        Document: ''
        Tag: []
    supportVariableSizing: 1
    SaturateOnIntegerOverflow: 1
        InputFimath: 'fimath(.....)'
    Em1DefaultFimath: 'Same as MATLAB Default'
    EnableActiveStepOutput: 0
        OutputData: ''

```

3. Get the Test Sequence block update method.

```
blockUpdateMethod = sltest.testsequence.getProperty(...
    [Model '/Test Sequence'], 'UpdateMethod')
```

```
blockUpdateMethod =
    'INHERITED'
```

4. Change the Test Sequence block update method and sample time.

```
sltest.testsequence.setProperty([Model '/Test Sequence'], ...
    'UpdateMethod', 'Discrete', 'SampleTime', '0.1')
```

5. Check the changes.

```
blockInfo = sltest.testsequence.getProperty([Model '/Test Sequence'])
```

```
blockInfo =
```

```
struct with fields:
```

```

        Name: 'Test Sequence'
    UpdateMethod: 'DISCRETE'
        SampleTime: '0.1'
        Description: ''

```

```
        Document: ''
            Tag: []
    supportVariableSizing: 1
    SaturateOnIntegerOverflow: 1
        InputFimath: 'fimath(.....)'
        Em1DefaultFimath: 'Same as MATLAB Default'
    EnableActiveStepOutput: 0
        OutputData: ''
```

5. Close the model.

```
close_system(Model,0)
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

propertyName — Test Sequence block property name

```
'Name' | 'UpdateMethod' | 'SampleTime' | 'Description' | 'Document'
| 'Tag' | 'supportVariableSizing' | 'SaturateOnIntegerOverflow' |
| 'InputFimath' | 'FimathForFiConstructors' | "EnableActiveStepOutput" |
'OutputData'
```

Name of a particular Test Sequence block property to get a value for.

Example: 'Description'

Output Arguments

blockInfo — Block properties or property value

struct | character vector | logical

Output of block properties, or the value of a particular block property

Example: struct with fields

Example: char array

Example: logical

See Also

See Also

sltest.testsequence.find | sltest.testsequence.readStep |
sltest.testsequence.readSymbol | sltest.testsequence.readTransition |
sltest.testsequence.setProperty

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.newBlock

Create Test Sequence block

Syntax

```
blockID = sltest.testsequence.newBlock(blockPath)
```

Description

`blockID = sltest.testsequence.newBlock(blockPath)` adds a Test Sequence block specified by `blockPath`, returning the handle `blockID`.

Examples

Create a Test Sequence Block and Get Block Properties

This example shows how to create a Test Sequence block programmatically, and get properties for the block, which can be used in Name, Value pairs for `sltest.testsequence.setProperty`.

1. Create a model and a Test Sequence block.

```
new_system('tsb_model');  
sltest.testsequence.newBlock('tsb_model/Test Sequence');
```

2. Get properties of the Test Sequence block.

```
block_properties = sltest.testsequence.getProperty('tsb_model/Test Sequence')
```

```
block_properties =
```

```
    struct with fields:
```

```
        Name: 'Test Sequence'  
    UpdateMethod: 'INHERITED'  
        SampleTime: ''  
        Description: ''
```

```

        Document: ''
            Tag: []
        supportVariableSizing: 1
    SaturateOnIntegerOverflow: 1
        InputFimath: 'fimath(...)'
        EmlDefaultFimath: 'Same as MATLAB Default'
    EnableActiveStepOutput: 0
        OutputData: ''

```

3. Close the model.

```
close_system('tsb_model',0)
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

Output Arguments

blockID — Handle to the block

double

Block handle, returned as a double.

Example: 190.0021

See Also

See Also

sltest.testsequence.find | sltest.testsequence.getProperty |
sltest.testsequence.setProperty

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.readStep

Find Test Sequence blocks

Syntax

```
stepInfo = sltest.testsequence.readStep(blockPath,stepPath)
stepInfo = sltest.testsequence.readStep(blockPath,stepPath,Property)
```

Description

`stepInfo = sltest.testsequence.readStep(blockPath,stepPath)` returns a struct `stepInfo` of properties for the test step `stepPath` in the Test Sequence block `blockPath`.

`stepInfo = sltest.testsequence.readStep(blockPath,stepPath,Property)` returns the value `stepInfo` of the `Property` for the test step.

Examples

Read Test Step and Transition Properties

This example reads properties of a test step and a transition in a Test Sequence block.

1. Load the model.

```
cd(matlabroot)
Model = 'sltestRollRefTestExample';
load_system(fullfile(matlabroot,'examples','simulinktest',Model))
```

2. Read the properties of the test step `SetMedPhi`, which is a sub-step of `AttitudeLevels.APEngage_MedRoll`.

```
stepInfo = sltest.testsequence.readStep([Model,'/Test Sequence'],...
    'AttitudeLevels.APEngage_MedRoll.SetMedPhi')
```

```
stepInfo =  
    struct with fields:  
        Name: 'AttitudeLevels.APEngage_MedRoll.SetMedPhi'  
        Action: 'Phi = 11.5;↵APEng = false;'  
        IsWhenStep: 0  
        IsWhenSubStep: 0  
        Description: ''  
        TransitionCount: 1
```

3. Read the action of the same step.

```
stepAction = sltest.testsequence.readStep([Model, '/Test Sequence'],...  
    'AttitudeLevels.APEngage_MedRoll.SetMedPhi', 'Action')
```

```
stepAction =  
    'Phi = 11.5;  
    APEng = false;'
```

4. Read the transition properties for the parent step.

```
xInfo = sltest.testsequence.readTransition([Model, '/Test Sequence'],...  
    'AttitudeLevels.APEngage_MedRoll', 1)
```

```
xInfo =  
    struct with fields:  
        Step: 'AttitudeLevels.APEngage_MedRoll'  
        Index: 1  
        Condition: 'duration(DD_PhiRef == 0,sec) >= DurationLimit'  
        NextStep: 'AttitudeLevels.APEngage_HighRoll'
```

5. Close the model.

```
close_system(Model,0)
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

stepPath — Test step name and hierarchy level

character vector

Path of the step in the Test Sequence block, specified as a character vector. The path includes the step location in the Test Sequence hierarchy, using `.` to separate hierarchy levels.

Example: 'SystemHeatingTest.InitializeHeating'

Property — Step property

'Name' | 'Action' | 'IsWhenStep' | 'IsWhenSubStep' | 'Description' |
'TransitionCount'

Property of the test step, specified as a character vector.

Example: 'TransitionCount'

Output Arguments

stepInfo — Test step properties

struct | character vector | logical | numeric

Example: struct

See Also

See Also

sltest.testsequence.deleteStep | sltest.testsequence.editStep
| sltest.testsequence.find | sltest.testsequence.findStep |
sltest.testsequence.readSymbol | sltest.testsequence.readTransition

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.readSymbol

Read Test Sequence block symbol properties

Syntax

```
symbolInfo = sltest.testsequence.readSymbol(blockPath,symbol)
symbolInfo = sltest.testsequence.readSymbol(blockPath,symbol,
Property)
```

Description

`symbolInfo = sltest.testsequence.readSymbol(blockPath,symbol)` returns a struct `symbolInfo` of properties for `symbol` in the Test Sequence block specified by `blockPath`.

`symbolInfo = sltest.testsequence.readSymbol(blockPath,symbol,Property)` returns the value `symbolInfo` of the `Property` for `symbol`.

Examples

Find, read, and edit a Test Sequence block data symbol

This example edits constant `DurationLimit` in the Test Sequence block, changing it to a local variable of `single` data type.

1. Load the model.

```
cd(matlabroot)
Model = 'sltestRollRefTestExample';
load_system(fullfile(matlabroot,'examples','simulinktest',Model))
```

2. Search for data symbols containing the word `duration`.

```
data_names = sltest.testsequence.findSymbol...
('sltestRollRefTestExample/Test Sequence','Name','[Dd]uration',...
'RegExp','on','Kind','Data')
```

```
data_names =  
    cell  
        'DurationLimit'
```

3. Read the properties of the `DurationLimit` constant.

```
d1Properties = sltest.testsequence.readSymbol...  
    ('sltestRollRefTestExample/Test Sequence',data_names{1})
```

```
d1Properties =  
    struct with fields:  
        Kind: 'Data'  
        Scope: 'Constant'  
        DataType: 'double'  
        Description: ''  
        Document: ''  
        InitialValue: '5'  
        Name: 'DurationLimit'  
        Size: ''  
        Tag: []
```

4. Change `DurationLimit` to a local variable of `single` data type.

```
sltest.testsequence.editSymbol('sltestRollRefTestExample/Test Sequence',...  
    data_names{1},'Scope','Local','DataType','single')
```

5. Close the model.

```
close_system(Model,0)
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

symbol — Symbol name

character vector

Test Sequence block symbol name, specified as a character vector. Symbols include data, messages, function calls, and triggers used as inputs, outputs, local variables, constants, parameters, or data store memory in the Test Sequence block.

Example: 'DurationLimit'

Property — Symbol property

character vector

Test Sequence block symbol property, specified as a character vector. To find valid properties for a particular symbol, read properties of the symbol using `sltest.testsequence.readSymbol(blockPath,symbol)`.

Example: 'Kind'

Example: 'Scope'

Example: 'DataType' 'Description'

Output Arguments

symbolInfo — Test Sequence block symbol properties

struct | character vector | logical | numeric

Example: struct

See Also

See Also

`sltest.testsequence.addSymbol` | `sltest.testsequence.deleteSymbol`
| `sltest.testsequence.findSymbol` | `sltest.testsequence.readStep` |
`sltest.testsequence.readTransition`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.readTransition

Read properties of test sequence transition

Syntax

```
transitionInfo = sltest.testsequence.readTransition(blockPath,  
stepPath,index)  
transitionInfo = sltest.testsequence.readTransition(blockPath,  
stepPath,index,Property)
```

Description

`transitionInfo = sltest.testsequence.readTransition(blockPath, stepPath, index)` returns a struct `transitionInfo` of properties for the transition `index`, in the test step `stepPath` of the Test Sequence block `blockPath`.

`transitionInfo = sltest.testsequence.readTransition(blockPath, stepPath, index, Property)` returns the value `transitionInfo` of the `Property` for the transition.

Examples

Read Test Step and Transition Properties

This example reads properties of a test step and a transition in a Test Sequence block.

1. Load the model.

```
cd(matlabroot)  
Model = 'sltestRollRefTestExample';  
load_system(fullfile(matlabroot, 'examples', 'simulinktest', Model))
```

2. Read the properties of the test step `SetMedPhi`, which is a sub-step of `AttitudeLevels.APEngage_MedRoll`.

```
stepInfo = sltest.testsequence.readStep([Model, '/Test Sequence'],...  
    'AttitudeLevels.APEngage_MedRoll.SetMedPhi')
```

```
stepInfo =
```

```
    struct with fields:
```

```
        Name: 'AttitudeLevels.APEngage_MedRoll.SetMedPhi'  
        Action: 'Phi = 11.5;APEng = false;'  
        IsWhenStep: 0  
        IsWhenSubStep: 0  
        Description: ''  
        TransitionCount: 1
```

3. Read the action of the same step.

```
stepAction = sltest.testsequence.readStep([Model, '/Test Sequence'],...  
    'AttitudeLevels.APEngage_MedRoll.SetMedPhi', 'Action')
```

```
stepAction =
```

```
    'Phi = 11.5;  
    APEng = false;'
```

4. Read the transition properties for the parent step.

```
xInfo = sltest.testsequence.readTransition([Model, '/Test Sequence'],...  
    'AttitudeLevels.APEngage_MedRoll', 1)
```

```
xInfo =
```

```
    struct with fields:
```

```
        Step: 'AttitudeLevels.APEngage_MedRoll'  
        Index: 1  
        Condition: 'duration(DD_PhiRef == 0,sec) >= DurationLimit'  
        NextStep: 'AttitudeLevels.APEngage_HighRoll'
```

5. Close the model.

```
close_system(Model,0)
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

stepPath — Test step name and hierarchy level

character vector

Path of the step in the Test Sequence block, specified as a character vector. The path includes the step location in the Test Sequence hierarchy, using `.` to separate hierarchy levels.

Example: 'SystemHeatingTest.InitializeHeating'

index — Transition index

integer

Integer specifying the transition in the test step to be edited. Corresponds to the integer displayed in the `Transition` cell of the Test Sequence Editor.

Example: 3

Property — Transition property

character vector

Transition property, specified as a character vector. To find valid properties for a particular symbol, read properties of the symbol using `sltest.testsequence.readTransition(blockPath,stepPath,index)`.

Example: 'Step'

Example: 'Index'

Example: 'Condition'

Example: 'NextStep'

Output Arguments

transitionInfo — Transition properties

struct | character vector | numeric

Example: `struct`

See Also

See Also

`sltest.testsequence.addTransition` |
`sltest.testsequence.deleteTransition` |
`sltest.testsequence.editTransition` | `sltest.testsequence.findStep` |
`sltest.testsequence.readStep` | `sltest.testsequence.readSymbol`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltest.testsequence.setProperty

Set Test Sequence block properties

Syntax

```
sltest.testsequence.setProperty(blockPath,Name,Value)
```

Description

`sltest.testsequence.setProperty(blockPath,Name,Value)` sets properties of the Test Sequence block specified by `blockPath` according to one or more `Name, Value` pairs. Obtain valid properties using `sltest.testsequence.getProperty`.

Examples

Programmatically Return and Set Test Sequence Block Properties

This example gets and sets properties for a Test Sequence block using the programmatic interface.

1. Load the model.

```
cd(matlabroot)
Model = 'sltestRollRefTestExample';
load_system(fullfile(matlabroot,'examples','simulinktest',Model))
```

2. Get properties of the Test Sequence block.

```
blockInfo = sltest.testsequence.getProperty([Model '/Test Sequence'])
```

```
blockInfo =
```

```
    struct with fields:
```

```
                Name: 'Test Sequence'
        UpdateMethod: 'INHERITED'
```

```
        SampleTime: ''
        Description: ''
        Document: ''
        Tag: []
    supportVariableSizing: 1
    SaturateOnIntegerOverflow: 1
        InputFimath: 'fimath(.....)'
        EmlDefaultFimath: 'Same as MATLAB Default'
    EnableActiveStepOutput: 0
        OutputData: ''
```

3. Get the Test Sequence block update method.

```
blockUpdateMethod = sltest.testsequence.getProperty(...
    [Model '/Test Sequence'], 'UpdateMethod')
```

```
blockUpdateMethod =
```

```
    'INHERITED'
```

4. Change the Test Sequence block update method and sample time.

```
sltest.testsequence.setProperty([Model '/Test Sequence'], ...
    'UpdateMethod', 'Discrete', 'SampleTime', '0.1')
```

5. Check the changes.

```
blockInfo = sltest.testsequence.getProperty([Model '/Test Sequence'])
```

```
blockInfo =
```

```
    struct with fields:
```

```
        Name: 'Test Sequence'
        UpdateMethod: 'DISCRETE'
        SampleTime: '0.1'
        Description: ''
        Document: ''
        Tag: []
    supportVariableSizing: 1
    SaturateOnIntegerOverflow: 1
```

```

        InputFimath: 'fimath(.....)'
        Em1DefaultFimath: 'Same as MATLAB Default'
        EnableActiveStepOutput: 0
        OutputData: ''

```

5. Close the model.

```
close_system(Model,0)
```

- “Programmatically Create a Test Sequence”

Input Arguments

blockPath — Test Sequence block path

character vector

Path to a Test Sequence block, including the block name, specified as a character vector.

Example: 'FanSpeedTestHarness/Test Sequence'

Name-Value Pair Arguments

Example: 'Description', 'Temperature cycle', 'EnableActiveStepOutput', true

Valid name-value pairs are block-specific; obtain properties for the block using `sltest.testsequence.getProperty`. For example:

Create a Test Sequence Block and Get Block Properties

This example shows how to create a Test Sequence block programmatically, and get properties for the block, which can be used in Name, Value pairs for `sltest.testsequence.setProperty`.

1. Create a model and a Test Sequence block.

```
new_system('tsb_model');
sltest.testsequence.newBlock('tsb_model/Test Sequence');
```

2. Get properties of the Test Sequence block.

```
block_properties = sltest.testsequence.getProperty('tsb_model/Test Sequence')
```

```
block_properties =  
    struct with fields:  
        Name: 'Test Sequence'  
        UpdateMethod: 'INHERITED'  
        SampleTime: ''  
        Description: ''  
        Document: ''  
        Tag: []  
        supportVariableSizing: 1  
        SaturateOnIntegerOverflow: 1  
        InputFimath: 'fimath(...↔)'  
        Em1DefaultFimath: 'Same as MATLAB Default'  
        EnableActiveStepOutput: 0  
        OutputData: ''
```

3. Close the model.

```
close_system('tsb_model',0)
```

See Also

See Also

`sltest.testsequence.find` | `sltest.testsequence.getProperty` |
`sltest.testsequence.newBlock`

Topics

“Programmatically Create a Test Sequence”

Introduced in R2017a

sltestiteration

Create test iteration

Syntax

```
iterObj = sltestiteration
```

Description

`iterObj = sltestiteration` returns a test iteration object, `sltest.testmanager.TestIteration`. You can use the function in the MATLAB command window, or you can use it in the context of a scripted iteration under the **Iterations** section of a test case. For more information on creating test iterations, see “Run Multiple Combinations of Tests Using Iterations”.

Examples

Iterate Over Signal Builder Groups

This example is a script that must be entered in the Scripted Iterations script text box under the **Iterations** section of a test case. Also, the system under test for this example is a model that contains Signal Builder groups.

```
%% Iterate Over All Signal Builder Groups

% Determine the number of possible iterations
numSteps = length(sltest_signalBuilderGroups);

% Create each iteration
for k = 1 : numSteps
    % Set up a new iteration object
    testItr = sltestiteration;

    % Set iteration settings
    setTestParam(testItr, 'SignalBuilderGroup', sltest_signalBuilderGroups{k});
```

```
% Add the iteration to run in this test case
% You can pass in an optional iteration name
addIteration(sltest_testCase,testItr);
end
```

- “Run Multiple Combinations of Tests Using Iterations”
- “Automate Tests Programmatically”

Output Arguments

iterObj — Test iteration

`sltest.testmanager.TestIteration` object

Test iteration, returned as a `sltest.testmanager.TestIteration` object.

See Also

See Also

`sltest.testmanager.TestIteration`

Topics

“Run Multiple Combinations of Tests Using Iterations”
“Automate Tests Programmatically”

Introduced in R2016a

Classes — Alphabetical List

sltest.Assessment

Access assessment from set

Description

An `sltest.Assessment` object is an individual assessment result from an `sltest.AssessmentSet` object.

Create Object

Create an `sltest.Assessment` object using `result = get(as, index)` where `as` is an `sltest.AssessmentSet` object.

Properties

BlockPath — Path to assessment

fully specified Simulink block path

Path to block containing the assessment. For a Test Sequence block, the sub path is a path to the test step containing the assessment. See `Simulink.SimulationData.BlockPath`.

Example: `Simulink.SimulationData.BlockPath`

Name — Name of assessment

character vector

Name of the assessment, specified as a character vector. For a `verify()` statement, results in the Test Manager are identified by the name.

Example: `'Simulink:verify_low'`

Values — Assessment timeseries output

timeseries

Output of the assessment, specified as a timeseries.

Example: Values: [1×1 timeseries]

Result — Assessment result

character vector

Result of the assessment.

Example: 'Fail'

Object Functions

disp

Display results of sltest.AssessmentSet or sltest.Assessment

find

Find assessments in sltest.AssessmentSet or sltest.Assessment object

Examples

Get Assessments from a Simulation

This example shows how to simulate a model with `verify` statements and obtain assessment results via the programmatic interface.

Get the Assessment Set and One Assessment Result

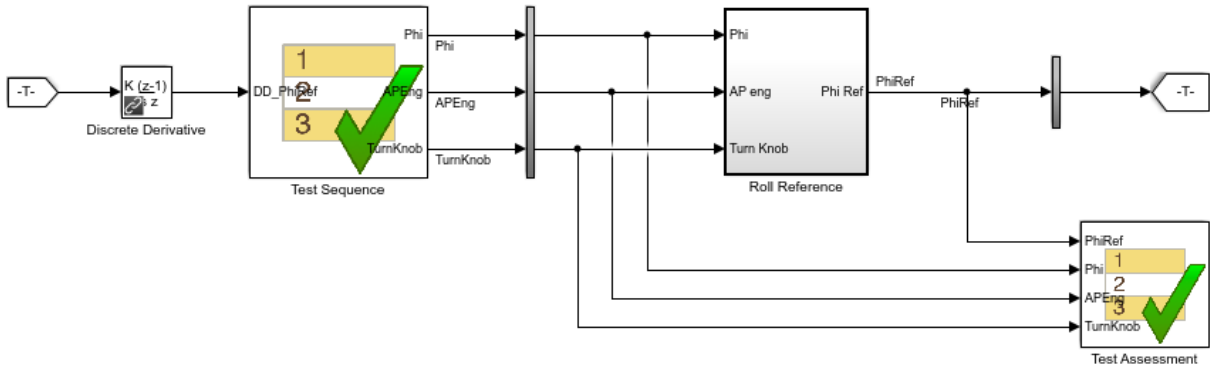
1. Open the model.

```
open_system(fullfile(matlabroot, 'examples', 'simulinktest', 'sltestRollRefTestExample.slx'))
```

```
% Turn the command line warning off for verify() statements
warning off Stateflow:Runtime:TestVerificationFailed
```

This model is used to show how verify() statements work in Test Sequence and Test Assessment blocks.
 The Roll Reference subsystem is a copy of a component of a larger model.
 To view the larger model, enter RollAutopilotMdlRef in MATLAB(R).

Copyright 2016 The MathWorks, Inc



2. Run the model.

```
s = sim('sltestRollRefTestExample');
```

3. Get the assessment set.

```
as = sltest.getAssessments('sltestRollRefTestExample');
```

4. Get assessment 3 from the assessment set.

```
as3 = get(as,3);
```

Display Results of the Assessment Set and Assessment Result

1. Get summary of the assessment set.

```
asSummary = getSummary(as)
```

```
asSummary =
```

```
struct with fields:
```

```

    Total: 6
  Untested: 3
    Passed: 2
    Failed: 1
  Result: Fail

```

2. Display the result of assessment 3.

```
disp(as3)
```

```

sltest.Assessment
Package: sltest

Properties:
  Name: 'Simulink:verify_high'
  BlockPath: [1×1 Simulink.SimulationData.BlockPath]
  Values: [1×1 timeseries]
  Result: Fail

```

3. Find untested or failed results in the assessment set.

```
asFailUntested = find(as, 'Result', slTestResult.Fail, '-or', 'Result', slTestResult.Untested)
```

```
asFailUntested =
```

```

sltest.AssessmentSet
Summary:
  Total: 4
  Untested: 3
  Passed: 0
  Failed: 1
  Result: Fail

```

```

Untested Assessments (first 10):
  2 : Untested 'Simulink:verify_high'
  3 : Untested 'Simulink:verifyTKLow'
  4 : Untested 'Simulink:verifyTKNormal'

```

```

Failed Assessments (first 10):
  1 : Fail 'Simulink:verify_high'

```

4. Find assessments under the Test Assessment block, using a regular expression.

```
assessBlock = find(as, '-regexp', 'BlockPath', '.[Aa]ssess')
```

```
assessBlock =
```

```
sltest.AssessmentSet
```

```
Summary:
```

```
  Total: 6  
  Untested: 3  
  Passed: 2  
  Failed: 1  
  Result: Fail
```

```
Untested Assessments (first 10):
```

```
 4 : Untested 'Simulink:verify_high'  
 5 : Untested 'Simulink:verifyTKLow'  
 6 : Untested 'Simulink:verifyTKNormal'
```

```
Passed Assessments (first 10):
```

```
 1 : Pass 'Simulink:verify_normal'  
 2 : Pass 'Simulink:verify_low'
```

```
Failed Assessments (first 10):
```

```
 3 : Fail 'Simulink:verify_high'
```

See Also

See Also

`sltest.AssessmentSet` | `sltest.getAssessments`

Introduced in R2016b

sltest.AssessmentSet

Access a set of assessments from a simulation

Description

The function `as = sltest.getAssessments('model')` creates an `sltest.AssessmentSet` object `as` containing the assessments for `model`. Individual assessment results are obtained using `result = get(as, index).getSummary(as)` returns an overview of the assessment set. `disp` returns an overview of individual assessment results.

Create Object

Create an `sltest.AssessmentSet` object using `sltest.getAssessments`.

Object Functions

<code>disp</code>	Display results of <code>sltest.AssessmentSet</code> or <code>sltest.Assessment</code>
<code>find</code>	Find assessments in <code>sltest.AssessmentSet</code> or <code>sltest.Assessment</code> object
<code>get</code>	Get assessment of <code>sltest.AssessmentSet</code>
<code>getSummary</code>	Get summary of <code>sltest.AssessmentSet</code>

Examples

Get Assessments from a Simulation

This example shows how to simulate a model with `verify` statements and obtain assessment results via the programmatic interface.

Get the Assessment Set and One Assessment Result

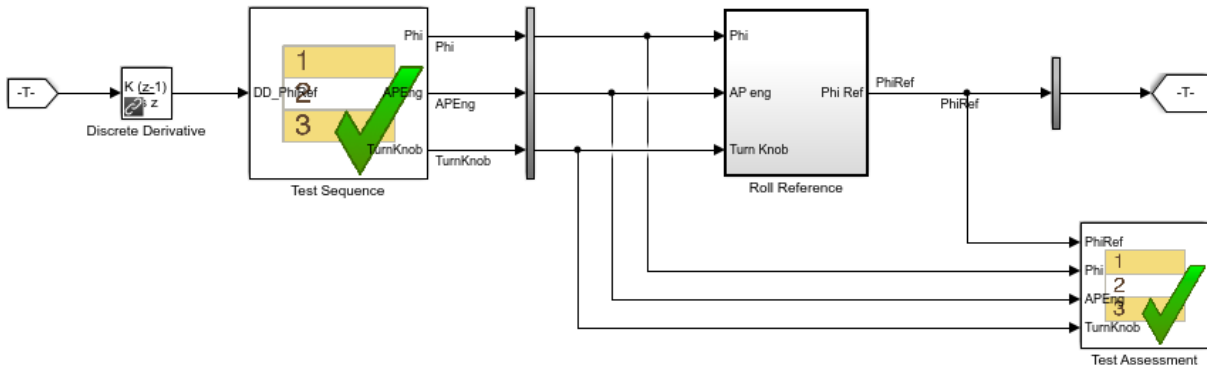
1. Open the model.

```
open_system(fullfile(matlabroot, 'examples', 'simulinktest', 'sltestRollRefTestExample.sl'))
```

```
% Turn the command line warning off for verify() statements
warning off Stateflow:Runtime:TestVerificationFailed
```

This model is used to show how verify() statements work in Test Sequence and Test Assessment blocks.
The Roll Reference subsystem is a copy of a component of a larger model.
To view the larger model, enter RollAutopilotMdlRef in MATLAB(R).

Copyright 2016 The MathWorks, Inc



2. Run the model.

```
s = sim('sltestRollRefTestExample');
```

3. Get the assessment set.

```
as = sltest.getAssessments('sltestRollRefTestExample');
```

4. Get assessment 3 from the assessment set.

```
as3 = get(as,3);
```

Display Results of the Assessment Set and Assessment Result

1. Get summary of the assessment set.

```
asSummary = getSummary(as)
```

```
asSummary =
    struct with fields:
        Total: 6
        Untested: 3
        Passed: 2
        Failed: 1
        Result: Fail
```

2. Display the result of assessment 3.

```
disp(as3)
```

```
sltest.Assessment
Package: sltest

Properties:
    Name: 'Simulink:verify_high'
    BlockPath: [1×1 Simulink.SimulationData.BlockPath]
    Values: [1×1 timeseries]
    Result: Fail
```

3. Find untested or failed results in the assessment set.

```
asFailUntested = find(as, 'Result', slTestResult.Fail, '-or', 'Result', slTestResult.Untested)
```

```
asFailUntested =
    sltest.AssessmentSet
    Summary:
        Total: 4
        Untested: 3
        Passed: 0
        Failed: 1
        Result: Fail
```

```
Untested Assessments (first 10):
    2 : Untested 'Simulink:verify_high'
    3 : Untested 'Simulink:verifyTKLow'
```

```
4 : Untested 'Simulink:verifyTKNormal'
```

```
Failed Assessments (first 10):
```

```
1 : Fail 'Simulink:verify_high'
```

4. Find assessments under the Test Assessment block, using a regular expression.

```
assessBlock = find(as, '-regexp', 'BlockPath', '.[Aa]ssess')
```

```
assessBlock =
```

```
sltest.AssessmentSet
```

```
Summary:
```

```
  Total: 6
```

```
  Untested: 3
```

```
  Passed: 2
```

```
  Failed: 1
```

```
  Result: Fail
```

```
Untested Assessments (first 10):
```

```
4 : Untested 'Simulink:verify_high'
```

```
5 : Untested 'Simulink:verifyTKLow'
```

```
6 : Untested 'Simulink:verifyTKNormal'
```

```
Passed Assessments (first 10):
```

```
1 : Pass 'Simulink:verify_normal'
```

```
2 : Pass 'Simulink:verify_low'
```

```
Failed Assessments (first 10):
```

```
3 : Fail 'Simulink:verify_high'
```

See Also

See Also

`sltest.Assessment` | `sltest.getAssessments`

Introduced in R2016b

sltest.testmanager.BaselineCriteria class

Package: sltest.testmanager

Add or modify baseline criteria

Description

An instance of `sltest.testmanager.BaselineCriteria` is a set of signals in a test case that determines the pass-fail criteria in a baseline test case.

Construction

`obj = sltest.testmanager.TestCase.addBaselineCriteria` creates a `sltest.testmanager.BaselineCriteria` object for a test case object.

Properties

AbsTo1 — Absolute tolerance

scalar

Absolute tolerance for the baseline criteria set, specified as a scalar.

Active — Enabled indicator

0 | 1

Indicates if the baseline criteria is enabled, 0 if it is not enabled, and 1 if it is enabled.

FilePath — File path

character vector

File path of the baseline criteria set, returned as a character vector. This property is read-only.

LaggingTo1 — Lagging time tolerance

scalar

Lagging time tolerance for the baseline criteria set, specified as a scalar.

LeadingTol — Leading tolerance

scalar

Leading time tolerance for the baseline criteria set, specified as a scalar.

Name — Name of baseline criteria

character vector

Name of the baseline criteria, returned as a character vector. This property is read-only.

RelTol — Relative tolerance

scalar

Relative tolerance for the baseline criteria set, specified as a scalar.

Methods

Examples

Add Baseline Criteria and Change Tolerance

This example captures a baseline for a test and changes the absolute tolerance from 0 to 9.

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc, 'baseline_API.mat', true);
```

```
% Set the baseline criteria tolerance for a signal  
sc = getSignalCriteria(baseline);  
sc(1).AbsTol = 9;
```

- “Apply Tolerances to Test Criteria”
- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.SignalCriteria | sltest.testmanager.TestCase

Topics

“Apply Tolerances to Test Criteria”
“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.CoverageSettings class

Package: sltest.testmanager

Modify coverage settings

Description

Instances of `sltest.testmanager.CoverageSettings` let you set the setting under the **Coverage Settings** section in a test file, test suite, or test case.

Construction

The `getCoverageSettings` methods for test file, test suite, and test case objects returns a `sltest.testmanager.CoverageSettings` object, which lets you access the coverage collection and metric settings.

Properties

RecordCoverage — Enable coverage collection

false (default) | true

Specify if the coverage collection is on or off, `false` for off and `true` for on.

Coverage collection is enabled or disabled in the Test Manager under the **Coverage Settings** section. This property controls the **Record coverage for system under test** check box. The **Record coverage for referenced models** check box must be changed manually in the Test Manager and not programmatically.

MetricSettings — Coverage metric setting selection

character vector

Selection of coverage settings that are enabled or disabled, specified as a character vector. For the set of possible character vectors, see the parameter info for `CovMetricSettings` in “Model Parameters” (Simulink). Coverage metric settings can be modified only at a test-file level.

Coverage metrics are enabled or disabled in the Test Manager by selecting the check boxes in the **Coverage Settings** section.

Example: 'dw'

Examples

Enable MCDC and Signal Range Coverage Metrics

```
% Get coverage settings object from the test file
cov = getCoverageSettings(testfile);
cov.RecordCoverage = true;

% Enable MCDC and signal range coverage metrics
cov.MetricSettings = 'mr';
```

- “Collect Coverage in Tests”
- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestFile | sltest.testmanager.TestSuite |
sltest.testmanager.TestCase

Topics

“Collect Coverage in Tests”
“Automate Tests Programmatically”

Introduced in R2016a

sltest.testmanager.CustomCriteria class

Package: sltest.testmanager

Add or modify custom criteria

Description

An instance of `sltest.testmanager.CustomCriteria` is a test case custom criteria that evaluates the simulation output, returning a pass or fail result.

Construction

`obj = getCustomCriteria(tc)` creates an `sltest.testmanager.CustomCriteria` object for a test case object `tc`.

`output_args = function(input_args,Name,Value).`

Properties

Enabled — Enable or disable custom criteria

false (default) | true

Property that enables or disables the custom criteria for evaluation, specified as a logical.

Example: true

Callback — Criteria script

character array

Property that defines the custom criteria script, specified as a character array.

Example: `test.verifyEqual(lastPhi,0,['Final: ',num2str(lastPhi),'.']);`

Examples

Get and Set Custom Criteria in Test Case

Create a test case object from the test suite `ts`.

```
tc = ts.getTestCaseByName('Requirement 1.3 Test');
```

Get the custom criteria from the test case tc.

```
tcCriteria = getCustomCriteria(tc);
```

Set the custom criteria script.

```
tcCriteria.Callback = 'test.verifyEqual(lastPhi,0);'
```

Enable the custom criteria.

```
tcCriteria.Enabled = true;
```

- “Apply Custom Criteria to Test Cases”
- “Custom Criteria Programmatic Interface Example”
- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestCase.getCustomCriteria

Topics

“Apply Custom Criteria to Test Cases”

“Custom Criteria Programmatic Interface Example”

“Automate Tests Programmatically”

Introduced in R2016b

sltest.testmanager.CustomCriteriaResult class

Package: sltest.testmanager

View custom criteria test result

Description

An instance of `sltest.testmanager.CustomCriteriaResult` is a test result of the evaluation of custom criteria.

Construction

`obj = getCustomCriteriaResult(tcr)` creates an `sltest.testmanager.CustomCriteriaResult` object for a test case result object `tcr`.

`obj = getCustomCriteriaResult(tir)` creates an `sltest.testmanager.CustomCriteriaResult` object for a test iteration result object `tir`.

Properties

Outcome — Result of custom criteria evaluation

`sltest.testmanager.TestResultOutcomes` object.

Custom criteria result, returned as an `sltest.testmanager.TestResultOutcomes` object.

Example: Passed

DiagnosticRecord — Criteria script

`sltest.testmanager.DiagnosticRecord` object.

Diagnostic record of the custom criteria result, returned as an `sltest.testmanager.DiagnosticRecord` object.

Example: `DiagnosticRecord`

Examples

Get Custom Criteria Result from Test Case Result

Run the test case `tc`, creating a result set `tcResultSet`.

```
tcResultSet = run(tc);
```

Get the test case result from the result set.

```
tcResult = getTestCaseResults(tcResultSet);
```

Get the custom criteria result from the test case result.

```
ccResult = getCustomCriteriaResult(tcResult);
```

- “Apply Custom Criteria to Test Cases”
- “Custom Criteria Programmatic Interface Example”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestCase.getCustomCriteria`

Topics

“Apply Custom Criteria to Test Cases”

“Custom Criteria Programmatic Interface Example”

“Automate Tests Programmatically”

Introduced in R2016b

sltest.testmanager.DiagnosticRecord class

Package: sltest.testmanager

View custom criteria diagnostic information

Description

An instance of `sltest.testmanager.DiagnosticRecord` displays diagnostic information returned a verification during custom criteria analysis.

Construction

`obj = getCustomCriteriaResult(tcResult)` creates an `sltest.testmanager.CustomCriteriaResult` object, which has a property `DiagnosticRecord`. `DiagnosticRecord` is an `sltest.testmanager.DiagnosticRecord` object for the test case result object `tcResult`.

Properties

Outcome — Record outcome of diagnostic

`sltest.testmanager.TestResultOutcomes` object.

Outcome of diagnostic, returned as an `sltest.testmanager.TestResultOutcomes` object.

Example: Passed

TestDiagnosticResult — Record test diagnostic results

cell array

Diagnostic record of the custom criteria result, returned as a cell array.

Example: 'Final: 0.'

FrameworkDiagnosticResult — Record framework diagnostic results

cell array

Framework diagnostic record of the custom criteria result, returned as a cell array.

Example: 'verifyEqual passed...'

Event — Record event name

character vector

Name of the recorded event, returned as a character vector.

Example: `VerificationPassed`

Report — Record diagnostic information

character vector

Report of the diagnostic result, returned as a character vector.

Exception — Capture error information

`Mexception` object

If the custom criteria returns an error, it constructs an `Mexception` object containing information about the error.

Example: `MException`

Examples

Get Custom Criteria Result from Test Case Result

Run the test case `tc`, creating a result set `tcResultSet`.

```
tcResultSet = run(tc);
```

Get the test case result from the result set.

```
tcResult = getTestCaseResults(tcResultSet);
```

Get the custom criteria result from the test case result.

```
ccResult = getCustomCriteriaResult(tcResult);
```

Display the diagnostic result

```
ccResult.DiagnosticRecord
```

```
ans =
```

```
DiagnosticRecord with properties:
```

```
    Outcome: Passed
    TestDiagnosticResult: {'Final: 0.'}
    FrameworkDiagnosticResult: {'verifyEqual passed....'}
    Event: 'VerificationPassed'
    Report: '=====...'
```

- “Apply Custom Criteria to Test Cases”
- “Custom Criteria Programmatic Interface Example”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestCase.getCustomCriteria`

Topics

“Apply Custom Criteria to Test Cases”

“Custom Criteria Programmatic Interface Example”

“Automate Tests Programmatically”

Introduced in R2016b

sltest.testmanager.EquivalenceCriteria class

Package: sltest.testmanager

Add or modify equivalence criteria

Description

Instances of `sltest.testmanager.EquivalenceCriteria` is a set of signals in a test case that determines the pass-fail criteria in an equivalence test case.

Construction

`obj = sltest.testmanager.TestCase.captureEquivalenceCriteria` creates a `sltest.testmanager.EquivalenceCriteria` object for a test case object.

Properties

Enabled — Enabled indicator

0 | 1

Indicates if the equivalence criteria is enabled, 0 if it is not enabled, and 1 if it is enabled.

Methods

Examples

Add Equivalence Criteria to Test Case

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'equivalence', 'Equivalence Test Case');
```

```
% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
% for Simulation 1 and Simulation 2
setProperty(tc, 'Model', 'sldemo_absbrake', 'SimulationIndex', 1);
setProperty(tc, 'Model', 'sldemo_absbrake', 'SimulationIndex', 2);

% Capture equivalence criteria
eq = captureEquivalenceCriteria(tc);
```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestCase

Topics

“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.Options class

Package: sltest.testmanager

Test file options

Description

Get instances of `sltest.testmanager.Options` to view test file options, including report generation options. For test files, you can also set these options. View options using:

- `sltest.testmanager.TestCase.getOptions`
- `sltest.testmanager.TestSuite.getOptions`
- `sltest.testmanager.TestFile.getOptions`

Construction

`obj = getOptions(test)` returns the test file options object associated with the test case, suite, or file.

Input Arguments

test — Test case, suite, or file

`sltest.testmanager.TestCase` object | `sltest.testmanager.TestSuite` object | `sltest.testmanager.TestFile` object

Test case, suite, or file, specified as an `sltest.testmanager.TestCase`, `sltest.testmanager.TestSuite`, or `sltest.testmanager.TestFile` object.

Properties

Author — Report author

character vector

Author of the report, specified as a character vector.

CloseFigures — Option to close figures at end of test

false (default) | true

Option to close figures at the end of the test, specified as `true` to close the figures and `false` to leave them open.

CustomReportClass — Custom report generation class

character vector

Custom report generation class, specified as a character vector. For information, see “Customize Test Reports”.

CustomTemplateFile — Path name of report generation custom template file

character vector

Path name of report generation custom template file, specified as a character vector. For information, see “Customize Test Reports”.

GenerateReport — Option to generate a report at end of test

false (default) | true

Option to generate a report at the end of the test, specified as `true` or `false`.

IncludeComparisonSignalPlots — Option to include simulation output and baseline plots in reports

false (default) | true

Option to include simulation output and baseline plots in report, specified as `true` or `false`.

IncludeCoverageResult — Option to include coverage results in reports

true (default) | false

Option to include coverage results in reports, specified as `true` or `false`.

IncludeErrorMessage — Option to include error and log messages in reports

true (default) | false

Option to include error and log messages in reports, specified as `true` or `false`.

IncludeMATLABFigures — Option to include figures generated from MATLAB code in reports

false (default) | true

Option to include figures generated from MATLAB code in reports, specified as `true` or `false`. Specify the MATLAB code as custom criteria on the test case or as a callback on the test case, suite, or file. You must also set `SaveFigures` to `true` for this setting to take effect.

IncludeMLVersion — Option to include MATLAB version in report

`true` (default) | `false`

Option to include the MATLAB version you are running in the report, specified as `true` or `false`.

IncludeSimulationMetadata — Option to include simulation metadata in reports

`true` (default) | `false`

Option to include simulation metadata in reports, specified as `true` or `false`.

IncludeSimulationSignalPlots — Option to include criteria and assessment plots in reports

`false` (default) | `true`

Option to include criteria and assessment plots in reports, specified as `true` or `false`.

IncludeTestRequirement — Option to include test requirements in reports

`true` (default) | `false`

Option to include test requirements in reports, specified as `true` or `false`.

IncludeTestResults — Test results to include in the report

'failed' (default) | 'passed' | 'all' | enumerated
sltest.testmanager.TestResultsIncludedInReport value

Test results to include in the report, specified as 'failed', 'passed', or 'all'. You can alternatively use an enumerated value:

- sltest.testmanager.TestResultsIncludedInReport.AllTests
- sltest.testmanager.TestResultsIncludedInReport.FailedOnly
- sltest.testmanager.TestResultsIncludedInReport.PassedOnly

ReportFormat — Output format for report

'pdf' (default) | 'zip' | 'doc' | enumerated
sltest.testmanager.ReportFileFormat value

Output format for report, specified as 'pdf', 'zip', or 'docx'. You can alternatively use an enumerated value:

- `sltest.testmanager.ReportFileFormat.doc`
- `sltest.testmanager.ReportFileFormat.pdf`
- `sltest.testmanager.ReportFileFormat.zip`

ReportPath — Path name of file to save report to

character vector

Path name of file to save report to, specified as a character vector.

SaveFigures — Option to save MATLAB figures with test results

false (default) | true

Option to save MATLAB figures with test results, specified as true or false. Set this option to 'true' if you want to include figures in results or reports.

Title — Title of report

character vector

Title of the report, specified as a character vector.

Examples

Get and Set Test File Options

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf,'API Test Suite');
tc = createTestCase(ts,'baseline','Baseline API Test Case');

% Get the test file options
opt = getOptions(tf);

% Set the title for the report and save figures
opt.Title = 'ABC Co. Test Results';
opt.SaveFigures = true;
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

sltest.testmanager.TestCase.getOptions | sltest.testmanager.TestFile.getOptions |
sltest.testmanager.TestSuite.getOptions

Topics

“Create, Store, and Open MATLAB Figures”
“Export Test Results and Generate Reports”

Introduced in R2017a

sltest.testmanager.ParameterOverride class

Package: sltest.testmanager

Add or modify parameter override

Description

Instances of `sltest.testmanager.ParameterOverride` are parameters overrides contained in a parameter set within a test case that can override model parameters.

Construction

`obj = sltest.testmanager.ParameterSet.AddParameterOverride` creates a `sltest.testmanager.ParameterOverride` object for a parameter set object.

Properties

Name — Parameter override name

character vector

Name of the parameter override, specified as a character vector.

Value — Override value

scalar | vector

Value of the parameter override, specified as a scalar or vector value.

Enabled — Enabled indicator

0 | 1

Indicates if the parameter override is enabled, 0 if it is not enabled, and 1 if it is enabled.

Source — Parameter override source

character vector

The source of the parameter variable, returned as a character vector. For example, the source could be the base workspace.

Methods

Examples

Add Parameter Override to Test Case

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc, 'Name', 'API Parameter Set');
po = addParameterOverride(ps, 'm', 55);
```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.ParameterSet | sltest.testmanager.TestCase

Topics

“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.ParameterSet class

Package: sltest.testmanager

Add or modify parameter set

Description

Instances of `sltest.testmanager.ParameterSet` are sets of parameters in a test case that can override model parameters.

Construction

`obj = sltest.testmanager.TestCase.addParameterSet` creates a `sltest.testmanager.ParameterSet` object for a test case object.

Properties

Name — Parameter set name

character vector

Name of the parameter set, specified as a character vector.

FilePath — File path

character vector

File path of the parameter set if parameters were added from a file, returned as a character vector.

Enable — Enabled indicator

0 | 1

Indicates if the parameter set is enabled, 0 if it is not enabled, and 1 if it is enabled.

Methods

Examples

Add Parameter Override to Test Case

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc, 'Name', 'API Parameter Set');
po = addParameterOverride(ps, 'm', 55);
```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestCase

Topics

“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.ResultSet class

Package: sltest.testmanager

Access results set data

Description

Instances of `sltest.testmanager.ResultSet` enable you to access the results from test execution performed by the Test Manager.

Construction

The function `sltest.testmanager.run` creates a `sltest.testmanager.ResultSet` object.

Properties

NumPassed — Number of passed tests

integer

The number of passed tests contained in the results set.

NumFailed — Number of failed tests

integer

The number of failed tests contained in the results set.

NumDisabled — Number of disabled tests

integer

The number of test cases that were disabled in the results set.

NumTotal — Total number of tests

integer

The total number of tests in the results set.

NumTestCaseResults — Number of test case result children

integer

The number of test case results that are direct children of the results set object.

NumTestSuiteResults — Number of test suite result children

integer

The number of test suite results that are direct children of the results set object.

NumTestFileResults — Number of test file result children

integer

The number of test file results that are direct children of the results set object.

Methods

Examples

Get Test Result Set Data

Get results from running a test file with `sltest.testmanager.run`.

```
result = sltest.testmanager.run;  
testCaseResultArray = result.getTestCaseResults;  
testSuiteResultArray = result.getTestSuiteResults;
```

- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestFileResult` | `sltest.testmanager.TestSuiteResult` | `sltest.testmanager.TestCaseResult`

Topics

“Automate Tests Programmatically”

Introduced in R2015a

sltest.testmanager.SignalCriteria class

Package: sltest.testmanager

Add or modify signal criteria

Description

An instance of `sltest.testmanager.SignalCriteria` is an individual signal in a criteria set in a test case that determines the pass-fail criteria.

Construction

`obj = getAllSignalCriteria` creates a `sltest.testmanager.SignalCriteria` object for a baseline or equivalence test case object.

Properties

AbsTo1 — Absolute tolerance

scalar

Absolute tolerance at a signal level, specified as a scalar. Set this value on the signal to override the value set in the baseline or equivalence criteria set.

BlockPath — Signal block path

character vector

Signal block path, returned as a character vector. This property is read-only.

DataSource — Signal data source

character vector

Signal data source, returned as a character vector. This property is read-only.

Enabled — Enabled indicator

0 | 1

Indicates if the signal criteria is enabled, 0 if it is not enabled, and 1 if it is enabled.

InterpMethod — Interpolation method

'zoh' | 'linear'

The method of interpolation used to align signal data, specified as 'zoh' or 'linear'. The method can be one of the following:

- 'zoh' — Zero-order hold. Data values are interpolated by holding their value at the previous time point.
- 'linear' — Interpolated data values are determined by taking the data values at the previous and next time points. These two points form the linear interpolant, which becomes a straight line between these points. The interpolated data value is the point at which the linear interpolant and time point meet.

LaggingTol — Lagging time tolerance

scalar

Lagging time tolerance at a signal level, specified as a scalar. Set this value on the signal to override the value set in the baseline or equivalence criteria set.

LeadingTol — Leading tolerance

scalar

Leading time tolerance at a signal level, specified as a scalar. Set this value on the signal to override the value set in the baseline or equivalence criteria set.

Name — Signal name

character vector

Signal name, returned as a character vector. This property is read-only.

RelTol — Relative tolerance

scalar

Relative tolerance at a signal level, specified as a scalar. Set this value on the signal to override the value set in the baseline or equivalence criteria set.

SID — Signal identifier

character vector

Signal identifier, returned as a character vector. This property is read-only.

SyncMethod — Time synchronization method

'union' | 'intersection' | 'uniform'

The method of time synchronization used when a signal is compared to another signal, specified as 'union', 'intersection', or 'uniform'. The method can be one of the following:

- 'union' — Compare using a time vector that is the union of the time vectors of both timeseries. This method of time synchronization might require value interpolation.
- 'intersection' — Compare using a time vector that is the intersection of the time vectors of both timeseries. This method of time synchronization does not require value interpolation because only time points common to both time series are considered.
- 'uniform' — Compare using a time vector that is constructed using uniform time steps. This method of time synchronization requires value interpolation in both timeseries.

Methods

Examples

Set Absolute Tolerance in Baseline Criteria

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc, 'baseline_API.mat', true);

% Test a new model parameter by overriding it in the test case
% parameter set
```

```
ps = addParameterSet(tc, 'Name', 'API Parameter Set');  
po = addParameterOverride(ps, 'm', 55);
```

```
% Set the baseline criteria tolerance for one signal  
sc = getSignalCriteria(baseline);  
sc(1).AbsTol = 9;
```

- “Automate Tests Programmatically”
- “Apply Tolerances to Test Criteria”

See Also

See Also

sltest.testmanager.BaselineCriteria | sltest.testmanager.EquivalenceCriteria |
sltest.testmanager.TestCase

Topics

“Automate Tests Programmatically”
“Apply Tolerances to Test Criteria”

Introduced in R2015b

sltest.testmanager.TestCase class

Package: sltest.testmanager

Create or modify test case

Description

Instances of `sltest.testmanager.TestCase` are test case objects.

If you want to modify the test case settings that define how the test case executes, use the methods `sltest.testmanager.TestCase.setProperty` and `sltest.testmanager.TestCase.getProperty`.

Construction

`obj = sltest.testmanager.TestCase(parent, type, name)` creates a `sltest.testmanager.TestCase` object as a child of the specified parent. You can specify the name of the test case and the test case type: baseline, equivalence, or simulation.

Input Arguments

parent — Parent test suite

`sltest.testmanager.TestSuite` object

Parent test suite for the test case to reside in, specified as an `sltest.testmanager.TestSuite` object.

type — Test case type

'baseline' (default) | 'equivalence' | 'simulation'

Test case type, specified as 'baseline', 'equivalence', or 'simulation'. There are three test case types: baseline, equivalence, and simulation.

name — Test case name

character vector

Name of the test suite, specified as a character vector. If this is empty, a unique name is created.

Example: 'Test Case 5'

runOnTarget — Run simulation on target

cell array of Booleans

Specify if you want to run the test case simulation on a target, specified as a cell array of Booleans. This is an optional argument. For more information on real-time testing, see “Test Models in Real Time”.

Properties

Name — Test case name

character vector

Name of the test case, returned as a character vector.

Description — Test case description

character vector

Test case description text, specified as a character vector.

Enabled — Test execution indicator

true | false

Indicates if the test case will execute, specified as a logical value `true` or `false`.

ReasonForDisabling — Disabled description

character vector

Description text for why the test file was disabled, specified as a character vector. This property is visible only when the `Enabled` property is set to `false`.

TestType — Test case type

character vector

The test case type, returned as a character vector. The test case type can be one of the three types: simulation, equivalence, or baseline.

TestFile — Parent test file

sltest.testmanager.TestFile object

Test file that is the parent of the test case, returned as an sltest.testmanager.TestFile object.

TestPath — Test hierarchy

character vector

Test file, test suite, and test case hierarchy, returned as a character vector.

Parent — Parent test suite

sltest.testmanager.TestSuite object

Test suite that is the parent of the specified test case, returned as an sltest.testmanager.TestSuite object.

Requirements — Test file requirements

structure array

The requirements that are attached at the test-file level, returned as a structure.

RunOnTarget — Target indicator

cell array

Indicates if the simulation runs on a target, returned as a cell array of Booleans.

Methods

Examples

Create New Test File, Test Suite, and Test Case

```
% Create test file
testfile = sltest.testmanager.TestFile('C:\MATLAB\test_file.mldatx');

% Create test suite
testsuite = sltest.testmanager.TestSuite(testfile, 'My Test Suite');

% Create test case
```

```
testcase = sltest.testmanager.TestCase(testsuite, 'equivalence', ...  
    'Equivalence Test Case')
```

```
testcase =
```

```
    TestCase with properties:
```

```
        Name: 'Equivalence Test Case'  
        TestFile: [1x1 sltest.testmanager.TestFile]  
        TestPath: 'test_file > My Test Suite > Equivalence Test Case'  
        TestType: 'equivalence'  
        RunOnTarget: {2x1 cell}  
            Parent: [1x1 sltest.testmanager.TestSuite]  
        Requirements: [0x1 struct]  
        Description: ''  
        Enabled: 1
```

- “Automate Tests Programmatically”

See Also

See Also

[sltest.testmanager.TestFile](#) | [sltest.testmanager.TestSuite](#)

Topics

“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.TestCaseResult class

Package: sltest.testmanager

Access test case results data

Description

Instances of `sltest.testmanager.TestCaseResult` enable you to access the results from test execution performed by the test manager at a test-case level.

Construction

The function `sltest.testmanager.run` creates a `sltest.testmanager.ResultSet` object, which contains the test case result object. You can also create a test case result directly if you use `sltest.testmanager.TestCase.run` to execute an individual test case.

Properties

NumPassedIterations — Number of passed tests

integer

The number of passed tests in an individual test case result, returned as an integer.

NumFailedIterations — Number of failed tests

integer

The number of failed tests in an individual test case result, returned as an integer.

NumDisabledIterations — Number of disabled tests

integer

The number of disabled tests in an individual test case result, returned as an integer.

NumIncompleteIterations — Number of incomplete tests

integer

The number of incomplete tests in an individual test case result, returned as an integer.

NumTotalIterations — Total number of tests

integer

The total number of tests in an individual test case result, returned as an integer.

Outcome — Outcome of test case result

0 | 1 | 2 | 3

The outcome of an individual test case result. The integer 0 means the test case was disabled, 1 means the test case execution was incomplete, 2 means the test case passed, and 3 means the test case failed.

TestFilePath — Test file path

character vector

The path of the test file used to create the test case result.

TestCasePath — Result hierarchy path

character vector

The hierarchy path in the parent result set.

TestCaseType — Type of test case

'Simulation' | 'Baseline' | 'Equivalence'

The type of test case from the three available test cases in the Test Manager: simulation, baseline, and equivalence.

RunOnTarget — Target indicator

cell array

Indicates if the simulation runs on a target, returned as a cell array of Booleans.

Methods

Examples

Get Test Case Result From Results Set

```
% Run test file in Test Manager and output results set
```

```
resultset = sltest.testmanager.run;  
  
% Get test file result object  
tfr = getTestFileResults(resultset);  
  
% Get test suite result object  
tsr = getTestSuiteResults(tfr);  
  
% Get test case result object  
tcr = getTestCaseResults(tsr);
```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestSuiteResult | sltest.testmanager.TestFileResult

Topics

“Automate Tests Programmatically”

Introduced in R2015a

sltest.testmanager.TestFile class

Package: sltest.testmanager

Create or modify test file

Description

Instances of `sltest.testmanager.TestFile` are files that can contain test suites and test cases.

Construction

`obj = sltest.testmanager.TestFile(filePath,mode)` creates a `sltest.testmanager.TestFile` object with a default test suite and test case as children of the test file. The default test case type is a baseline test case. If the test file exists in the Test Manager, then a new test file is not created.

Input Arguments

filePath — File name and path

character vector

The file name and path of the test file, specified as a character vector. The specified file name determines the name of the test file as seen in the Test Manager.

Example: `'C:\MATLAB\TestFile.mldatx'`

mode — Override existing test files

'false' (default) | 'true'

Indicate if you want to override a test file with the same file name and path, specified as either 'true' or 'false'.

Properties

Description — Test file description

character vector

Test file description text, specified as a character vector.

Dirty — Unsaved changes indicator

0 | 1

Indicates if the test file has unsaved changes, 0 if there are no unsaved changes, and 1 if there are unsaved changes.

Enabled — Test file execution indicator

true | false

Indicates if test cases that are children of the test file will execute, specified as a logical value `true` or `false`.

FilePath — File path and name

character vector

File path and name of the test file, returned as a character vector.

Example: 'C:\MATLAB\test_file.mldatx'

Name — Test file name

character vector

Name of the test file without the file path and file extension, returned as a character vector.

ReasonForDisabling — Disabled description

character vector

Description text for why the test file was disabled, specified as a character vector. This property is visible only when the `Enabled` property is set to `false`.

Requirements — Test file requirements

structure array

The requirements that are attached at the test-file level, returned as a structure.

Methods

Examples

Create New Test File

Create a new test file and return the test file object.

```
testfile = sltest.testmanager.TestFile('C:\MATLAB\test_file.mldatx')
```

```
testfile =
```

```
    TestFile with properties:
```

```
        Name: 'test_file'  
        FilePath: 'C:\MATLAB\test_file.mldatx'  
        Dirty: 1  
        Requirements: [0x1 struct]  
        Description: ''  
        Enabled: 1
```

- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestCase` | `sltest.testmanager.TestSuite`

Topics

“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.TestFileResult class

Package: sltest.testmanager

Access test file results data

Description

Instances of `sltest.testmanager.TestFileResult` enable you to access the results from test execution performed by the Test Manager at a test-file level.

Construction

The function `sltest.testmanager.run` creates a `sltest.testmanager.ResultSet` object, which contains the test file result object. You can also create a test file result directly if you use `sltest.testmanager.TestFile.run` to execute tests in an individual test file.

Properties

TestFileResultPath — Result hierarchy path

character vector

The hierarchy path in the result set.

TestFilePath — Test file path

character vector

The path of the test file used to create the result.

NumPassed — Number of passed tests

integer

The number of passed tests contained in the test file result.

NumFailed — Number of failed tests

integer

The number of failed tests contained in the test file result.

NumDisabled — Number of disabled tests

integer

The number of test cases that were disabled in the test file result.

NumIncomplete — Number of incomplete tests

integer

The number of test cases that did not execute in the test file result.

NumTotal — Total number of tests

integer

The total number of tests in the test file result.

NumTestCaseResults — Number of test case result children

integer

The number of test case results that are direct children of the test file result.

NumTestSuiteResults — Number of test suite result children

integer

The number of test suite results that are direct children of the test file result.

Methods

Examples

Get Test File Result From Results Set

```
% Run test file in Test Manager and output results set  
resultset = sltest.testmanager.run;
```

```
% Get the test file result object  
tfr = getTestFileResults(resultset);
```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestSuiteResult | sltest.testmanager.TestCaseResult

Topics

“Automate Tests Programmatically”

Introduced in R2016a

sltest.testmanager.TestInput class

Package: sltest.testmanager

Add or modify test input

Description

Instances of `sltest.testmanager.TestInput` are sets of signal input data that can be mapped to override the inputs in the System Under Test.

Construction

`obj = sltest.testmanager.TestCase.addInput` creates a `sltest.testmanager.TestInput` object for a test case object.

Properties

Name — Test input name

character vector

Name of the test input, returned as a character vector.

Example: 'sltestExampleInputs.xlsx'

FilePath — File path

character vector

File path of the test input, returned as a character vector.

Example: 'C:\MATLAB\sltestExampleInputs.xlsx'

SheetName — Spreadsheet name

character vector

If the input file is a Microsoft Excel[®] spreadsheet file, then this is the name of the spreadsheet from which the inputs are derived, specified as a character vector.

Example: 'Acceleration'

MappingStatus — Input mapping status

character vector

Mapping status to indicate if the inport mapping was successful. For more information about troubleshooting the mapping status, see “Understand Mapping Results” (Simulink).

Example: 'Successfully mapped inputs.'

InputString — Input

character vector

Evaluated during test case execution in the `LoadExternalInput` configuration parameter of the System Under Test, specified as a character vector.

Example: 'Acceleration.getElement(1),Acceleration.getElement(2)'

Active — Enabled indicator

0 | 1

Indicates if the input is set to override in the test case, 0 if it is not enabled, and 1 if it is enabled.

Methods

Examples

Add Microsoft Excel Data as Input

You can add data from a Microsoft Excel spreadsheet. The spreadsheet used in this example is located in the example folder directory.

```
% Load example model
open_system('sltestExcelExample');

% Create new test file
tf = sltest.testmanager.TestFile('C:\MATLAB\input_test_file.mldatx');
% Get test suite object
```

```
ts = getTestSuites(tf);
% Get test case object
tc = getTestCases(ts);

% Add the example model as the system under test
setProperty(tc, 'Model', 'sltestExcelExample');

% Add Excel data to Inputs section
input_path = fullfile(matlabroot, 'toolbox', 'simulinktest', ...
    'simulinktestdemos', 'sltestExampleInputs.xlsx');
input = addInput(tc, input_path, 1);
% Map the input signals by port order
map(input, 3);
```

- “Automate Tests Programmatically”

See Also

See Also

[sltest.testmanager.TestCase.addInput](#) | [sltest.testmanager.TestCase](#)

Topics

“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.TestIteration class

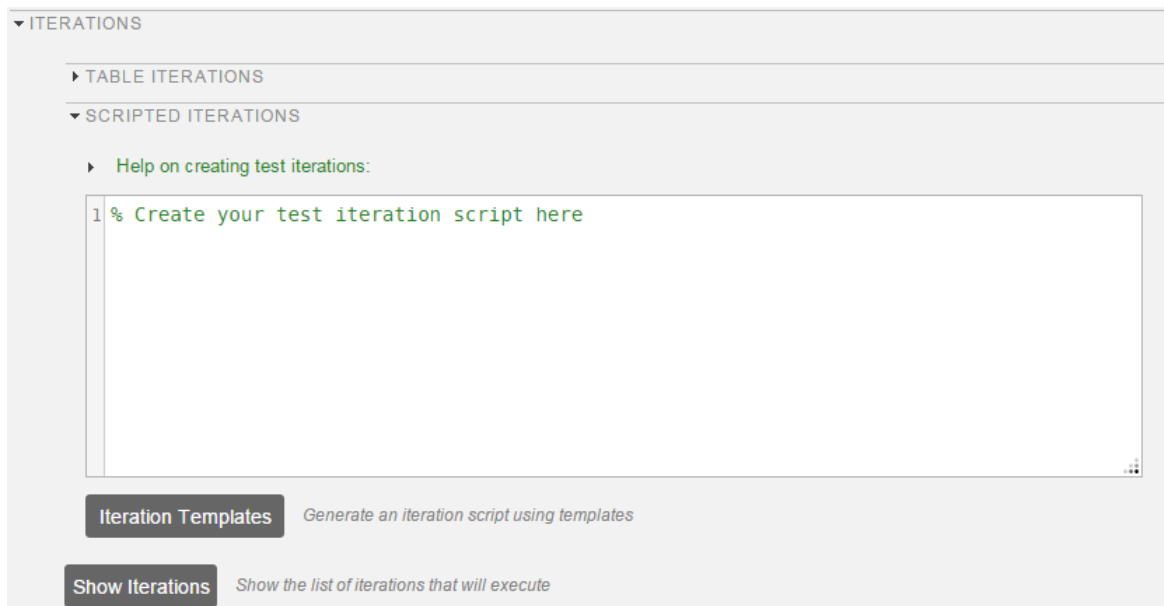
Package: sltest.testmanager

Create or modify test iteration

Description

Iterations let you test a combination of model settings for testing methods such as Monte Carlo and parameter sweeping. Iterations initialize during test execution but before model callbacks and test callbacks. Once you create a test iteration object, you can override aspects of the test case for each iteration using the class methods.

You create your iteration script in the text window under the **Iterations** section of a test case. Iteration scripts cannot run in the MATLAB command window.



The screenshot shows the 'ITERATIONS' section of a test case editor. It contains a 'TABLE ITERATIONS' section and a 'SCRIPTED ITERATIONS' section. Under 'SCRIPTED ITERATIONS', there is a link for 'Help on creating test iterations:' and a text area with the placeholder text '1 % Create your test iteration script here'. At the bottom, there are two buttons: 'Iteration Templates' with the tooltip 'Generate an iteration script using templates' and 'Show Iterations' with the tooltip 'Show the list of iterations that will execute'.

The examples scripts in this reference page must be inserted into this section and other sections of the test case must be defined. For more information on iterations and scripted iterations, see “Run Multiple Combinations of Tests Using Iterations”.

Construction

`iterationObj = sltest.testmanager.TestIteration` returns a test iteration object. The object is used to construct a single iteration in a test case. Each iteration you want to create in the test must use a single iteration object.

You can also create a test iteration within a iteration script using the `sltestiteration` function.

If you use a `for` loop in the MATLAB command window to add many iterations to a test case, then the MATLAB command window might become temporarily unusable. The recommended way to add iterations to a test case using the MATLAB command window is by vectorization. For example:

```
iterations(100) = sltest.testmanager.TestIteration;  
addIteration(tc,iterations);
```

Properties

Name — Iteration name

empty (default) | character vector

Name of the test iteration, specified as a character vector. The iteration name must be unique from other iterations in the test case.

Example: `'Iteration 1a'`

ModelParams — Model parameter overrides

empty (default) | cell array

Set of model parameter overrides for the iteration, returned as a cell array of character vectors.

TestParams — Test parameter settings

empty (default) | cell array

Set of test parameter settings for the iteration, returned as a cell array of character vectors.

Variables — Model variable overrides

empty (default) | cell array

Set of model variable overrides for the iteration, returned as a cell array of character vectors.

Methods

Examples

Model Parameter Sweep

In this example of a scripted iteration, specify the model in the test case to be `sldemo_absbrake`. The iterations are generated during test execution. This section of script is in the **Scripted Iterations** section of the test case. It will execute only in the **Scripted Iterations** section. The `sltest_testCase` is a variable defined for you in the **Scripted Iterations** section, which is the parent test case object of the iteration.

```
% Specify the parameter sweep
vars = 32 : 0.5 : 34;

% Create iteration for each parameter using a loop
for k = 1 : length(vars)

    % Create test iteration object
    testItr = sltest.testmanager.TestIteration;

    % Set the parameter value for this iteration
    setVariable(testItr, 'Name', 'g', 'Source', 'base workspace', 'Value', vars(k));

    str = sprintf('Iteration %d', k);

    % Add the iteration object to the test case
    addIteration(sltest_testCase, testItr, str);
end
```

Iterate Over Parameter Sets

In this example of a scripted iteration, there must be parameter sets defined in the **Parameter Overrides** section of the test case. The iterations are generated during test execution. This section of script is in the **Scripted Iterations** section of the test case. It will execute only in the **Scripted Iterations** section. The `sltest_testCase` is a

variable defined for you in the **Scripted Iterations** section, which is the parent test case object of the iteration.

```
% Define parameter sets for a test case and add this code in the
% Scripted iterations section of the test case
for k = 1 : length(sltest_parameterSets)

    % Create test iteration object
    testItr = sltest.testmanager.TestIteration;

    % Use the parameter set in this iteration
    testItr.setTestParam('ParameterSet',sltest_parameterSets{k});

    str = sprintf('ParameterSet %d',k);

    % Add the iteration object to the test case
    addIteration(sltest_testCase,testItr,str);
end
```

- “Run Multiple Combinations of Tests Using Iterations”
- “Automate Tests Programmatically”

Alternatives

If you do not want to use a script to create iterations, then you can use table iterations in the test case. For more information about table iterations, see “Run Multiple Combinations of Tests Using Iterations”.

See Also

See Also

sltest.testmanager.TestIterationResult

Topics

“Run Multiple Combinations of Tests Using Iterations”
“Automate Tests Programmatically”

Introduced in R2016a

sltest.testmanager.TestIterationResult class

Package: sltest.testmanager

Access test iteration result data

Description

Instances of `sltest.testmanager.TestIterationResult` enable you to access the results from test execution performed by the Test Manager at a test-iteration level. The hierarchy of test results is Result Set > Test File Result > Test Suite Result > Test Case Result > Test Iteration Result.

Construction

The function `sltest.testmanager.run` creates a `sltest.testmanager.ResultSet` object, which contains the test case result object.

Properties

Outcome — Outcome of test iteration result

0 | 1 | 2 | 3

The outcome of an individual test iteration result. The integer 0 means the test iteration was disabled, 1 means the test iteration execution was incomplete, 2 means the test iteration passed, and 3 means the test iteration failed.

TestFilePath — Test file path

character vector

The path of the test file used to create the test iteration result.

TestCasePath — Result hierarchy path

character vector

The hierarchy path in the parent result set.

TestCaseType — Type of test case

'Simulation' | 'Baseline' | 'Equivalence'

The type of test case from the three available test cases in the Test Manager: simulation, baseline, and equivalence.

RunOnTarget — Target indicator

cell array

Indicates if the simulation ran on the target or not, returned as an array of Booleans.

Methods

Examples

Get Test Iteration Results

```
% Create the test file, suite, and case
tf = sltest.testmanager.TestFile('Get Test Iteration Results File');
ts = createTestSuite(tf, 'Test Suite');
tc = createTestCase(ts, 'baseline', 'Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Specify iterations
vars = 32 : 0.5 : 34;

for k = 1 : length(vars)

    % Create test iteration object
    testItr = sltest.testmanager.TestIteration;

    % Set the parameter value for this iteration
    setVariable(testItr, 'Name', 'g', 'Source', 'base workspace', 'Value', vars(k));

    str = sprintf('Iteration %d', k);
```

```
    % Add the iteration object to the test case
    addIteration(tc, testItr, str);
end
```

```
% Run the test and capture results
resultset = run(tf);
tfr = getTestFileResults(resultset);
tsr = getTestSuiteResults(tfr);
tcr = getTestCaseResults(tsr);
tir = getIterationResults(tcr);
```

```
% Get the test case type from first iteration
testType = tir(1).TestCaseType;
```

- “Run Multiple Combinations of Tests Using Iterations”
- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestIteration

Topics

“Run Multiple Combinations of Tests Using Iterations”
“Automate Tests Programmatically”

Introduced in R2016a

sltest.testmanager.TestResultReport class

Package: sltest.testmanager

Customize generated results report

Description

`sltest.testmanager.TestResultReport` is a class that enables you to customize report generation of result from the Test Manager. You can derive the class and override various methods to customize your report. By customizing the methods, you can change the report title, plots, tables, headers, icons, and more.

For more information and examples on customizing reports, see “Customize Test Reports”.

Construction

`Obj = sltest.testmanager.TestResultReport(resultObjects, reportFilePath)` creates a report generation object.

To use this class, you must inherit from the class. Use the following code as the first lines in your class definition code to inherit from the class.

```
% class definition
classdef CustomReport < sltest.testmanager.TestResultReport
    %
    % Report customization code here
    %
end
```

Input Arguments

resultObjects — Results set object
object

Results set object to get results from, specified as an `sltest.testmanager.ResultSet` object.

reportFilePath — File name and path of the generated report

character vector

File name and path of the generated report. File path must have file extension of pdf, docx, or zip, which are the only supported file types.

Example: 'C:\MATLAB\Report.pdf'

Properties

AuthorName — Author name

empty character vector (default)

The name of the author or the generated report, specified as a character vector.

Example: 'Test Engineer'

BodyFontColor — Body paragraph font color

'Black' (default) | character vector

Body paragraph text font color, specified as a character vector.

Example: 'Red'

BodyFontName — Body paragraph font style name

'Arial' (default) | character vector

Body paragraph text font-style name, specified as a character vector.

Example: 'Times New Roman'

BodyFontSize — Body paragraph font size

'12pt' (default) | character vector

Body paragraph text font size, specified in points as a character vector.

Example: '14pt'

ChapterIndent — First level indentation width

'3mm' (default) | character vector

First level section indentation width, specified in millimeters as a character vector.

Example: '5mm'

ChapterIndentL2 — Second level indentation width

'6mm' (default) | character vector

Second level section indentation width, specified in millimeters as a character vector.

Example: '8mm'

ChapterIndentL3 — Third level indentation width

'8mm' (default) | character vector

Third level section indentation width, specified in millimeters as a character vector.

Example: '10mm'

CustomTemplateFile — Template file name and path

empty character vector (default)

The file name and path to a Microsoft Word template file for report customization, specified as a character vector. For more information about using template files, see “Generate Reports Using Templates”. The use of this argument is valid only available if you have a MATLAB Report Generator license.

Example: 'C:\MATLAB\CustomReportTemplate.dotx'

HeadingFontColor — Section heading font color

'Black' (default) | character vector

Section heading text font color, specified as a character vector.

Example: 'Blue'

HeadingFontName — Section heading font style name

'Arial' (default) | character vector

Section heading text font-style name, specified as a character vector.

Example: 'Times New Roman'

HeadingFontSize — Section heading font size

'14pt' (default) | character vector

Section heading text font color, specified in points as a character vector.

Example: '16pt'

IconFileOutcomeDisabled — Disabled test result icon

empty character vector (default)

File name and path of an icon image for a disabled test result, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\disabled_test_icon.png'

IconFileOutcomeFailed — Failed test result icon

empty character vector (default)

File name and path of an icon image for a failed test result, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\failed_test_icon.png'

IconFileOutcomeIncomplete — Incomplete test result icon

empty character vector (default)

File name and path of an icon image for an incomplete test result, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\incomplete_test_icon.png'

IconFileOutcomeMisaligned — Misaligned test result icon

empty character vector (default)

File name and path of an icon image for a misaligned test result, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\misaligned_test_icon.png'

IconFileOutcomePassed — Passed test result icon

empty character vector (default)

File name and path of an icon image for a passed test result, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\passed_test_icon.png'

IconFileTestCaseResult — Test case result icon

empty character vector (default)

File name and path of an icon image for a test case result, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\test_case_result_icon.png'

IconFileTestFileResult — Test file result icon

empty character vector (default)

File name and path of an icon image for a test file result, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\test_file_result_icon.png'

IconFileTestIterationResult — Iteration result icon

empty character vector (default)

File name and path of an icon image for an iteration result, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\iteration_result_icon.png'

IconFileTestSuiteResult — Test suite result icon

empty character vector (default)

File name and path of an icon image for a test suite result, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\test_suite_result_icon.png'

IconModelReference — Model reference icon

empty character vector (default)

File name and path of an icon image for a model reference in the coverage report, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\model_reference_icon.png'

IconTopLevelModel — Top-level model icon

empty character vector (default)

File name and path of an icon image for a top-level model in the coverage report, specified as a character vector. The icon file specified replaces the default icon image. The icon image is reduced to 16x16 pixels.

Example: 'C:\MATLAB\top_level_model_icon.png'

IncludeComparisonSignalPlots — Include comparison signal plots

false (default) | true

Include the signal comparison plots in the report, specified as `true` or `false`.

IncludeCoverageResult — Include coverage results

false (default) | true

Include the coverage results in the report, specified as `true` or `false`.

IncludeErrorMessage — Include error messages

true (default) | false

Include error messages in the report, specified as `true` or `false`.

IncludeMWVersion — Include MATLAB version

true (default) | false

Include the version of MATLAB used to run the tests in the report, specified as `true` or `false`.

IncludeSimulationMetaData — Include simulation metadata

false (default) | true

Include simulation metadata in the report, specified as `true` or `false`. The metadata includes: Simulink version, model version, model author, date, model user ID, model path, machine name, solver name, solver type, fixed step size, simulation start time, simulation stop time, and platform.

IncludeSimulationSignalPlots — Include simulation signal plots

false (default) | true

Include the simulation signal output plots in the report, specified as `true` or `false`.

IncludeTestRequirement — Include test requirement

`true` (default) | `false`

Include the test requirements linked to the test file, test suite, or test case in the report, specified as `true` or `false`.

IncludeTestResults — Include all or subset of test results

2 (default) | 0 | 1

Include all or a subset of test results in the report. You can select all passed and failed results, specified as the value 0, select only passed results, specified as the value 1, or select only failed results, specified as the value 2.

LaunchReport — Open report at completion

`true` (default) | `false`

Open the report when it is finished generating, specified as a boolean value, `true` or to not open the report, `false`.

ReportTitle — Report title

empty character vector (default)

Title of the report, specified as a character vector

Example: 'Test Case Report'

SectionSpacing — Spacing between sections

'2mm' (default) | character vector

Spacing between sections, specified in millimeters as a character vector.

Example: '5mm'

SignalPlotHeight — Plot height

'600px' (default) | character vector

Plot height, specified in pixels as a character vector.

Example: '500px'

SignalPlotWidth — Plot width

'500px' (default) | character vector

Plot width, specified in pixels as a character vector.

Example: '400px'

TableFontColor — Table font color

'Black' (default) | character vector

Table font color, specified as a character vector.

Example: 'Blue'

TableFontName — Table font style name

'Arial' (default) | character vector

Table font-style name, specified as a character vector.

Example: 'Times New Roman'

TableFontSize — Table font size

'7.5pt' (default) | character vector

Table font size, specified in points as a character vector.

Example: '10pt'

TitleFontColor — Title font color

'Black' (default) | character vector

Title font color, specified as a character vector.

Example: 'Blue'

TitleFontName — Title font style name

'Arial' (default) | character vector

Title font-style name, specified as a character vector.

Example: 'Times New Roman'

TitleFontSize — Title font size

'16pt' (default) | character vector

Title font size, specified in points as a character vector.

Example: '20pt'

Methods

Examples

Inherit Class and Customize a Report

```
% class definition
classdef CustomReport < sltest.testmanager.TestResultReport
    % This custom class used by Test Manager adds a custom message in
    % the title page

    % Class constructor
    methods
        function this = CustomReport(resultObjects, reportFilePath)
            this@sltest.testmanager.TestResultReport(resultObjects,reportFilePath);
        end
    end

    methods(Access=protected)
        function addTitlePage(obj)
            import mlreportgen.dom.*;

            % Add a custom message
            label = Text('Some custom content can be added here');
            append(obj.titlePart,label);

            % Call the superclass method to get the default behavior
            addTitlePage@sltest.testmanager.TestResultReport(obj);
        end
    end
end
```

Use Custom Report Class to Generate Report

```
% import existing results or use sltest.testmanager.run to run tests
% and collect results
result = sltest.testmanager.importResults('testResults.mldatx');
filePath = 'testreport.zip';
sltest.testmanager.report(result,filePath,...
    'Author','User',...
    'Title','Test',...
    'IncludeMLVersion',true,...
```

```
'IncludeTestResults',int32(0),...  
'CustomReportClass','CustomReport',...  
'LaunchReport',true);
```

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.ResultSet` | `sltest.testmanager.report`

Topics

“Export Test Results and Generate Reports”

“Automate Tests Programmatically”

Introduced in R2016a

sltest.testmanager.TestSuite class

Package: sltest.testmanager

Create or modify test suite

Description

Instances of `sltest.testmanager.TestSuite` can contain other test suites and test cases.

Construction

`obj = sltest.testmanager.TestSuite(parent, name)` creates a `sltest.testmanager.TestSuite` object as a child of the specified parent. You can use test files or other test suites as the parent.

Input Arguments

parent — Parent test file or test suite

object

Parent object for the test suite to reside in. The parent object can be a test file or a test suite, specified as an `sltest.testmanager.TestFile` or `sltest.testmanager.TestSuite` object.

name — Test suite name

character vector

Name of the test suite, specified as a character vector. If this is empty, a unique name is created.

Example: 'Coverage Test Suite'

Properties

Name — Test suite name

character vector

Name of the test file without the file path and file extension, returned as a character vector.

Description — Test suite description

character vector

Test suite description text, specified as a character vector.

Enabled — Test suite execution indicator

true | false

Indicates if test cases that are children of the test suite will execute, specified as a logical value `true` or `false`.

ReasonForDisabling — Disabled description

character vector

Description text for why the test suite was disabled, specified as a character vector. This property is visible only when the `Enabled` property is set to `false`.

TestFile — Parent test file

`sltest.testmanager.TestFile` object

Test file that is the parent of the test suite, returned as a `sltest.testmanager.TestFile` object.

TestPath — Test hierarchy

character vector

Test file and test suite hierarchy, returned as a character vector.

Parent — Parent test file or test suite

object

Test file or test suite that is the parent of the specified test suite, returned as a `sltest.testmanager.TestFile` or `sltest.testmanager.TestSuite` object.

Requirements — Test suite requirements

structure array

The requirements that are attached at the test-suite level, returned as a structure.

Methods

Examples

Create New Test File and Suite

```
% Create test file
testfile = sltest.testmanager.TestFile('C:\MATLAB\test_file.mldatx');

% Create test suite
testsuite = sltest.testmanager.TestSuite(testfile, 'My Test Suite')

testsuite =
```

```
    TestSuite with properties:
```

```
        Name: 'My Test Suite'
      TestFile: [1x1 sltest.testmanager.TestFile]
     TestPath: 'test_file > My Test Suite'
        Parent: [1x1 sltest.testmanager.TestFile]
  Requirements: [0x1 struct]
   Description: ''
        Enabled: 1
```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestCase | sltest.testmanager.TestFile

Topics

“Automate Tests Programmatically”

Introduced in R2015b

sltest.testmanager.TestSuiteResult class

Package: sltest.testmanager

Access test suite results data

Description

Instances of `sltest.testmanager.TestSuiteResult` enable you to access the results from test execution performed by the Test Manager at a test-suite level.

Construction

The function `sltest.testmanager.run` creates a `sltest.testmanager.ResultSet` object, which contains the test suite result object. You can also create a test suite result directly if you use `sltest.testmanager.TestSuite.run` to execute tests in an individual test suite.

Properties

NumDisabled — Number of disabled tests

integer

The number of test cases that were disabled in the test suite result.

NumFailed — Number of failed tests

integer

The number of failed tests contained in the test suite result.

NumPassed — Number of passed tests

integer

The number of passed tests contained in the test suite result.

NumTestCaseResults — Number of test case result children

integer

The number of test case results that are direct children of the test suite result.

NumTestSuiteResults — Number of test suite result children

integer

The number of test suite results that are direct children of the test suite result.

NumTotal — Total number of tests

integer

The total number of tests in the test suite result.

TestFilePath — Test file path

character vector

The path of the test file used to create the result.

TestSuitePath — Result hierarchy path

character vector

The hierarchy path in the parent result set.

Methods

Examples

Get Test Suite Result From Results Set

```
% Run test file in Test Manager and output results set  
resultset = sltest.testmanager.run;
```

```
% Get test file result object  
tfr = getTestFileResults(resultset);
```

```
% Get test suite result object  
tsr = getTestSuiteResults(tfr);
```

- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestFileResult` | `sltest.testmanager.TestCaseResult`

Topics

“Automate Tests Programmatically”

Introduced in R2015a

Methods — Alphabetical List

addBaselineCriteria

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Add baseline criteria to test case

Syntax

```
baseline = addBaselineCriteria(tc,filePath,refreshIfExists)
```

Description

`baseline = addBaselineCriteria(tc,filePath,refreshIfExists)` adds a baseline criteria set to the test case and returns a baseline criteria object, `sltest.testmanager.BaselineCriteria`. This function can be used only if the test type is a baseline test case.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case that you want to add the baseline criteria to, specified as a `sltest.testmanager.TestCase` object.

filePath — File name and path

character vector

Name and file path of the baseline criteria file, specified as a character vector.

Example: 'C:\MATLAB\baseline_API.mat'

refreshIfExists — Refresh signal criteria

false (default) | true

Refresh if the baseline criteria already exists, specified as a Boolean. The Boolean `false` errors if signal criteria is already loaded, and `true` refreshes signal criteria from the file data.

Output Arguments

baseline — Baseline criteria

sltest.testmanager.BaselineCriteria object

Baseline criteria added to the test case, returned as an sltest.testmanager.BaselineCriteria object.

Examples

Add Baseline Criteria to Test Case

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Add baseline criteria from file
baseline = addBaselineCriteria(tc, 'C:\MATLAB\baseline_API.mat');
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

addInput

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Add input file to test case

Syntax

```
input = addInput(tc,filePath,simulationIndex)
```

Description

`input = addInput(tc,filePath,simulationIndex)` adds a file to the Inputs section of the test case and returns a test input object, `sltest.testmanager.TestInput`.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case that you want to add the test input to, specified as a `sltest.testmanager.TestCase` object.

filePath — Input file name and path

character vector

Name and file path of the input file, specified as a character vector.

simulationIndex — Test case simulation number

1 | 2

Simulation number that the parameter sets apply to, specified as an integer, 1 or 2. This setting applies to the simulation test case where there are two simulations. For baseline and simulation test cases, the simulation index is 1.

Output Arguments

input — Test input

sltest.testmanager.TestInput object

Test input, returned as an sltest.testmanager.TestInput object.

Examples

Add Microsoft Excel Data as Input

You can add data from a Microsoft Excel spreadsheet. The spreadsheet used in this example is located in the example folder directory.

```
% Load example model
open_system('sltestExcelExample');

% Create new test file
tf = sltest.testmanager.TestFile('C:\MATLAB\input_test_file.mldatx');
% Get test suite object
ts = getTestSuites(tf);
% Get test case object
tc = getTestCases(ts);

% Add the example model as the system under test
setProperty(tc, 'Model', 'sltestExcelExample');

% Add Excel data to Inputs section
input_path = fullfile(matlabroot, 'toolbox', 'simulinktest', ...
    'simulinktestdemos', 'sltestExampleInputs.xlsx');
input = addInput(tc, input_path, 1);
% Map the input signals by port order
map(input, 3);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

addIteration

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Add test iteration to test case

Syntax

```
addIteration(tc, iter)
addIteration( ____, name)
```

Description

`addIteration(tc, iter)` adds a test iteration to the test case. The Test Manager gives the iteration a unique name.

`addIteration(____, name)` adds a test iteration to the test case with a specified name, which must be unique.

Input Arguments

tc — Test case to add iteration to

`sltest.testmanager.TestCase` object

Test case that you want to add the iteration to, specified as a `sltest.testmanager.TestCase` object.

iter — Test iteration to add

`sltest.testmanager.TestIteration` object

Test iteration that you want to add to the test case, specified as a `sltest.testmanager.TestIteration` object.

name — Test iteration name

character vector

Test iteration name, specified as a character vector. The name must be unique with respect to other iterations in the test case. This is an optional argument.

Example: 'Test Iteration 5'

Examples

Iterate Over Parameter Sets

In this example, there must be parameter sets defined in the **Parameter Overrides** section of the test case. The iterations are generated during test execution. This section of script is in the Scripted Iterations section of the test case. It will execute only in the Scripted Iterations section.

```
% Define parameter sets for a test case and add this code in the
% Scripted iterations section of the test case
for k = 1 : length(sltest_parameterSets)

    % Create test iteration object
    testItr = sltest.testmanager.TestIteration();

    % Use the parameter set in this iteration
    testItr.setTestParam('ParameterSet', sltest_parameterSets{k});

    str = sprintf('ParameterSet %d', k);

    % Add the iteration object to the test case
    addIteration(sltest_testCase, testItr, str);
end
```

- “Run Multiple Combinations of Tests Using Iterations”
- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestIteration

Topics

“Run Multiple Combinations of Tests Using Iterations”

“Automate Tests Programmatically”

Introduced in R2016a

addParameterOverride

Class: sltest.testmanager.ParameterSet

Package: sltest.testmanager

Add parameter override to set

Syntax

```
ovr = addParameterOverride(ps,Name,Value)
```

Description

`ovr = addParameterOverride(ps,Name,Value)` adds a parameter override to parameter set and returns a parameter override object, `sltest.testmanager.ParameterOverride`.

Input Arguments

ps — Parameter set

`sltest.testmanager.ParameterSet` object

Parameter set that you want to add the override to, specified as a `sltest.testmanager.ParameterSet` object.

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1,Value1,...,NameN,ValueN`.

Example: 'Value',5.2

'Name' — Variable name

character vector

Name of the variable you want to override, specified as a character vector.

'Value' — Variable value

numeric

Value of the variable you want to override.

'MaskedBlockPath' — Masked block path

character vector

If the parameter you want to override is contained in a masked block, then provide the block path, specified as a character vector.

Output Arguments

ovr — Parameter override

sltest.testmanager.ParameterOverride object

Parameter override added to the parameter set, returned as an sltest.testmanager.ParameterOverride object.

Examples

Add Parameter Override to Parameter Set

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc, 'baseline_API.mat', true);
```

```
% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc, 'Name', 'API Parameter Set');
po = addParameterOverride(ps, 'm', 55);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

addParameterSet

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Add parameter set

Syntax

```
pset = addParameterSet(tc,Name,Value)
```

Description

`pset = addParameterSet(tc,Name,Value)` adds a parameter set to the test case and returns a parameter set object, `sltest.testmanager.ParameterSet`.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case that you want to add the parameter set to, specified as a `sltest.testmanager.TestCase` object.

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name`, `Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1,Value1,...,NameN,ValueN`.

Example: 'SimulationIndex',2

'Name' — Parameter set name

auto-generated unique name (default) | character vector

Name of the parameter set, specified as a character vector. This name is the label shown in the test case parameter set table. If you do not specify a name, the function creates an auto-generated unique name.

'FilePath' — Parameter set name and file path

character vector

The full name and path of the MAT-file, which contains the parameter values, specified as a character vector. If no parameter file path is given, then the function creates an empty parameter set.

'SimulationIndex' — Simulation number

1 (default) | 2

Simulation number that the parameter set applies to, specified as an integer, 1 or 2. This parameter applies to the simulation test case where there are two simulations. For baseline and simulation test cases, the simulation index is 1.

Output Arguments

pset — Parameter set

sltest.testmanager.ParameterSet object

Parameter set, returned as an sltest.testmanager.ParameterSet object.

Examples

Add Parameter Set to Test Case

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');
```

```
% Test a new model parameter by overriding it in the test case  
% parameter set  
ps = addParameterSet(tc, 'Name', 'API Parameter Set');
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

addReportBody

Class: `sltest.testmanager.TestResultReport`

Package: `sltest.testmanager`

Add main report body

Syntax

`addReportBody(obj)`

Description

`addReportBody(obj)` adds the main body pages to the report.

This method also calls:

- `sltest.testmanager.TestResultReport.genResultSetBlock`
- `sltest.testmanager.TestResultReport.genTestSuiteResultBlock`
- `sltest.testmanager.TestResultReport.genTestCaseResultBlock`

Input Arguments

obj — Test report object

`sltest.testmanager.TestResultReport` object

Test report, specified as a `sltest.testmanager.TestResultReport` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport`

Topics

“Export Test Results and Generate Reports”

“Automate Tests Programmatically”

Introduced in R2016a

addReportTOC

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Add report table of contents

Syntax

addReportTOC(obj)

Description

addReportTOC(obj) adds the table of contents page to the report.

Summary

Name	Outcome	Duration (Seconds)
Results: 2015-Dec-01 11:46:00	2 ✓	11
 test1	2 ✓	11
 New Test Suite 1	2 ✓	11
 New Test Case 1	2 ✓	10
 Iteration	✓	8
 Iteration 1	✓	2

Input Arguments

obj — Test report object

sltest.testmanager.TestResultReport object

Test report, specified as a sltest.testmanager.TestResultReport object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport`

Topics

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

addTitlePage

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Add report title page

Syntax

```
addTitlePage(obj)
```

Description

`addTitlePage(obj)` adds the title page to the report.

Report Generated by Test Manager

Title:	Test
Author:	Test Author
Date:	01-Dec-2015 11:50:23

Test Environment

Platform:	PCWIN64
MATLAB:	(R2016b)

Input Arguments

obj — Test report object

sltest.testmanager.TestResultReport object

Test report, specified as a `sltest.testmanager.TestResultReport` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport`

Topics

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

captureBaselineCriteria

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Capture baseline criteria and add to test case

Syntax

```
baseline = captureBaselineCriteria(tc, filePath, append)
```

Description

`baseline = captureBaselineCriteria(tc, filePath, append)` runs the System Under Test and captures a baseline criteria set. The function returns a baseline criteria object, `sltest.testmanager.BaselineCriteria`. This function can be used only if the test type is a baseline test case.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case to capture baseline criteria in, specified as an `sltest.testmanager.TestCase` object.

filePath — Input file name and path

character vector

Name and file path to save the baseline criteria file to, specified as a character vector.

append — Append baseline criteria

`true` | `false`

Append baseline criteria if criteria already exists, specified as a Boolean. The Boolean `true` appends to existing criteria, and `false` replaces existing criteria.

Output Arguments

baseline — Baseline criteria object

object

Baseline criteria added to the test case, returned as an `sltest.testmanager.BaselineCriteria` object.

Examples

Capture Baseline Criteria

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc, 'baseline_API.mat', true);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

captureEquivalenceCriteria

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Capture equivalence criteria and add to test case

Syntax

```
eq = captureEquivalenceCriteria(tc,replaceAll)
```

Description

`eq = captureEquivalenceCriteria(tc,replaceAll)` runs the System Under Test in Simulation 1 and captures an equivalence criteria set. The function returns an equivalence criteria object, `sltest.testmanager.EquivalenceCriteria`. This function can be used only if the test type is an equivalence test case.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case to capture equivalence criteria in, specified as an `sltest.testmanager.TestCase` object.

replaceAll — Replace equivalence criteria

`true` | `false`

Replace existing equivalence criteria if criteria already exists in the test case, specified as a Boolean. `true` replaces existing criteria, and `false` errors if criteria already exists in the test case.

Output Arguments

eq — Equivalence criteria object

object

Equivalence criteria added to the test case, returned as an `sltest.testmanager.EquivalenceCriteria` object.

Examples

Add Equivalence Criteria to Test Case

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf,'API Test Suite');
tc = createTestCase(ts,'equivalence','Equivalence Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf,'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
% for Simulation 1 and Simulation 2
setProperty(tc,'Model','sldemo_absbrake','SimulationIndex',1);
setProperty(tc,'Model','sldemo_absbrake','SimulationIndex',2);

% Capture equivalence criteria
eq = captureEquivalenceCriteria(tc);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

close

Class: sltest.testmanager.TestFile

Package: sltest.testmanager

Close test file in Test Manager

Syntax

```
close(tf)
```

Description

`close(tf)` closes the test file in the Test Manager and does not save unsaved changes.

Input Arguments

tf — Test file

sltest.testmanager.TestFile object

Test file, specified as a sltest.testmanager.TestFile object.

Examples

Close Test File

```
% Create test file in Test Manager
tf = sltest.testmanager.TestFile('My Test File');

% Close test file
close(tf);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

convertTestType

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Convert test from one type to another

Syntax

```
convertTestType(tc, testType)
```

Description

`convertTestType(tc, testType)` converts the test case type to a different type.

If you convert certain test case types to another type, then you can lose information about the original test case:

- Baseline to simulation or equivalence — baseline criteria is lost
- Equivalence to simulation or baseline — equivalence criteria is lost for Simulation 1 and 2

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case that you want to convert to a different type, specified as a `sltest.testmanager.TestCase` object.

testType — Test case type

`sltest.testmanager.TestCaseTypes.Baseline` |
`sltest.testmanager.TestCaseTypes.Equivalence` |
`sltest.testmanager.TestCaseTypes.Simulation`

Test case type that you want to convert to, specified as a `sltest.testmanager.TestCaseTypes` enumeration. Specify:

- `sltest.testmanager.TestCaseTypes.Baseline` to convert to a baseline test case
- `sltest.testmanager.TestCaseTypes.Equivalence` to convert to an equivalence test case
- `sltest.testmanager.TestCaseTypes.Simulation` to convert to a simulation test case

Examples

Change Baseline Test Case to Simulation

```
% Create new test file with test suite and default test case
tf = sltest.testmanager.TestFile('API Test File');
ts = getTestSuites(tf);
tc = getTestCases(ts);

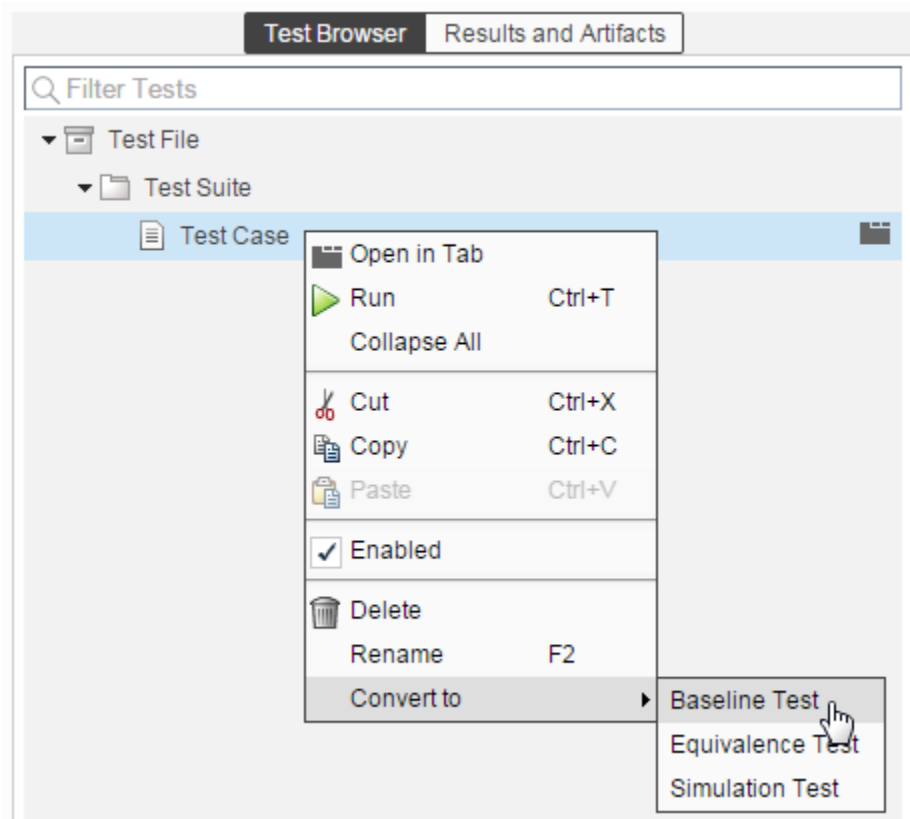
% Assign system under test to test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Convert test case to simulation type
convertTestType(tc, sltest.testmanager.TestCaseTypes.Simulation);
```

- “Automate Tests Programmatically”

Alternatives

You can also convert the test case type using the context menu in the **Test Browser** pane. Right-click the test case, select **Convert to**, and then select the test case type you want to convert the test case to.



See Also

See Also

`sltest.testmanager.TestCase`

Topics

“Automate Tests Programmatically”

Introduced in R2016b

convertTestType

Class: sltest.testmanager.TestFile

Package: sltest.testmanager

Convert test from one type to another

Syntax

```
convertTestType(tf, testType)
```

Description

`convertTestType(tf, testType)` converts the test case type to a different type. The function converts all of the test cases contained in the test file. If you want to convert a single test case, then use the `sltest.testmanager.TestCase.convertTestType` method.

If you convert certain test case types to another type, then you can lose information about the original test case:

- Baseline to simulation or equivalence — baseline criteria is lost
- Equivalence to simulation or baseline — equivalence criteria is lost for Simulation 1 and 2

Input Arguments

tf — Test file

`sltest.testmanager.TestFile` object

Test file that contains the test cases you want to convert to a different type, specified as a `sltest.testmanager.TestFile` object.

testType — Test case type

`sltest.testmanager.TestCaseTypes.Baseline` |
`sltest.testmanager.TestCaseTypes.Equivalence` |
`sltest.testmanager.TestCaseTypes.Simulation`

Test case type that you want to convert to, specified as a `sltest.testmanager.TestCaseTypes` enumeration. Specify:

- `sltest.testmanager.TestCaseTypes.Baseline` to convert to a baseline test case
- `sltest.testmanager.TestCaseTypes.Equivalence` to convert to an equivalence test case
- `sltest.testmanager.TestCaseTypes.Simulation` to convert to a simulation test case

Examples

Change Baseline Test Cases to Simulation

```
% Create new test file with test suite and default test case
tf = sltest.testmanager.TestFile('API Test File');
ts = getTestSuites(tf);
tc1 = getTestCases(ts);

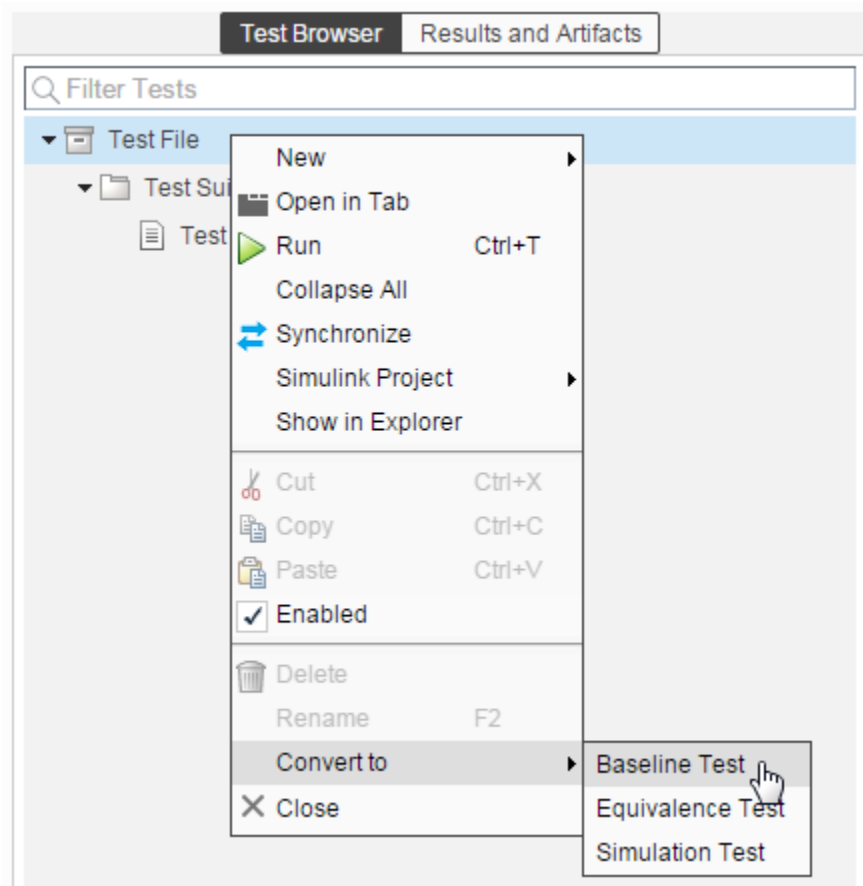
% Create new test case
tc2 = createTestCase(ts, 'baseline', 'API Test Case');

% Convert test cases to simulation type
convertTestType(tf, sltest.testmanager.TestCaseTypes.Simulation);
```

- “Automate Tests Programmatically”

Alternatives

You can also convert the test case type using the context menu in the **Test Browser** pane. Right-click the test file, select **Convert to**, and then select the test case type you want to convert the test cases to.



See Also

See Also

`sltest.testmanager.TestCase`

Topics

“Automate Tests Programmatically”

Introduced in R2016b

convertTestType

Class: sltest.testmanager.TestSuite

Package: sltest.testmanager

Convert test from one type to another

Syntax

```
convertTestType(ts, testType)
```

Description

`convertTestType(ts, testType)` converts the test case type to a different type. The function converts all of the test cases contained in the test suite. If you want to convert a single test case, then use the `sltest.testmanager.TestCase.convertTestType` method.

If you convert certain test case types to another type, then you can lose information about the original test case:

- Baseline to simulation or equivalence — baseline criteria is lost
- Equivalence to simulation or baseline — equivalence criteria is lost for Simulation 1 and 2

Input Arguments

ts — Test suite

`sltest.testmanager.TestSuite` object

Test suite that contains the test cases you want to convert to a different type, specified as a `sltest.testmanager.TestSuite` object.

testType — Test case type

`sltest.testmanager.TestCaseTypes.Baseline` |
`sltest.testmanager.TestCaseTypes.Equivalence` |
`sltest.testmanager.TestCaseTypes.Simulation`

Test case type that you want to convert to, specified as a `sltest.testmanager.TestCaseTypes` enumeration. Specify:

- `sltest.testmanager.TestCaseTypes.Baseline` to convert to a baseline test case
- `sltest.testmanager.TestCaseTypes.Equivalence` to convert to an equivalence test case
- `sltest.testmanager.TestCaseTypes.Simulation` to convert to a simulation test case

Examples

Change Baseline Test Cases to Simulation

```
% Create new test file with test suite and default test case
tf = sltest.testmanager.TestFile('API Test File');
ts = getTestSuites(tf);
tc1 = getTestCases(ts);

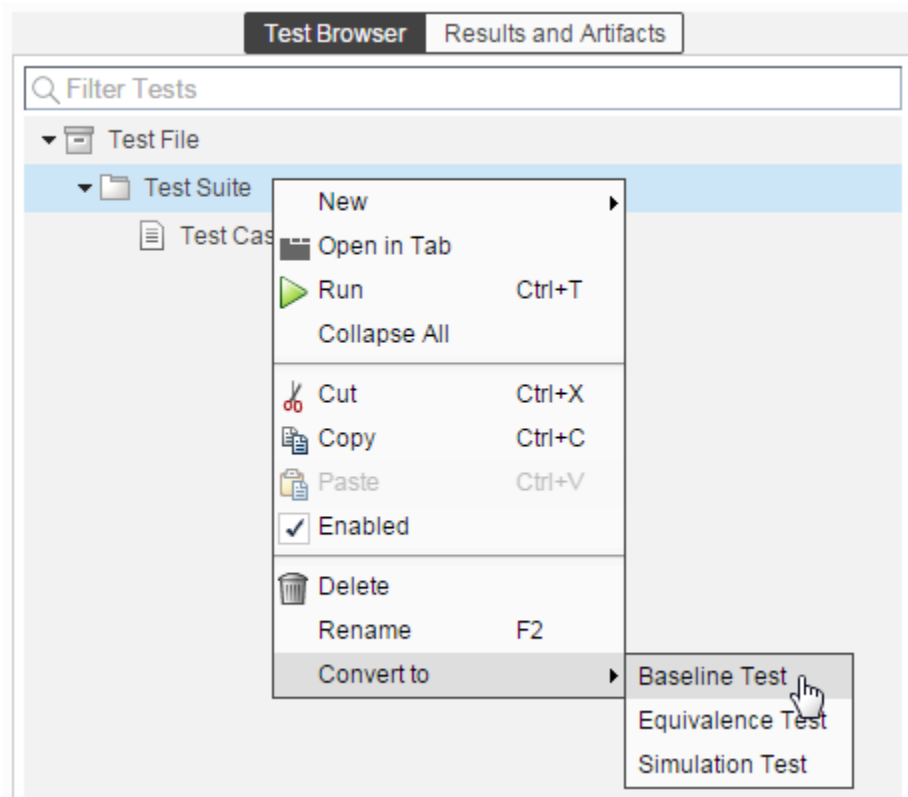
% Create new test case
tc2 = createTestCase(ts, 'baseline', 'API Test Case');

% Convert test cases to simulation type
convertTestType(ts, sltest.testmanager.TestCaseTypes.Simulation);
```

- “Automate Tests Programmatically”

Alternatives

You can also convert the test case type using the context menu in the **Test Browser** pane. Right-click the test suite, select **Convert to**, and then select the test case type you want to convert the test cases to.



See Also

See Also

`sltest.testmanager.TestCase`

Topics

“Automate Tests Programmatically”

Introduced in R2016b

copySimulationSettings

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Copy simulation setting in equivalence test case

Syntax

```
copySimulationSettings(tc, fromSimIndex, toSimIndex)
```

Description

`copySimulationSettings(tc, fromSimIndex, toSimIndex)` copies the simulation setting from one simulation number to another within an equivalence test case. This function works only for equivalence test case types.

Input Arguments

tc — Equivalence test case

sltest.testmanager.TestCase object

Equivalence test case that you want to copy simulation settings in, specified as a sltest.testmanager.TestCase object.

fromSimIndex — Copy from simulation number

1 | 2

Simulation number you want to copy the settings from, specified as an integer, 1 or 2. This is the source simulation.

toSimIndex — Copy to simulation number

1 | 2

Simulation number you want to copy the settings to, specified as an integer, 1 or 2. This is the target simulation.

Examples

Copy Simulation Settings in Test Case

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf,'API Test Suite');
tc = createTestCase(ts,'equivalence','Equivalence Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf,'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
% for Simulation 1 and Simulation 2
setProperty(tc,'Model','sldemo_absbrake','SimulationIndex',1);
setProperty(tc,'Model','sldemo_absbrake','SimulationIndex',2);

% Change simulation stop time in Simulation 1
setProperty(tc,'StopTime',100,'SimulationIndex',1);

% Copy simulation setting to Simulation 2
copySimulationSettings(tc,1,2);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

createTestCase

Class: sltest.testmanager.TestSuite

Package: sltest.testmanager

Create test case

Syntax

```
tc = createTestCase(ts, type, name, runOnTarget)
```

Description

`tc = createTestCase(ts, type, name, runOnTarget)` creates a new test case within the test suite. You can specify the test case name and `type`: `baseline`, `equivalence`, and `simulation`. Also, if you are using the test case for real-time testing, you can specify this using the `runOnTarget` argument.

Input Arguments

ts — Test suite

`sltest.testmanager.TestSuite` object

Test suite that you want to add a test case to, specified as an `sltest.testmanager.TestSuite` object.

type — Test case type

'baseline' (default) | 'equivalence' | 'simulation'

Test case type, specified as a character vector.

name — Test case name

character vector

Test case name, specified as a character vector. If this input argument is empty, then the Test Manager gives the test case a unique name.

runOnTarget — Run simulation on target

cell array of Booleans

Specify if you want to run the test case simulation on a target, specified as a cell array of Booleans. This is an optional argument. For more information on real-time testing, see “Test Models in Real Time”.

Output Arguments

tc — Test case

sltest.testmanager.TestCase object

Test case, returned as an sltest.testmanager.TestCase object.

Examples

Create Test Case

```
% Create test file
tf = sltest.testmanager.TestFile('C:\MATLAB\test_file.mldatx');

% Create test suite
ts = sltest.testmanager.TestSuite(tf,'My Test Suite');

% Create test case
tc = createTestCase(ts,'baseline','My Baseline Test')
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

createTestForSubsystem

Class: sltest.testmanager.TestFile

Package: sltest.testmanager

Create test case for subsystem

Syntax

```
createTestForSubsystem(tf, subsystemFullPath, testType, inputsLocation,  
baselineLocation)
```

Description

`createTestForSubsystem(tf, subsystemFullPath, testType, inputsLocation, baselineLocation)` creates a new test case for a model subsystem within the test file in a new test suite. Specify the test case name and type: baseline, equivalence, and simulation. Also, specify where the input and baseline datasets are saved.

Input Arguments

tf — Test file

sltest.testmanager.TestFile object

Test file, specified as an sltest.testmanager.TestFile object.

subsystemFullPath — Subsystem path

character vector

Full path of the subsystem starting at the top model, specified as a character vector.

Example: 'f14/Controller'

testType — Test case type

'baseline' | 'equivalence' | 'simulation'

Test case type, specified as a character vector.

Example: 'baseline'

inputsLocation — Inputs file location

character vector

File name and path of where to save the inputs data, specified as a character vector. The inputs file is saved as a MAT-file with the extension `.mat`.

Example: 'C:\MATLAB\inputs_data.mat'

baselineLocation — Baseline file location

character vector

File name and path of where to save the baseline data, specified as a character vector. The baseline file is saved as a MAT-file with the extension `.mat`.

Example: 'C:\MATLAB\baseline_data.mat'

Examples

Create Test For a Subsystem

```
% Load the model
load_system('sldemo_autotrans');

% Create a test file
tf = sltest.testmanager.TestFile('My Test File');

% Create test from subsystem
createTestForSubsystem(tf, 'sldemo_autotrans/ShiftLogic', 'baseline', ...
    'C:\MATLAB\inputs_data.mat', 'C:\MATLAB\baseline_data.mat');
```

- “Automate Tests Programmatically”
- “Generate Test Cases from Model Components”

See Also

See Also

sltest.testmanager.TestFile

Topics

“Automate Tests Programmatically”

“Generate Test Cases from Model Components”

Introduced in R2016a

createTestForSubsystem

Class: sltest.testmanager.TestSuite

Package: sltest.testmanager

Create test case for subsystem

Syntax

```
createTestForSubsystem(tsObj, subsystemFullPath, testType,  
inputsLocation, baselineLocation)
```

Description

`createTestForSubsystem(tsObj, subsystemFullPath, testType, inputsLocation, baselineLocation)` creates a new test case for a model subsystem within the test suite. Specify the test case name and type: baseline, equivalence, and simulation. Also, specify where the input and baseline datasets are saved.

Input Arguments

tsObj — Test suite

sltest.testmanager.TestSuite object

Test suite, specified as an sltest.testmanager.TestSuite object.

subsystemFullPath — Subsystem path

character vector

Full path of the subsystem starting at the top model, specified as a character vector.

Example: 'f14/Controller'

testType — Test case type

'baseline' | 'equivalence' | 'simulation'

Test case type, specified as a character vector.

Example: 'baseline'

inputsLocation — Inputs file location

character vector

File name and path of where to save the inputs data, specified as a character vector. The inputs file is saved as a MAT-file with the extension `.mat`.

Example: 'C:\MATLAB\inputs_data.mat'

baselineLocation — Baseline file location

character vector

File name and path of where to save the baseline data, specified as a character vector. The baseline file is saved as a MAT-file with the extension `.mat`.

Example: 'C:\MATLAB\baseline_data.mat'

Examples

Create Test For a Subsystem

```
% Load the model
load_system('sldemo_autotrans');

% Create a test file and default test suite
tf = sltest.testmanager.TestFile('My Test File');
ts = getTestSuites(tf);

% Create test from subsystem
createTestForSubsystem(ts, 'sldemo_autotrans/ShiftLogic', 'baseline', ...
    'C:\MATLAB\inputs_data.mat', 'C:\MATLAB\baseline_data.mat');
```

- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestSuite`

Topics

“Automate Tests Programmatically”

Introduced in R2016a

createTestSuite

Class: sltest.testmanager.TestFile

Package: sltest.testmanager

Create new test suite

Syntax

```
ts = createTestSuite(tf,suiteName)
```

Description

`ts = createTestSuite(tf,suiteName)` creates a test suite and adds it to the test file.

Input Arguments

tf — Test file

sltest.testmanager.TestFile object

Test file that you want to create the test suite within, specified as a sltest.testmanager.TestFile object.

suiteName — Test suite name

character vector

Name of the test suite, specified as a character vector.

Example: 'My Test Suite'

Output Arguments

ts — Test suite object

object

Test suite, returned as an `sltest.testmanager.TestSuite` object.

Examples

Create a Test Suite

```
% Create a test file
tf = sltest.testmanager.TestFile('My Test File');

% Create a test suite
ts = createTestSuite(tf, 'My Test Suite');
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

createTestSuite

Class: sltest.testmanager.TestSuite

Package: sltest.testmanager

Create test suite

Syntax

```
tsOut = createTestSuite(ts,suiteName)
```

Description

`tsOut = createTestSuite(ts,suiteName)` creates a new test suite.

Input Arguments

ts — Test suite

sltest.testmanager.TestSuite object

Test suite that want to add another test suite to, specified as an sltest.testmanager.TestSuite object.

suiteName — Test suite name

character vector

Test suite name, specified as a character vector. If this input argument is empty, then the Test Manager gives the test suite a unique name.

Output Arguments

tsOut — Test suite

sltest.testmanager.TestSuite object

Test suite, returned as an sltest.testmanager.TestSuite object.

Examples

Create Test Suite

```
% Create test file
tf = sltest.testmanager.TestFile('C:\MATLAB\test_file.mldatx');

% Create test suite
ts = sltest.testmanager.TestSuite(tf, 'My Test Suite');

% Create another new test suite using method
ts2 = createTestSuite(ts, 'Baseline Tests')
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

deleteIterations

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Delete test iterations that belong to test case

Syntax

```
deleteIterations(tc, iter)
```

Description

`deleteIterations(tc, iter)` deletes one or more test iterations from the test case.

Input Arguments

tc — Test case to delete iteration from

`sltest.testmanager.TestCase` object

Test case that you want to delete the iteration from, specified as a `sltest.testmanager.TestCase` object.

iter — Test iteration to delete

`sltest.testmanager.TestIteration` object array

Test iterations that you want to delete from the test case, specified as an array of `sltest.testmanager.TestIteration` objects.

Examples

Delete Test Iteration from Test Case

```
% Create test file, test suite, and test case structure  
tf = sltest.testmanager.TestFile('Iterations Test File');
```

```
ts = getTestSuites(tf);
tc = createTestCase(ts, 'simulation', 'Simulation Iterations');

% Specify model as system under test
setProperty(tc, 'Model', 'sldemo_autotrans');

% Set up table iteration
% Create iteration object
testItr1 = sltestiteration;
% Set iteration settings
setTestParam(testItr1, 'SignalBuilderGroup', 'Passing Maneuver');
% Add the iteration to test case
addIteration(tc, testItr1);

% Set up another table iteration
% Create iteration object
testItr2 = sltestiteration;
% Set iteration settings
setTestParam(testItr2, 'SignalBuilderGroup', 'Coasting');
% Add the iteration to test case
addIteration(tc, testItr2);

% Delete first iteration
deleteIterations(tc, testItr1);
```

- “Run Multiple Combinations of Tests Using Iterations”
- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestIteration

Topics

“Run Multiple Combinations of Tests Using Iterations”
“Automate Tests Programmatically”

Introduced in R2016a

genBaselineInfoTable

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate baseline dataset information table

Syntax

```
baselineTable = genBaselineInfoTable(obj,result)
```

Description

`baselineTable = genBaselineInfoTable(obj,result)` generates a section for the baseline dataset information used in the test case.

Baseline Information

Baseline Name: baseline1.mat

Baseline File: Z:\12\aabhishe.Dec1\baseline1.mat

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
yout.Ww	double		Continuous	linear	union	Link
yout.Vs	double		Continuous	linear	union	Link
yout.Sd	double		Continuous	linear	union	Link
slp	double		Continuous	linear	union	Link

Input Arguments

obj — Test report object

sltest.testmanager.TestResultReport object

Test report, specified as a sltest.testmanager.TestResultReport object.

result — Result set

`sltest.testmanager.TestCaseResult` object |
`sltest.testmanager.TestIterationResult` object

Result set, specified as a `sltest.testmanager.TestCaseResult` or `sltest.testmanager.TestIterationResult` object.

Output Arguments

baselineTable — Table

`mlreportgen.dom.FormalTable` object

The test case baseline dataset table generated by the method, returned as a `mlreportgen.dom.FormalTable` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `mlreportgen.dom.FormalTable`

Topics

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

genCoverageTable

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate coverage collection table



Syntax

```
docPart = genCoverageTable(obj, resultObj)
```

Description

`docPart = genCoverageTable(obj, resultObj)` generates a section for coverage that was collected during the test.

Aggregated Coverage Results

Model Name	C1	TBL	Execution
 sldemo_absbrake	--	100%	100%
 sldemo_wheelspeed_absbrake	100%	--	100%

Input Arguments

obj — Test report object

sltest.testmanager.TestResultReport object

Test report, specified as a sltest.testmanager.TestResultReport object.

resultObj — Result set

sltest.testmanager.TestResult object

Result set, specified as a sltest.testmanager.TestResult object.

Output Arguments

docPart — Document part

`mlreportgen.dom.DocumentPart` object

The coverage section document part generated by the method, returned as a `mlreportgen.dom.DocumentPart` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `mlreportgen.dom.DocumentPart`

Topics

“Export Test Results and Generate Reports”

“Automate Tests Programmatically”

Introduced in R2016a

genHyperLinkToToC

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate link to table of contents

Syntax

```
para = genHyperLinkToToC(obj,indent)
```

Description

para = genHyperLinkToToC(obj,indent) generates link to the report table of contents.

The link appears at the end of sections:

[Back to Report Summary](#)

Input Arguments

obj — Test report

sltest.testmanager.TestResultReport object

Test report, specified as a sltest.testmanager.TestResultReport object.

indent — Link indentation

character vector

Space between the left outer boundary of this paragraph and the left inner boundary of the link, specified as a character vector.

The character vector has the format `valueUnits`, where `Units` is an abbreviation for the units in which the indentation is expressed. Use one of these abbreviations for the units for indentation.

- no abbreviation — pixels
- `cm` — centimeters
- `in` — inches
- `mm` — millimeters
- `pi` — picas
- `pt` — points
- `px` — pixels

Example: `'5mm'`

Output Arguments

para — Paragraph

`mlreportgen.dom.Paragraph` object

The link paragraph generated by the method, returned as a `mlreportgen.dom.Paragraph` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `mlreportgen.dom.Paragraph`

Topics

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

genIterationSettingTable

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate iteration settings table

Syntax

```
docPart = genIterationSettingTable(obj,result)
```

Description

`docPart = genIterationSettingTable(obj,result)` generates a section for the iteration settings used to override the parent test case settings.

Iteration Settings

Test Overrides

Parameter Name	Value
ParameterSet	Parameter Set 1

Input Arguments

obj — Test report object

`sltest.testmanager.TestResultReport` object

Test report, specified as a `sltest.testmanager.TestResultReport` object.

result — Result set

`sltest.testmanager.ReportUtility.ReportResultData` object

Result set, specified as a `sltest.testmanager.ReportUtility.ReportResultData` object.

Output Arguments

docPart — Document part

`mlreportgen.dom.DocumentPart` object

The iteration settings section document part generated by the method, returned as a `mlreportgen.dom.DocumentPart` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `mlreportgen.dom.DocumentPart`

Topics

“Export Test Results and Generate Reports”

“Automate Tests Programmatically”

Introduced in R2016a

genMetadataBlockForTestResult

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate result metadata section

Syntax

```
docPart = genMetadataBlockForTestResult(obj,result,
isTestSuiteResult)
```

Description

`docPart = genMetadataBlockForTestResult(obj,result, isTestSuiteResult)` generates a result metadata section for a test suite or test case result.

If called from `sltest.testmanager.TestResultReport.genTestSuiteResultBlock`, then this method also calls:

- `sltest.testmanager.TestResultReport.genTableRowsForResultMetaInfo`
- `sltest.testmanager.TestResultReport.genRequirementLinksTable`

If called from `sltest.testmanager.TestResultReport.genTestCaseResultBlock`, then this method also calls:

- `sltest.testmanager.TestResultReport.genTableRowsForResultMetaInfo`
- `sltest.testmanager.TestResultReport.genRequirementLinksTable`
- `sltest.testmanager.TestResultReport.genIterationSettingTable`

Input Arguments

obj — Test report object

`sltest.testmanager.TestResultReport` object

Test report, specified as a `sltest.testmanager.TestResultReport` object.

result — Result set

`sltest.testmanager.ReportUtility.ReportResultData` object

Result set, specified as a `sltest.testmanager.ReportUtility.ReportResultData` object.

isTestSuiteResult — Test suite indicator

`true` | `false`

Flag to indicate whether the test result metadata block is for a test suite result or not, specified as a Boolean, `true` or `false`.

Output Arguments

docPart — Document part

`mlreportgen.dom.DocumentPart` object

The result set section document part generated by the method, returned as a `mlreportgen.dom.DocumentPart` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `mlreportgen.dom.DocumentPart`

Topics

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

genParameterOverridesTable

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate test case parameter overrides table

Syntax

```
overridesTable = genParameterOverridesTable(obj,result,simIndex)
```

Description

`overridesTable = genParameterOverridesTable(obj,result,simIndex)` generates a section for parameter overrides used in the test case.

Parameter Overrides

Workspace Variable	Value	Source	Model Element
Parameter Set 1			
Rr	1.5	base workspace	sldemo_absbrake/Rr, sldemo_absbrake/Vehicle speed (angular)

Input Arguments

obj — Test report object

sltest.testmanager.TestResultReport object

Test report, specified as a sltest.testmanager.TestResultReport object.

result — Result set

`sltest.testmanager.TestResult` object

Result set, specified as a `sltest.testmanager.TestResult` object.

simIndex — Simulation index

1 | 2

Simulation number that the test case parameter overrides table applies to, specified as an integer, 1 or 2. This setting applies to the simulation test case.

Output Arguments

overridesTable — Table

`mlreportgen.dom.FormalTable` object

The test case parameter overrides table generated by the method, returned as a `mlreportgen.dom.FormalTable` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `mlreportgen.dom.FormalTable`

Topics

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

genRequirementLinksTable

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate requirement links table

Syntax

```
reqTable = genRequirementLinksTable(obj,resultObj,isTestSuiteResult)
```

Description

`reqTable = genRequirementLinksTable(obj,resultObj,isTestSuiteResult)` generates a section for table of requirement links.

Test Case Requirements

Description: requirement

Document: <http://www.mathworks.com>

Input Arguments

obj — Test report object

sltest.testmanager.TestResultReport object

Test report, specified as a sltest.testmanager.TestResultReport object.

resultObj — Result set

sltest.testmanager.TestResult object

Result set, specified as a sltest.testmanager.TestResult object.

isTestSuiteResult — Test suite indicator

true | false

Flag to indicate whether the requirement links table is for a test suite result or not, specified as a Boolean, `true` or `false`.

Output Arguments

reqTable — Table

`mlreportgen.dom.FormalTable` object

The requirements links table generated by the method, returned as a `mlreportgen.dom.FormalTable` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `mlreportgen.dom.FormalTable`

Topics

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

genResultSetBlock

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate results set section

Syntax

```
docPart = genResultSetBlock(obj,result)
```



Description

docPart = genResultSetBlock(obj,result) generates the results set section.

Results: 2015-Dec-01 11:46:00

Result Type: Result Set
 Parent: None
 Start Time: 2015-Dec-01 11:46:00
 End Time: 2015-Dec-01 11:46:11
 Outcome: Total: 2, Passed: 2

Aggregated Coverage Results

Model Name	C1	TBL	Execution
 slidemo_absbrake	--	100%	100%
 slidemo_wheelspeed_absbrake	100%	--	100%

[Back to Report Summary](#)

This method also calls:

- sltest.testmanager.TestResultReport.genTableRowsForResultMetaInfo
- sltest.testmanager.TestResultReport.genCoverageTable
- sltest.testmanager.TestResultReport.genHyperLinkToToC

Input Arguments

obj — Test report object

`sltest.testmanager.TestResultReport` object

Test report, specified as a `sltest.testmanager.TestResultReport` object.

result — Result set

`sltest.testmanager.ReportUtility.ReportResultData` object

Result set, specified as a `sltest.testmanager.ReportUtility.ReportResultData` object.

Output Arguments

docPart — Document part

`mlreportgen.dom.DocumentPart` object

The result set section document part generated by the method, returned as a `mlreportgen.dom.DocumentPart` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `mlreportgen.dom.DocumentPart`

Topics

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

genRunBlockForTestCaseResult

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate test case configuration and results section

Syntax

```
docPart = genRunBlockForTestCaseResult(obj,run,runType,result,
simIndex)
```

Description

docPart = genRunBlockForTestCaseResult(obj,run,runType,result,simIndex) generates a combined section for baseline data, simulation configuration, parameter overrides, simulation output, criteria comparison, and verify run data.

This method also calls:

- sltest.testmanager.TestResultReport.genBaselineInfoTable
- sltest.testmanager.TestResultReport.genSimulationConfigurationTable
- sltest.testmanager.TestResultReport.genParameterOverridesTable
- sltest.testmanager.TestResultReport.genSignalSummaryTable
- sltest.testmanager.TestResultReport.plotOneSignalToFile
- sltest.testmanager.TestResultReport.genHyperLinkToToC

Input Arguments

obj — Test report object

sltest.testmanager.TestResultReport object

Test report, specified as a sltest.testmanager.TestResultReport object.

run — Run data

Simulink.sdi.Run object

Test case result run data, specified as a `Simulink.sdi.Run` object.

runType — Run type

`sltest.testmanager.RunTypes` object

The run type, specified as a `sltest.testmanager.RunTypes` object.

result — Result

`sltest.testmanager.ReportUtility.ReportResultData` object

Run result, specified as a

`sltest.testmanager.ReportUtility.ReportResultData` object.

simIndex — Simulation index

1 | 2

Simulation number that the result applies to, specified as an integer, 1 or 2. This setting applies to the simulation test case.

Output Arguments

docPart — Document part

`mlreportgen.dom.DocumentPart` object

The result set section document part generated by the method, returned as a `mlreportgen.dom.DocumentPart` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `Simulink.sdi.Run` | `mlreportgen.dom.DocumentPart`

Topics

“Export Test Results and Generate Reports”

“Automate Tests Programmatically”

Introduced in R2016a

genSignalSummaryTable

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate signal output and comparison data

Syntax

```
docPart = genSignalSummaryTable(obj,signalList,isComparison,
isSummaryTable)
```

Description

docPart = genSignalSummaryTable(obj,signalList,isComparison, isSummaryTable) generates a section for signal output and comparison data.

Name	Data Type	Units	Sample Time	Interp	Sync	Link to Plot
yout.Ww	double		Continuous	linear	union	Link
yout.Vs	double		Continuous	linear	union	Link
yout.Sd	double		Continuous	linear	union	Link
slp	double		Continuous	linear	union	Link

Input Arguments

obj — Test report object

sltest.testmanager.TestResultReport object

Test report, specified as a sltest.testmanager.TestResultReport object.

signalList — Signal list

sltest.testmanager.ReportUtility.Signal object

Signals in the summary table, specified as an array of sltest.testmanager.ReportUtility.Signal objects.

isComparison — Comparison indicator`true | false`

Flag to indicate whether the signal is from a comparison run or not, specified as a Boolean, `true` or `false`.

isSummaryTable — Summary table indicator`true | false`

Flag to indicate whether this is for a signal summary table in the report or an individual signal plot, specified as a Boolean. `true` for the signal summary table or `false` for an individual signal plot.

Output Arguments

docPart — Document part`mlreportgen.dom.DocumentPart` object

The signal summary section document part generated by the method, returned as a `mlreportgen.dom.DocumentPart` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also`sltest.testmanager.TestResultReport` | `mlreportgen.dom.DocumentPart`**Topics**

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

genSimulationConfigurationTable

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate test case simulation configuration table

Syntax

```
simCfgTable = genSimulationConfigurationTable(obj,result,simIndex)
```

Description

`simCfgTable = genSimulationConfigurationTable(obj,result,simIndex)` generates a section for simulation configuration data used in the test case.

Simulation

System Under Test Information

Model:	sldemo_absbrake
Simulation Mode	Normal
Configuration Set:	Configuration
Start Time:	0
Stop Time:	14.635438874554231
Checksum:	1514901952 3523488043 2320696550 3824373991
Simulink Version:	8.7

Input Arguments

obj — Test report object

`sltest.testmanager.TestResultReport` object

Test report, specified as a `sltest.testmanager.TestResultReport` object.

result — Result set

`sltest.testmanager.ReportUtility.ReportResultData` object

Result set, specified as a `sltest.testmanager.ReportUtility.ReportResultData` object.

simIndex — Simulation index

1 | 2

Simulation number that the test case configuration table applies to, specified as an integer, 1 or 2. This setting applies to the simulation test case.

Output Arguments

simCfgTable — Table

`mlreportgen.dom.FormalTable` object

The test case simulation configuration table generated by the method, returned as a `mlreportgen.dom.FormalTable` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `mlreportgen.dom.FormalTable`

Topics

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

genTableRowsForResultMetaInfo

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate test result metadata table

Syntax

```
rowList = genTableRowsForResultMetaInfo(obj,result)
```

Description

`rowList = genTableRowsForResultMetaInfo(obj,result)` generates a section for test result metadata used in a result set, test file, test suite, test case, or test iteration.

Test Result Information

Result Type:	Test Suite Result
Parent:	test1
Start Time:	2015-Dec-01 14:14:16
End Time:	2015-Dec-01 14:14:20
Outcome:	Total: 2, Passed: 1, Failed: 1

Input Arguments

obj — Test report object

`sltest.testmanager.TestResultReport` object

Test report, specified as a `sltest.testmanager.TestResultReport` object.

result — Result set

`sltest.testmanager.ReportUtility.ReportResultData` object

Result set, specified as a `sltest.testmanager.ReportUtility.ReportResultData` object.

Output Arguments

rowList — Table row

mlreportgen.dom.TableRow object

The metadata information table row generated by the method, returned as a mlreportgen.dom.TableRow object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestResultReport | mlreportgen.dom.TableRow

Topics

“Export Test Results and Generate Reports”

“Automate Tests Programmatically”

Introduced in R2016a

genTestCaseResultBlock

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate test case result section

Syntax

```
docPart = genTestCaseResultBlock(obj, result)
```

Description

`docPart = genTestCaseResultBlock(obj, result)` generates a test case result section.

This method also calls:

- `sltest.testmanager.TestResultReport.genMetadataBlockForTestResult`
- `sltest.testmanager.TestResultReport.genCoverageTable`
- `sltest.testmanager.TestResultReport.genHyperLinkToToC`

Input Arguments

obj — Test report object

`sltest.testmanager.TestResultReport` object

Test report, specified as a `sltest.testmanager.TestResultReport` object.

result — Result set

`sltest.testmanager.ReportUtility.ReportResultData` object

Result set, specified as a `sltest.testmanager.ReportUtility.ReportResultData` object.

Output Arguments

docPart — Document part

mlreportgen.dom.DocumentPart object

The result set section document part generated by the method, returned as a mlreportgen.dom.DocumentPart object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestResultReport | mlreportgen.dom.DocumentPart

Topics

“Export Test Results and Generate Reports”

“Automate Tests Programmatically”

Introduced in R2016a

genTestSuiteResultBlock

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Generate test suite result section

Syntax

```
docPart = genTestSuiteResultBlock(obj,result)
```

Description

docPart = genTestSuiteResultBlock(obj,result) generates a test suite result section.

New Test Suite 1

Test Result Information

Result Type:	Test Suite Result
Parent:	test1
Start Time:	2015-Dec-01 11:46:00
End Time:	2015-Dec-01 11:46:11
Outcome:	Total: 2, Passed: 2

Test Suite Information

Name: New Test Suite 1
[Back to Report Summary](#)

This method also calls:

- sltest.testmanager.TestResultReport.genMetadataBlockForTestResult
- sltest.testmanager.TestResultReport.genCoverageTable

- `sltest.testmanager.TestResultReport.genHyperLinkToToC`

Input Arguments

obj — Test report object

`sltest.testmanager.TestResultReport` object

Test report, specified as a `sltest.testmanager.TestResultReport` object.

result — Result set

`sltest.testmanager.ReportUtility.ReportResultData` object

Result set, specified as a `sltest.testmanager.ReportUtility.ReportResultData` object.

Output Arguments

docPart — Document part

`mlreportgen.dom.DocumentPart` object

The result set section document part generated by the method, returned as a `mlreportgen.dom.DocumentPart` object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport` | `mlreportgen.dom.DocumentPart`

Topics

“Export Test Results and Generate Reports”

“Automate Tests Programmatically”

Introduced in R2016a

getBaselineCriteria

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Get baseline criteria

Syntax

```
baselines = getBaselineCriteria(tc)
```

Description

`baselines = getBaselineCriteria(tc)` gets the baseline criteria sets in a test case and returns them as an array of baseline criteria objects, `sltest.testmanager.BaselineCriteria`.

Input Arguments

tc — **Baseline test case**

`sltest.testmanager.TestCase` object

Baseline test case that you want to get baseline criteria from, specified as a `sltest.testmanager.TestCase` object.

Output Arguments

baselines — **Baseline criteria object**

`sltest.testmanager.BaselineCriteria` object array

Baseline criteria that are in the baseline test case, returned as an array of `sltest.testmanager.BaselineCriteria` objects.

Examples

Get Baseline Criteria

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc, 'baseline_API.mat', true);

% Set the baseline criteria tolerance for one signal
sc = getSignalCriteria(baseline);
sc(1).AbsTol = 9;

% Get baseline criteria
baselineOut = getBaselineCriteria(tc);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getBaselineRun

Class: sltest.testmanager.TestCaseResult

Package: sltest.testmanager

Get test case baseline dataset

Syntax

```
baseline = getBaselineRun(result)
```

Description

`baseline = getBaselineRun(result)` gets the baseline dataset used in a test case, which belongs to the test case results object. The baseline dataset is saved with the test case result only if the **Save baseline data in test result** check box is selected in the test case under the **Baseline Criteria** section.

To record the baseline data in the test case result, you must set the `SaveBaselineRunInTestResult` test case property to `true`:

```
setProperty(testcase, 'SaveBaselineRunInTestResult', true);
```

Input Arguments

result — Test case result

`sltest.testmanager.TestCaseResult` object

Test case results to get baseline dataset from, specified as a `sltest.testmanager.TestCaseResult` object.

Output Arguments

baseline — Baseline dataset

`Simulink.sdi.Run` object

Test case baseline dataset, returned as a Simulink.sdi.Run object. If the **Save baseline data in test result** check box is not selected in the test case, then the function returns an empty array.

Examples

Get Baseline Data From Test Case

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Capture the baseline criteria and record baseline
baseline = captureBaselineCriteria(tc, 'baseline_API.mat', true);
setProperty(tc, 'SaveBaselineRunInTestResult', true);

% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc, 'Name', 'API Parameter Set');
po = addParameterOverride(ps, 'm', 55);

% Set the baseline criteria tolerance for one signal
sc = getSignalCriteria(baseline);
sc(1).AbsTol = 9;

% Run the test case and return an object with results data
resultsObj = run(tc);

% Get test case result
tcr = getTestCaseResults(resultsObj);

% Get the baseline run dataset
baselineOut = getBaselineRun(tcr);
```

- “Automate Tests Programmatically”

See Also

See Also

Simulink.sdi.Run

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getBaselineRun

Class: sltest.testmanager.TestIterationResult

Package: sltest.testmanager

Get test iteration baseline dataset

Syntax

```
baseline = getBaselineRun(resultObj)
```

Description

`baseline = getBaselineRun(resultObj)` gets the baseline dataset used in a test iteration, which belongs to the test iteration results object. The baseline dataset is saved with the test iteration result only if the **Save baseline data in test result** check box is selected in the parent test case under the **Baseline Criteria** section.

Input Arguments

resultObj — Test iteration result
object

Test iteration results object to get baseline dataset from, specified as a `sltest.testmanager.TestIterationResult` object.

Output Arguments

baseline — Baseline dataset
object

Test iteration baseline dataset, returned as a `Simulink.sdi.Run` object. If the **Save baseline data in test result** check box is not selected in the parent test case, then the function returns an empty array.

See Also

See Also

Simulink.sdi.Run

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getCleanupPlots

Class: sltest.testmanager.TestFileResult

Package: sltest.testmanager

Get plots from cleanup callbacks

Syntax

```
figs = getCleanupPlots(result)
```

Description

`figs = getCleanupPlots(result)` returns figure handles of plots generated from the cleanup callbacks of the test file associated with the results. Figures returned using this method are not visible. To see the plots, set the figure handle `Visible` property to 'on'.

Input Arguments

result — Test file results

sltest.testmanager.TestFileResult object

Test file results to get cleanup plot figure handles from, specified as a sltest.testmanager.TestFileResult object.

Output Arguments

figs — Figures from test file cleanup callbacks

array of figure handles

Figures from test file cleanup callbacks, returned as an array of figure handles.

Examples

Get Figure Handles from Test File Results

```
% Create the test file, suite, and case
tf = sltest.testmanager.TestFile('Cleanup Plots');
ts = createTestSuite(tf,'Cleanup Plots Test Suite');
tc = createTestCase(ts,'baseline','Cleanup Plots Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf,'New Test Suite 1');
remove(tsDel);

% Create a plot in the test file cleanup callback
setProperty(tf,'CleanupCallback','a = [1,2,3]; f = figure; plot(a);');

% Set option to save figures
opt = getOptions(tf);
opt.SaveFigures = true;

% Assign the system under test to the test case
setProperty(tc,'Model','sldemo_absbrake');

% Run the test and capture results
resultset = run(tf);
tfr = getTestFileResults(resultset);

% Get the cleanup plot figure handles
figs = tfr.getCleanupPlots;
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

[sltest.testmanager.TestFile](#) | [sltest.testmanager.TestFileResult](#) |
[sltest.testmanager.TestFile.setProperty](#) | [sltest.testmanager.Options](#)

Topics

“Create, Store, and Open MATLAB Figures”

“Export Test Results and Generate Reports”

Introduced in R2017a

getCleanupPlots

Class: sltest.testmanager.TestSuiteResult

Package: sltest.testmanager

Get plots from cleanup callbacks

Syntax

```
figs = getCleanupPlots(result)
```

Description

`figs = getCleanupPlots(result)` returns figure handles of plots from the cleanup callbacks of the test suite associated with the results. Figures returned using this method are not visible. To see the plots, set the figure handle `Visible` property to `'on'`.

Input Arguments

result — Test suite results

sltest.testmanager.TestSuiteResult object

Test suite results to get cleanup plot figure handles from, specified as an sltest.testmanager.TestSuiteResult object.

Output Arguments

figs — Figures from test suite cleanup callbacks

array of figure handles

Figures from test suite cleanup callbacks, returned as an array of figure handles.

Examples

Get Figure Handles from Test Suite Results

```
% Create the test file, suite, and case
tf = sltest.testmanager.TestFile('Test Suite Cleanup Plots');
ts = createTestSuite(tf, 'Cleanup Plots Test Suite');
tc = createTestCase(ts, 'baseline', 'Cleanup Plots Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Create a plot in the test suite cleanup callback
setProperty(tc, 'CleanupCallback', 'a = [1,2,3]; f = figure; plot(a);');

% Set option to save figures
opt = getOptions(tf);
opt.SaveFigures = true;

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Run the test and capture results
resultset = run(tf);
tfr = getTestFileResults(resultset);
tsr = getTestSuiteResults(tfr);

% Get the cleanup plot figure handles
figs = tsr.getCleanupPlots;
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

[sltest.testmanager.TestSuite](#) | [sltest.testmanager.TestSuiteResult](#) |
[sltest.testmanager.TestSuite.setProperty](#) | [sltest.testmanager.Options](#)

Topics

“Create, Store, and Open MATLAB Figures”

“Export Test Results and Generate Reports”

Introduced in R2017a

getComparisonRun

Class: sltest.testmanager.TestCaseResult

Package: sltest.testmanager

Get test case signal comparison results

Syntax

```
run = getComparisonRun(result)
```

Description

`run = getComparisonRun(result)` gets the test case comparison results that belong to the test case results object. The results are output to a `Simulink.sdi.Run` object, which contains signal data for each comparison, tolerance, and difference result.

Input Arguments

result — Test case result

`sltest.testmanager.TestCaseResult` object

Test case results to get comparison results from, specified as a `sltest.testmanager.TestCaseResult` object.

Output Arguments

run — Comparison results

`Simulink.sdi.Run` object

Test case comparison signal results, returned as a `Simulink.sdi.Run` object.

Examples

Get Comparison Data From Test Case

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf,'API Test Suite');
tc = createTestCase(ts,'baseline','Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf,'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc,'Model','sldemo_absbrake');

% Capture the baseline criteria and record baseline
baseline = captureBaselineCriteria(tc,'baseline_API.mat',true);

% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc,'Name','API Parameter Set');
po = addParameterOverride(ps,'m',55);

% Set the baseline criteria tolerance for one signal
sc = getSignalCriteria(baseline);
sc(1).AbsTol = 9;

% Run the test case and return an object with results data
resultsObj = run(tc);

% Get test case result
tcr = getTestCaseResults(resultsObj);

% Get the baseline run dataset
compOut = getComparisonRun(tcr);
```

- “Automate Tests Programmatically”

See Also

See Also

Simulink.sdi.Run

Topics

“Automate Tests Programmatically”

Introduced in R2015a

getComparisonRun

Class: sltest.testmanager.TestIterationResult

Package: sltest.testmanager

Get test iteration signal comparison results

Syntax

```
run = getComparisonRun(result)
```

Description

`run = getComparisonRun(result)` gets the test iteration comparison results that belong to the test iteration results object. The results are output to a `Simulink.sdi.Run` object, which contains signal data for each comparison, tolerance, and difference result.

Input Arguments

result — Test iteration result

`sltest.testmanager.TestIterationResult` object

Test iteration results to get results from, specified as a `sltest.testmanager.TestIterationResult` object.

Output Arguments

run — Comparison results

`Simulink.sdi.Run` object

Test iteration comparison results, returned as a `Simulink.sdi.Run` object.

See Also

See Also

`sltest.testmanager.TestIterationResult`

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getCoverageResults

Class: sltest.testmanager.ResultSet

Package: sltest.testmanager

Get coverage results

Syntax

```
covResult = getCoverageResults(result)
covResult = getCoverageResults(result,model)
```

Description

`covResult = getCoverageResults(result)` gets the coverage results that belong to the result set object.

`covResult = getCoverageResults(result,model)` gets the coverage results that belong to the result set object and the specified model.

Input Arguments

result — **Result set**

sltest.testmanager.ResultSet object

Result set object to get coverage results from, specified as a sltest.testmanager.ResultSet object.

model — **Model name**

character vector

Name of a model within the set of coverage results, specified as a character vector.

Output Arguments

covResult — **Coverage results**

object array

Coverage results contained in the result set, returned as an array of `cvdata` objects. For more information on `cvdata` objects, see `cv.cvdatagroup`.

Examples

Get Result Set Coverage Results

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'simulation', 'Coverage Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');

% Turn on coverage settings at test-file level
cov = getCoverageSettings(tf);
cov.RecordCoverage = true;

% Enable MCDC and signal range coverage metrics
cov.MetricSettings = 'mr';

% Run the test case and return an object with results data
ro = run(tf);

% Get the coverage results
cr = getCoverageResults(ro);
```

- “Automate Tests Programmatically”
- “Collect Coverage in Tests”

See Also

See Also

`sltest.testmanager.CoverageSettings`

Topics

“Automate Tests Programmatically”

“Collect Coverage in Tests”

Introduced in R2016a

getCoverageResults

Class: `sltest.testmanager.TestCaseResult`

Package: `sltest.testmanager`

Get coverage results

Syntax

```
covResult = getCoverageResults(result)
covResult = getCoverageResults(result,model)
```

Description

`covResult = getCoverageResults(result)` gets the coverage results that belong to the test case results object.

`covResult = getCoverageResults(result,model)` gets the coverage results that belong to the test case results object and the specified model.

Input Arguments

result — Test case result

`sltest.testmanager.TestCaseResult` object

Test case results to get coverage results from, specified as a `sltest.testmanager.TestCaseResult` object.

model — Model name

character vector

Name of a model within the set of coverage results, specified as a character vector.

Output Arguments

covResult — Coverage results

object array

Coverage results contained in the test case result, returned as an array of `cvdata` objects. For more information on `cvdata` objects, see `cv.cvdatagroup`.

Examples

Get Test Suite Coverage Results

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'simulation', 'Coverage Test Case');
```

```
% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);
```

```
% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');
```

```
% Turn on coverage settings at test-file level
cov = getCoverageSettings(tf);
cov.RecordCoverage = true;
```

```
% Enable MCDC and signal range coverage metrics
cov.MetricSettings = 'mr';
```

```
% Run the test case and return an object with results data
ro = run(tf);
```

```
% Get the coverage results
tfr = getTestFileResults(ro);
tsr = getTestSuiteResults(tfr);
tcs = getTestCaseResults(tsr);
cr = getCoverageResults(tcs);
```

- “Automate Tests Programmatically”
- “Collect Coverage in Tests”

See Also

See Also

`sltest.testmanager.CoverageSettings`

Topics

“Automate Tests Programmatically”

“Collect Coverage in Tests”

Introduced in R2016a

getCoverageResults

Class: sltest.testmanager.TestFileResult

Package: sltest.testmanager

Get coverage results

Syntax

```
covResult = getCoverageResults(result)
covResult = getCoverageResults(result,model)
```

Description

`covResult = getCoverageResults(result)` gets the coverage results that belong to the test file results object.

`covResult = getCoverageResults(result,model)` gets the coverage results that belong to the test file results object and the specified model.

Input Arguments

result — Test file result

sltest.testmanager.ResultSet object

Test file results to get coverage results from, specified as a sltest.testmanager.TestFileResult object.

model — Model name

character vector

Name of a model within the set of coverage results, specified as a character vector.

Output Arguments

covResult — Coverage results

object array

Coverage results contained in the test file result, returned as an array of `cvdata` objects. For more information on `cvdata` objects, see `cv.cvdatagroup`.

Examples

Get Test File Coverage Results

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'simulation', 'Coverage Test Case');
```

```
% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);
```

```
% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');
```

```
% Turn on coverage settings at test-file level
cov = getCoverageSettings(tf);
cov.RecordCoverage = true;
```

```
% Enable MCDC and signal range coverage metrics
cov.MetricSettings = 'mr';
```

```
% Run the test case and return an object with results data
ro = run(tf);
```

```
% Get the coverage results
tfr = getTestFileResults(ro);
cr = getCoverageResults(tfr);
```

- “Automate Tests Programmatically”
- “Collect Coverage in Tests”

See Also

See Also

`sltest.testmanager.CoverageSettings`

Topics

“Automate Tests Programmatically”

“Collect Coverage in Tests”

Introduced in R2016a

getCoverageResults

Class: sltest.testmanager.TestIterationResult

Package: sltest.testmanager

Get coverage results

Syntax

```
covResult = getCoverageResults(resultObj)
covResult = getCoverageResults(resultObj,model)
```

Description

`covResult = getCoverageResults(resultObj)` gets the coverage results that belong to the test iteration results object.

`covResult = getCoverageResults(resultObj,model)` gets the coverage results that belong to the test iteration results object and the specified model.

Input Arguments

resultObj — Test iteration result

sltest.testmanager.TestIterationResult object

Test iteration results object to get coverage results from, specified as a sltest.testmanager.TestIterationResult object.

model — Model name

character vector

Name of a model within the set of coverage results, specified as a character vector.

Example: 'sldemo_absbrake'

Output Arguments

covResult — Coverage results

object array

Coverage results contained in the test iteration result, returned as an array of `cvdata` objects. For more information on `cvdata` objects, see `cv.cvatagroup`.

See Also

See Also

`sltest.testmanager.CoverageSettings`

Topics

“Automate Tests Programmatically”

“Collect Coverage in Tests”

Introduced in R2016a

getCoverageResults

Class: `sltest.testmanager.TestSuiteResult`

Package: `sltest.testmanager`

Get coverage results

Syntax

```
covResult = getCoverageResults(result)
covResult = getCoverageResults(result,model)
```

Description

`covResult = getCoverageResults(result)` gets the coverage results that belong to the test suite results object.

`covResult = getCoverageResults(result,model)` gets the coverage results that belong to the test suite results object and the specified model.

Input Arguments

result — Test suite result

`sltest.testmanager.TestSuiteResult` object

Test suite results to get coverage results from, specified as a `sltest.testmanager.TestSuiteResult` object.

model — Model name

character vector

Name of a model within the set of coverage results, specified as a character vector.

Output Arguments

covResult — Coverage results

object array

Coverage results contained in the test suite result, returned as an array of cvdata objects. For more information on cvdata objects, see cv.cvdatagroup.

Examples

Get Test Suite Coverage Results

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'simulation', 'Coverage Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');

% Turn on coverage settings at test-file level
cov = getCoverageSettings(tf);
cov.RecordCoverage = true;

% Enable MCDC and signal range coverage metrics
cov.MetricSettings = 'mr';

% Run the test case and return an object with results data
ro = run(tf);

% Get the coverage results
tfr = getTestFileResults(ro);
tsr = getTestSuiteResults(tfr);
cr = getCoverageResults(tsr);
```

- “Automate Tests Programmatically”
- “Collect Coverage in Tests”

See Also

See Also

`sltest.testmanager.CoverageSettings`

Topics

“Automate Tests Programmatically”

“Collect Coverage in Tests”

Introduced in R2016a

getCoverageSettings

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Get coverage settings

Syntax

```
covSettings = getCoverageSettings(tc)
```

Description

`covSettings = getCoverageSettings(tc)` gets the coverage settings for a test case and returns an `sltest.testmanager.CoverageSettings` object.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case to get coverage settings from, specified as an `sltest.testmanager.TestCase` object.

Output Arguments

covSettings — Coverage settings

`sltest.testmanager.CoverageSettings` object

Coverage settings for the test case, returned as an `sltest.testmanager.CoverageSettings` object.

Examples

Get Coverage Settings

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'simulation', 'Coverage Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');

% Turn on coverage settings at test-file level
cov = getCoverageSettings(tf);
cov.RecordCoverage = true;

% Enable MCDC and signal range coverage metrics
cov.MetricSettings = 'mr';

% Get and check coverage settings
covSettings = getCoverageSettings(tc);
```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.CoverageSettings

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getCoverageSettings

Class: sltest.testmanager.TestFile

Package: sltest.testmanager

Get coverage settings

Syntax

```
covSettings = getCoverageSettings(tf)
```

Description

`covSettings = getCoverageSettings(tf)` gets the coverage settings for a test file and returns an `sltest.testmanager.CoverageSettings` object.

Input Arguments

tf — Test file

`sltest.testmanager.TestFile` object

Test file object to get coverage settings from, specified as an `sltest.testmanager.TestFile` object.

Output Arguments

covSettings — Coverage settings

object

Coverage settings for the test file, returned as `ansltest.testmanager.CoverageSettings` object.

Examples

Turn On Coverage For a Test File

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'simulation', 'Coverage Test Case');
```

```
% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);
```

```
% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');
```

```
% Turn on coverage settings at test-file level
cov = getCoverageSettings(tf);
cov.RecordCoverage = true;
```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.CoverageSettings

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getCoverageSettings

Class: sltest.testmanager.TestSuite

Package: sltest.testmanager

Get coverage settings

Syntax

```
covSettings = getCoverageSettings(ts)
```

Description

`covSettings = getCoverageSettings(ts)` gets the coverage settings for a test suite and returns an `sltest.testmanager.CoverageSettings` object.

Input Arguments

ts — Test suite

`sltest.testmanager.TestSuite` object

Test suite object to get coverage settings from, specified as an `sltest.testmanager.TestSuite` object.

Output Arguments

covSettings — Coverage settings

object

Coverage settings for the test suite, returned as an `sltest.testmanager.CoverageSettings` object.

Examples

Turn Off Coverage For a Test Suite

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'simulation', 'Coverage Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');

% Turn on coverage settings at test-file level
cov = getCoverageSettings(tf);
cov.RecordCoverage = true;

% Turn off coverage at test-suite level
cov = getCoverageSettings(ts);
cov.RecordCoverage = false;
```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.CoverageSettings

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getCustomCriteria

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Get custom criteria that belong to test case

Syntax

```
customCriteria = getCustomCriteria(tc)
```

Description

`customCriteria = getCustomCriteria(tc)` creates the custom criteria object `customCriteria` from the test case `tc`.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case to get the custom criteria from, specified as a `sltest.testmanager.TestCase` object.

Output Arguments

customCriteria — Test case custom criteria

`sltest.testmanager.CustomCriteria` object

Custom criteria of the test case, returned as an `sltest.testmanager.CustomCriteria` object.

Examples

Get Custom Criteria in Test Case

Create a test case object from the test suite `ts`.

```
tc = ts.getTestCaseByName('Requirement 1.3 Test');
```

Get the custom criteria from the test case `tc`.

```
tcCriteria = getCustomCriteria(tc);
```

- “Apply Custom Criteria to Test Cases”
- “Custom Criteria Programmatic Interface Example”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestIteration`

Topics

“Apply Custom Criteria to Test Cases”

“Custom Criteria Programmatic Interface Example”

“Automate Tests Programmatically”

Introduced in R2016b

getCustomCriteriaPlots

Class: sltest.testmanager.TestCaseResult

Package: sltest.testmanager

Get plots from test case custom criteria

Syntax

```
figs = getCustomCriteriaPlots(result)
```

Description

`figs = getCustomCriteriaPlots(result)` returns figure handles of plots generated from the custom criteria of the test case associated with the results. Figures returned using this method are not visible. To see the plots, set the figure handle `Visible` property to 'on'.

Input Arguments

result — Test case result

`sltest.testmanager.TestCaseResult` object

Test case result to get custom criteria figure handles from, specified as a `sltest.testmanager.TestCaseResult` object.

Output Arguments

figs — Figures from test case custom criteria

array of figure handles

Figures from test case custom criteria, returned as an array of figure handles.

Examples

Get Figure Handles from Test Case Results

```
% Create the test file, suite, and case
tf = sltest.testmanager.TestFile('Test Case Custom Criteria');
ts = createTestSuite(tf, 'CC Test Suite');
tc = createTestCase(ts, 'baseline', 'CC Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Create a plot in custom criteria and enable custom criteria
tcCriteria = getCustomCriteria(tc);
tcCriteria.Callback = 'a = [1,2,3]; f= figure; plot(a);';
tcCriteria.Enabled = true;

% Set option to save figures
opt = getOptions(tf);
opt.SaveFigures = true;

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Run the test and capture results
resultset = run(tf);
tfr = getTestFileResults(resultset);
tsr = getTestSuiteResults(tfr);
tcr = getTestCaseResults(tsr);

% Get the custom criteria plot figure handles
figs = tcr.getCustomCriteriaPlots;
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

sltest.testmanager.TestCaseResult | sltest.testmanager.CustomCriteria |
sltest.testmanager.Options

Topics

“Create, Store, and Open MATLAB Figures”
“Export Test Results and Generate Reports”

Introduced in R2017a

getCustomCriteriaPlots

Class: sltest.testmanager.TestIterationResult

Package: sltest.testmanager

Get plots from custom criteria

Syntax

```
figs = getCustomCriteriaPlots(result)
```

Description

`figs = getCustomCriteriaPlots(result)` returns figure handles of plots from the custom criteria of the test case associated with the iteration results. Figures returned using this method are not visible. To see the plots, set the figure handle `Visible` property to 'on'.

Input Arguments

result — Test iteration result

sltest.testmanager.TestIterationResult object

Test iteration result to get custom criteria plots from, specified as an sltest.testmanager.TestIterationResult object.

Output Arguments

figs — Figures from test case custom criteria

array of figure handles

Figures from test case custom criteria for the specified iteration, returned as an array of figure handles.

Examples

Get Figure Handles from Test Iteration Results

```

% Create the test file, suite, and case
tf = sltest.testmanager.TestFile('Iteration Custom Criteria Plots');
ts = createTestSuite(tf,'CC Test Suite');
tc = createTestCase(ts,'baseline','CC Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf,'New Test Suite 1');
remove(tsDel);

% Create a plot in custom criteria and enable custom criteria
tcCriteria = getCustomCriteria(tc);
tcCriteria.Callback = 'a = [1,2,3]; f= figure; plot(a);';
tcCriteria.Enabled = true;

% Set option to save figures
opt = getOptions(tf);
opt.SaveFigures = true;

% Assign the system under test to the test case
setProperty(tc,'Model','sldemo_absbrake');

% Specify iterations
vars = 32 : 0.5 : 34;

for k = 1 : length(vars)

    % Create test iteration object
    testItr = sltest.testmanager.TestIteration;

    % Set the parameter value for this iteration
    setVariable(testItr,'Name','g','Source','base workspace','Value',vars(k));

    str = sprintf('Iteration %d',k);

    % Add the iteration object to the test case
    addIteration(tc,testItr,str);
end

% Run the test and capture results
resultset = run(tf);

```

```
tfr = getTestFileResults(resultset);  
tsr = getTestSuiteResults(tfr);  
tcr = getTestCaseResults(tsr);  
tir = getIterationResults(tcr);  
  
% Get the custom criteria plot figure handles from first iteration  
figs = tir(1).getCustomCriteriaPlots;
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

[sltest.testmanager.TestIterationResult](#) | [sltest.testmanager.CustomCriteria](#) |
[sltest.testmanager.Options](#) | [sltest.testmanager.TestCaseResult.getIterationResults](#)

Topics

“Create, Store, and Open MATLAB Figures”
“Export Test Results and Generate Reports”

Introduced in R2017a

getCustomCriteriaResult

Class: sltest.testmanager.TestCaseResult

Package: sltest.testmanager

Get custom criteria results from test case result

Syntax

```
ccResult = getCustomCriteriaResult(tcResult)
```

Description

`ccResult = getCustomCriteriaResult(tcResult)` creates the custom criteria result object `ccResult` from test case result `tcResult`.

Input Arguments

tcResult — Test case result

`sltest.testmanager.TestCaseResult` object

Test case result to get the custom criteria result from, specified as a `TestCaseResult` object.

Output Arguments

ccResult — Custom criteria result

`sltest.testmanager.CustomCriteriaResult` object

Custom criteria result of the test case result, returned as an `CustomCriteriaResult` object.

Examples

Get Custom Criteria Result from Test Case Result

Create a test case result object from the test case result set `tcResultSet`.

```
tcResult = getTestCaseResults(tcResultSet);
```

Get the custom criteria from the test case result `tcResult`.

```
ccResult = getCustomCriteriaResult(tcResult);
```

- “Apply Custom Criteria to Test Cases”
- “Custom Criteria Programmatic Interface Example”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestIteration`

Topics

“Apply Custom Criteria to Test Cases”

“Custom Criteria Programmatic Interface Example”

“Automate Tests Programmatically”

Introduced in R2016b

getCustomCriteriaResult

Class: sltest.testmanager.TestIterationResult

Package: sltest.testmanager

Get custom criteria results from test iteration

Syntax

```
ccResult = getCustomCriteriaResult(tiResult)
```

Description

`ccResult = getCustomCriteriaResult(tiResult)` creates the custom criteria result object `ccResult` from test iteration result `tiResult`.

Input Arguments

tiResult — Test iteration result

`sltest.testmanager.TestIterationResult` object

Test iteration result to get the custom criteria result from, specified as a `TestIterationResult` object.

Output Arguments

ccResult — Custom criteria result

`sltest.testmanager.CustomCriteriaResult` object

Custom criteria result of the test case result, returned as an `CustomCriteriaResult` object.

Examples

Get Custom Criteria Result from Test Case Result

Create a test case result object from the test case result set `tcResultSet`.

```
tcResult = getTestCaseResults(tcResultSet);
```

Get the iteration result from the test case result `tcResult`.

```
iterResult = getIterationResults(tcResult);
```

Get the custom criteria from the test case result `tcResult`.

```
ccResult = getCustomCriteriaResult(iterResult);
```

- “Apply Custom Criteria to Test Cases”
- “Custom Criteria Programmatic Interface Example”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestIteration`

Topics

“Apply Custom Criteria to Test Cases”

“Custom Criteria Programmatic Interface Example”

“Automate Tests Programmatically”

Introduced in R2016b

getEquivalenceCriteria

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Get equivalence criteria from test case

Syntax

```
eq = getEquivalenceCriteria(tc)
```

Description

`eq = getEquivalenceCriteria(tc)` gets the equivalence criteria set from the test case. The function returns an equivalence criteria object, `sltest.testmanager.EquivalenceCriteria`. This function can be used only if the test type is an equivalence test case.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case to get equivalence criteria from, specified as an `sltest.testmanager.TestCase` object.

Output Arguments

eq — Equivalence criteria

`sltest.testmanager.EquivalenceCriteria` object

Equivalence criteria in the test case, returned as an `sltest.testmanager.EquivalenceCriteria` object.

Examples

Get Equivalence Criteria

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'equivalence', 'Equivalence Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
% for Simulation 1 and Simulation 2
setProperty(tc, 'Model', 'sldemo_absbrake', 'SimulationIndex', 1);
setProperty(tc, 'Model', 'sldemo_absbrake', 'SimulationIndex', 2);

% Capture equivalence criteria
eq = captureEquivalenceCriteria(tc);

% Set the equivalence criteria tolerance for one signal
sc = getSignalCriteria(eq);
sc(1).AbsTol = 2.2;

% Get and check the equivalence criteria
eq = getEquivalenceCriteria(tc);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getInputs

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Get test case inputs

Syntax

```
inputs = getInputs(tc)
inputs = getInputs(tc,simulationIndex)
```

Description

`inputs = getInputs(tc)` gets the input sets in a test case and returns them as an array of test input objects, `sltest.testmanager.TestInput`.

`inputs = getInputs(tc,simulationIndex)` gets the input sets in a test case and returns them as an array of test input objects, `sltest.testmanager.TestInput`. If the test case is an equivalence test case, then specify the simulation index.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case to get test inputs from, specified as an `sltest.testmanager.TestCase` object.

simulationIndex — Test case simulation number

1 | 2

Simulation number that the parameter sets apply to, specified as an integer, 1 or 2. This setting applies to the simulation test case where there are two simulations. For baseline and simulation test cases, the default simulation index is 1.

Output Arguments

inputs — Test input

sltest.testmanager.TestInput object array

Test inputs that belong to the test case, returned as an array of sltest.testmanager.TestInput objects.

Examples

Get Test Inputs

```
% Load example model
open_system('sltestExcelExample');

% Create new test file
tf = sltest.testmanager.TestFile('C:\MATLAB\input_test_file.mldatx');
% Get test suite object
ts = getTestSuites(tf);
% Get test case object
tc = getTestCases(ts);

% Add the example model as the system under test
setProperty(tc, 'Model', 'sltestExcelExample');

% Add Excel data to Inputs section
input_path = fullfile(matlabroot, 'toolbox', 'simulinktest', ...
    'simulinktestdemos', 'sltestExampleInputs.xlsx');
input = addInput(tc, input_path, 1);
% Map the input signals by port order
map(input, 3);

% Get and check the test inputs
inputsOut = getInputs(tc);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getIterationResults

Class: sltest.testmanager.TestCaseResult

Package: sltest.testmanager

Get iteration results

Syntax

```
iterArray = getIterationResults(result)
```

Description

`iterArray = getIterationResults(result)` returns the test iteration results that are children of the test case result.

Input Arguments

result — Test case result

`sltest.testmanager.TestCaseResult` object

Test case results to get the iteration results from, specified as a `sltest.testmanager.TestCaseResult` object.

Output Arguments

iterArray — Iteration result

`sltest.testmanager.TestIterationResult` object array

Iteration result set, returned as an array of `sltest.testmanager.TestIterationResult` objects.

Examples

Get Test Iteration Results

```

% Create test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('Iterations Test File');
ts = getTestSuites(tf);
tc = createTestCase(ts, 'simulation', 'Simulation Iterations');

% Specify model as system under test
setProperty(tc, 'Model', 'sldemo_autotrans');

% Set up table iteration
% Create iteration object
testItr1 = sltestiteration;
% Set iteration settings
setTestParam(testItr1, 'SignalBuilderGroup', 'Passing Maneuver');
% Add the iteration to test case
addIteration(tc, testItr1);

% Set up another table iteration
% Create iteration object
testItr2 = sltestiteration;
% Set iteration settings
setTestParam(testItr2, 'SignalBuilderGroup', 'Coasting');
% Add the iteration to test case
addIteration(tc, testItr2);

% Run test case that contains iterations
results = run(tc);

% Get iteration results
tcResults = getTestCaseResults(results);
iterResults = getIterationResults(tcResults);

```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestIterationResult

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getIterations

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Get test iterations that belong to test case

Syntax

```
iterArray = getIterations(tc)
iterArray = getIterations(tc,iterName)
```

Description

`iterArray = getIterations(tc)` get one or more test iteration objects that belong to the test case.

`iterArray = getIterations(tc,iterName)` get one or more test iteration objects with the specified name that belong to the test case.

Input Arguments

tc — Test case to get iteration from

sltest.testmanager.TestCase object

Test case that you want to get the iteration from, specified as a sltest.testmanager.TestCase object.

iterName — Test iteration name

character vector

Test iteration name, specified as a character vector. This is an optional argument.

Example: 'Test Iteration 5'

Output Arguments

iterArray — Test iterations

sltest.testmanager.TestIteration object array

Test iterations that belong to the test case, returned as an array of sltest.testmanager.TestIteration objects.

Examples

Get Test Iterations in Test Case

```
% Create test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('Iterations Test File');
ts = getTestSuites(tf);
tc = createTestCase(ts, 'simulation', 'Simulation Iterations');

% Specify model as system under test
setProperty(tc, 'Model', 'sldemo_autotrans');

% Set up table iteration
% Create iteration object
testItr1 = sltestiteration;
% Set iteration settings
setTestParam(testItr1, 'SignalBuilderGroup', 'Passing Maneuver');
% Add the iteration to test case
addIteration(tc, testItr1);

% Set up another table iteration
% Create iteration object
testItr2 = sltestiteration;
% Set iteration settings
setTestParam(testItr2, 'SignalBuilderGroup', 'Coasting');
% Add the iteration to test case
addIteration(tc, testItr2);

% Get iterations
iters = getIterations(tc);
```

- “Run Multiple Combinations of Tests Using Iterations”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestIteration`

Topics

“Run Multiple Combinations of Tests Using Iterations”

“Automate Tests Programmatically”

Introduced in R2016a

getOptions

Class: `sltest.testmanager.TestCase`

Package: `sltest.testmanager`

Get test file options

Syntax

```
opt = getOptions(tc)
```

Description

`opt = getOptions(tc)` returns the test file options object `sltest.testmanager.Options` associated with the test case `tc`.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case to get test file options from, specified as an `sltest.testmanager.TestCase` object.

Output Arguments

opt — Test file options

`sltest.testmanager.Options` object

Test file options, returned as an `sltest.testmanager.Options` object.

Examples

Get Test Case Test File Options

```
% Create the test file, test suite, and test case structure
```



```
tf = sltest.testmanager.TestFile('API Test File');  
ts = createTestSuite(tf, 'API Test Suite');  
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');  
  
% Get the test file options  
opt = getOptions(tc);
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

sltest.testmanager.Options | sltest.testmanager.TestSuite.getOptions |
sltest.testmanager.TestFile.getOptions

Topics

“Create, Store, and Open MATLAB Figures”
“Export Test Results and Generate Reports”

Introduced in R2017a

getOptions

Class: `sltest.testmanager.TestFile`

Package: `sltest.testmanager`

Get and set test file options

Syntax

```
opt = getOptions(tf)
```

Description

`opt = getOptions(tf)` returns the test file options object `sltest.testmanager.Options` associated with the test file `tf`.

Input Arguments

tf — Test file

`sltest.testmanager.TestFile` object

Test file whose options to get, specified as an `sltest.testmanager.TestFile` object.

Output Arguments

opt — Test file options

`sltest.testmanager.Options` object

Test file options, returned as an `sltest.testmanager.Options` object.

Examples

Get and Set Test File Options

```
% Create the test file, test suite, and test case structure
```

```
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Get the test file options
opt = getOptions(tf);

% Set the title for the report and specify to save figures
opt.Title = 'ABC Co. Test Results';
opt.SaveFigures = true;
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

sltest.testmanager.Options | sltest.testmanager.TestFile

Topics

“Create, Store, and Open MATLAB Figures”
“Export Test Results and Generate Reports”

Introduced in R2017a

getOptions

Class: `sltest.testmanager.TestSuite`

Package: `sltest.testmanager`

Get test file options

Syntax

```
opt = getOptions(ts)
```

Description

`opt = getOptions(ts)` returns the test file options object `sltest.testmanager.Options` associated with the test suite `ts`.

Input Arguments

ts — Test suite

`sltest.testmanager.TestSuite` object

Test suite to get test file options from, specified as an `sltest.testmanager.TestSuite` object.

Output Arguments

opt — Test file options

`sltest.testmanager.Options` object

Test file options, returned as an `sltest.testmanager.Options` object.

Examples

Get Test File Options

```
% Create the test file, test suite, and test case structure
```

```
tf = sltest.testmanager.TestFile('API Test File');  
ts = createTestSuite(tf, 'API Test Suite');  
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');  
  
% Get the test file options  
opt = getOptions(ts);
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

[sltest.testmanager.Options](#) | [sltest.testmanager.TestSuite](#)

Topics

“Create, Store, and Open MATLAB Figures”
“Export Test Results and Generate Reports”

Introduced in R2017a

getOutputRuns

Class: sltest.testmanager.TestCaseResult

Package: sltest.testmanager

Get test case simulation output results

Syntax

```
runArray = getOutputRuns(result)
```

Description

`runArray = getOutputRuns(result)` gets the test case simulation output results that are direct children of the test case results object.

Input Arguments

result — Test case result

sltest.testmanager.TestCaseResult object

Test case results to get simulation output results from, specified as a sltest.testmanager.TestCaseResult object.

Output Arguments

runArray — Simulation output results

Simulink.sdi.Run object

Test case simulation output results, returned as a Simulink.sdi.Run object array.

Examples

Get Simulation Output From Test Case

```
% Create the test file, test suite, and test case structure
```

```

tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc, 'baseline_API.mat', true);

% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc, 'Name', 'API Parameter Set');
po = addParameterOverride(ps, 'm', 55);

% Set the baseline criteria tolerance for one signal
sc = getSignalCriteria(baseline);
sc(1).AbsTol = 9;

% Run the test case and return an object with results data
resultsObj = run(tc);

% Get test case result
tcr = getTestCaseResults(resultsObj);

% Get the baseline run dataset
runArray = getOutputRuns(tcr);

```

- “Automate Tests Programmatically”

See Also

See Also

Simulink.sdi.Run

Topics

“Automate Tests Programmatically”

Introduced in R2015a

getOutputRuns

Class: sltest.testmanager.TestIterationResult

Package: sltest.testmanager

Get test iteration simulation output results

Syntax

```
runArray = getOutputRuns(resultObj)
```

Description

`runArray = getOutputRuns(resultObj)` gets the test iteration simulation output results that are direct children of the test iteration results object.

Input Arguments

resultObj — Test iteration result

object

Test iteration results object to get results from, specified as a `sltest.testmanager.TestIterationResult` object.

Output Arguments

runArray — Simulation output results

object

Test iteration simulation output results, returned as a `Simulink.sdi.Run` object array.

See Also

See Also

`sltest.testmanager.TestIterationResult`

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getParameterOverrides

Class: sltest.testmanager.ParameterSet

Package: sltest.testmanager

Get parameter overrides

Syntax

```
ovrs = getParameterOverrides(ps)
```

Description

`ovrs = getParameterOverrides(ps)` gets the parameter overrides in a parameter set and returns them as an array of parameter override objects, `sltest.testmanager.ParameterOverride`.

Input Arguments

ps — Parameter set

`sltest.testmanager.ParameterSet` object

Parameter set that you want to get the override from, specified as a `sltest.testmanager.ParameterSet` object.

Output Arguments

ovrs — Parameter overrides

`sltest.testmanager.ParameterOverride` object array

Parameter overrides that are in the parameter set object, returned as an array of `sltest.testmanager.ParameterOverride` objects.

Examples

Add Parameter Override to Parameter Set

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf,'API Test Suite');
tc = createTestCase(ts,'baseline','Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf,'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc,'Model','sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc,'baseline_API.mat',true);

% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc,'Name','API Parameter Set');
po = addParameterOverride(ps,'m',55);

% Check that the parameter override is applied
ovr = getParameterOverrides(ps);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getParameterSets

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Get test case parameter sets

Syntax

```
psets = getParameterSets(tc)
psets = getParameterSets(tc,simulationIndex)
```

Description

`psets = getParameterSets(tc)` gets the parameter sets in a test case and returns them as an array of parameter set objects, `sltest.testmanager.ParameterSet`.

`psets = getParameterSets(tc,simulationIndex)` gets the parameter sets in a test case and returns them as an array of parameter set objects, `sltest.testmanager.ParameterSet`. If the test case is an equivalence test case, then specify the simulation index.

Input Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case to get test inputs from, specified as an `sltest.testmanager.TestCase` object.

simulationIndex — Test case simulation number

1 | 2

Simulation number that the parameter sets apply to, specified as an integer, 1 or 2. This setting applies to the simulation test case where there are two simulations. For baseline and simulation test cases, the default simulation index is 1.

Output Arguments

psets — Parameter set

`sltest.testmanager.ParameterSet` object array

Parameter sets that belong to the test case, returned as an array of `sltest.testmanager.ParameterSet` objects.

Examples

Get Parameter Sets

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc, 'Name', 'API Parameter Set');
po = addParameterOverride(ps, 'm', 55);

% Get and check the parameter set
psets = getParameterSets(tc);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getProperty

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Get test case property

Syntax

```
val = getProperty(tc,propertyName)
val = getProperty( ____,simulationIndex)
```

Description

`val = getProperty(tc,propertyName)` gets a test case property.

`val = getProperty(____,simulationIndex)` gets a test case property. If the test case is an equivalence test case, then specify the simulation index.

Input Arguments

tc — Test case

sltest.testmanager.TestCase object

Test case to get test setting property from, specified as an sltest.testmanager.TestCase object.

propertyName — Test case property

character vector

Test suite property names, specified as a character vector. The properties are set using the sltest.testmanager.TestCase.setProperty method. The available properties are:

- 'Model' — name of the model to be tested
- 'SimulationMode' — simulation mode of the model during the test
- 'HarnessName' — harness name used for the test
- 'HarnessOwner' — harness owner name

- 'OverrideStartTime' — override start time
- 'StartTime' — start time override value of simulation
- 'OverrideStopTime' — override stop time
- 'StopTime' — stop time override value of simulation
- 'OverrideInitialState' — override initial state
- 'InitialState' — character vector evaluated to specify the initial state of the system under test
- 'PreloadCallback' — character vector evaluated before the model loads and before model callbacks
- 'PostloadCallback' — character vector evaluated after the system under test loads and PostLoadFcn callback completes
- 'PreStartRealTimeApplicationCallback' — character vector evaluated before the real-time application is started on target computer
- 'CleanupCallback' — character vector evaluated after simulation completes and all model callbacks have run
- 'UseSignalBuilderGroups' — use signal builder groups for test input
- 'SignalBuilderGroup' — signal builder group name to use
- 'OverrideModelOutputSettings' — override model output settings
- 'SaveOutput' — save simulation output
- 'SaveState' — save model states during simulation
- 'SaveFinalState' — save final state of simulation
- 'SignalLogging' — log signals
- 'DSMLogging' — log data store
- 'ConfigsetOverrideSetting' — value to determine override of configuration set
- 'ConfigsetName' — configuration set override name
- 'ConfigsetFileLocation' — path to a MAT-file that contains a configuration set object
- 'ConfigsetVarName' — name of the variable in ConfigsetFileLocation that is a configuration set
- 'IterationScript' — character vector evaluated for test case iteration script
- 'SimulationIndex' — determines which simulation a property applies to, applicable to the equivalence test case type

- 'FastRestart' — indicates if test iterations run using fast restart mode
- 'SaveBaselineRunInTestResult' — enable saving the baseline run used in the test case, saved in the test result
- 'LoadAppFrom' — location to load real-time application from
- 'TargetComputer' — target computer name
- 'TargetApplication' — target application name

simulationIndex — Test case simulation number

1 | 2

Simulation number that the property applies to, specified as an integer, 1 or 2. This setting applies to the simulation test case where there are two simulations. For baseline and simulation test cases, the simulation index is 1.

Output Arguments

val — Property content

character vector | logical | scalar

The content of the test case property, returned as a character vector, logical, or scalar value.

Examples

Get Test Case Property

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf,'API Test Suite');
tc = createTestCase(ts,'baseline','Baseline API Test Case');

% Assign the system under test to the test case
setProperty(tc,'Model','sldemo_absbrake');

% Get and check the system under test model
getProperty(tc,'Model');
```

- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestCase.setProperty`

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getProperty

Class: sltest.testmanager.TestFile

Package: sltest.testmanager

Get test file property

Syntax

```
val = getProperty(tf,propertyName)
```

Description

`val = getProperty(tf,propertyName)` gets a test file property.

Input Arguments

tf — Test file

`sltest.testmanager.TestFile` object

Test file to get the property from, specified as an `sltest.testmanager.TestFile` object.

propertyName — Test file property

`'CleanupCallback' | 'SetupCallback' |`

Test file property names, specified as:

- `'SetupCallback'` to get the content of the test file setup callback
- `'CleanupCallback'` to get the content of the test file cleanup callback

Output Arguments

val — Property content

character vector

The content of the test suite property, returned as a character vector.

Examples

Get Test File Property

```
% Create a test file and test suite
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
```

```
% Get the setup callback property
propName = getProperty(tf, 'SetupCallback');
```

- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestFile.setProperty`

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getProperty

Class: sltest.testmanager.TestSuite

Package: sltest.testmanager

Get test suite property

Syntax

```
val = getProperty(ts,propertyName)
```

Description

`val = getProperty(ts,propertyName)` gets a test suite property.

Input Arguments

ts — Test suite

sltest.testmanager.TestSuite object

Test suite object to get the property from, specified as an sltest.testmanager.TestSuite object.

propertyName — Test suite property

character vector

Test suite property names, specified as a character vector. The available properties are 'SetupCallback' and 'CleanupCallback'.

Output Arguments

val — Property content

character vector

The content of the test suite property, returned as a character vector.

Examples

Get Test Suite Property

```
% Create a test file and new test suite
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
```

```
% Get the setup callback property
propName = getProperty(ts, 'SetupCallback');
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getSetupPlots

Class: sltest.testmanager.TestFileResult

Package: sltest.testmanager

Get plots from setup callbacks

Syntax

```
figs = getSetupPlots(result)
```

Description

`figs = getSetupPlots(result)` returns figure handles of plots from the setup callbacks of the test file associated with the results. Figures returned using this method are not visible. To see the plots, set the figure handle `Visible` property to `'on'`.

Input Arguments

result — Test file result

sltest.testmanager.TestFileResult object

Test file results to get setup plot figure handles from, specified as a sltest.testmanager.TestFileResult object

Output Arguments

figs — Figures from test file setup callbacks

array of figure handles

Figures from test file setup callbacks, returned as an array of figure handles.

Examples

Get Test File Setup Plots

```
% Create the test file, suite, and case
tf = sltest.testmanager.TestFile('Get Test File Setup Plots');
ts = createTestSuite(tf, 'Setup Plots Test Suite');
tc = createTestCase(ts, 'baseline', 'Setup Plots Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Create a plot in the test file setup callback
setProperty(tf, 'SetupCallback', 'a = [1,2,3]; f = figure; plot(a);');

% Set option to save figures
opt = getOptions(tf);
opt.SaveFigures = true;

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Run the test and capture results
resultset = run(tf);
tfr = getTestFileResults(resultset);

% Get the setup plot figure handles
figs = tfr.getSetupPlots;
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

[sltest.testmanager.TestFile](#) | [sltest.testmanager.TestFileResult](#) |
[sltest.testmanager.TestFile.setProperty](#) | [sltest.testmanager.Options](#)

Topics

“Create, Store, and Open MATLAB Figures”

“Export Test Results and Generate Reports”

Introduced in R2017a

getSetupPlots

Class: `sltest.testmanager.TestSuiteResult`

Package: `sltest.testmanager`

Plots from setup callbacks

Syntax

```
figs = getSetupPlots(result)
```

Description

`figs = getSetupPlots(result)` returns figure handles of plots generated from the setup callbacks of the test suite associated with the results. Figures returned using this method are not visible. To see the plots, set the figure handle `Visible` property to `'on'`.

Input Arguments

result — Test suite results

`sltest.testmanager.TestSuiteResult` object

Test suite results to get setup plot figure handles from, specified as a `sltest.testmanager.TestSuiteResult` object.

Output Arguments

figs — Figures from test suite setup callbacks

array of figure handles

Figures from test suite setup callbacks, returned as an array of figure handles.

Examples

Get Test Suite Setup Plots

```
% Create the test file, suite, and case
tf = sltest.testmanager.TestFile('Test Suite Setup Plots');
ts = createTestSuite(tf, 'Setup Plots Test Suite');
tc = createTestCase(ts, 'baseline', 'Setup Plots Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Create a plot in the test suite setup callback
setProperty(ts, 'SetupCallback', 'a = [1,2,3]; f = figure; plot(a);');

% Set option to save figures
opt = getOptions(tf);
opt.SaveFigures = true;

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Run the test and capture results
resultset = run(tf);
tfr = getTestFileResults(resultset);
tsr = getTestSuiteResults(tfr);

% Get the setup plot figure handles
figs = tsr.getSetupPlots;
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

sltest.testmanager.TestSuite | sltest.testmanager.TestSuiteResult |
sltest.testmanager.TestSuite.setProperty | sltest.testmanager.Options

Topics

“Create, Store, and Open MATLAB Figures”

“Export Test Results and Generate Reports”

Introduced in R2017a

getSignalCriteria

Class: sltest.testmanager.BaselineCriteria

Package: sltest.testmanager

Get signal criteria

Syntax

```
sigCriteria = getSignalCriteria(bc)
```

Description

`sigCriteria = getSignalCriteria(bc)` gets the list of the signal criteria in a baseline criteria set and returns them as an array of signal criteria objects, `sltest.testmanager.SignalCriteria`.

Input Arguments

bc — Baseline criteria

`sltest.testmanager.BaselineCriteria` object

Baseline criteria that you want to get signal criteria from, specified as a `sltest.testmanager.BaselineCriteria` object.

Output Arguments

sigCriteria — Signal criteria object

object array

Signal criteria that are in the baseline criteria object, returned as an array of `sltest.testmanager.SignalCriteria` objects.

Examples

Add Baseline Criteria and Change Tolerance

In this example, a signal data set is capture for the baseline criteria, and the absolute tolerance is changed from 0 to 9.

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc, 'baseline_API.mat', true);

% Set the baseline criteria tolerance for a signal
sc = getSignalCriteria(baseline);
sc(1).AbsTol = 9;
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getSignalCriteria

Class: sltest.testmanager.EquivalenceCriteria

Package: sltest.testmanager

Get signal criteria

Syntax

```
sigCriteria = getSignalCriteria(eq)
```

Description

`sigCriteria = getSignalCriteria(eq)` gets the list of the signal criteria in an equivalence criteria set and returns them as an array of signal criteria objects, `sltest.testmanager.SignalCriteria`.

Input Arguments

eq — Equivalence criteria

`sltest.testmanager.EquivalenceCriteria` object

Equivalence criteria that you want to get criteria from, specified as a `sltest.testmanager.EquivalenceCriteria` object.

Output Arguments

sigCriteria — Signal criteria object

object array

Signal criteria that are in the equivalence criteria object, returned as an array of `sltest.testmanager.SignalCriteria` objects.

Examples

Remove Equivalence Criteria

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf,'API Test Suite');
tc = createTestCase(ts,'equivalence','Equivalence Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf,'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
% for Simulation 1 and Simulation 2
setProperty(tc,'Model','sldemo_absbrake','SimulationIndex',1);
setProperty(tc,'Model','sldemo_absbrake','SimulationIndex',2);

% Add a parameter override to Simulation 1 and 2
ps1 = addParameterSet(tc,'Name','Parameter Set 1','SimulationIndex',1);
po1 = addParameterOverride(ps1,'Rr',1.20);

ps2 = addParameterSet(tc,'Name','Parameter Set 2','SimulationIndex',2);
po2 = addParameterOverride(ps2,'Rr',1.24);

% Capture equivalence criteria
eq = captureEquivalenceCriteria(tc);

% Set the equivalence criteria tolerance for one signal
sc = getSignalCriteria(eq);
sc(1).AbsTol = 2.2;

% Check that signal criteria was added
sigCrit = getSignalCriteria(eq);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getSimulationPlots

Class: sltest.testmanager.TestCaseResult

Package: sltest.testmanager

Get plots from test case callbacks

Syntax

```
figs = getSimulationPlots(result)
figs = getSimulationPlots(result,index)
```

Description

`figs = getSimulationPlots(result)` returns figure handles of plots generated from the callbacks of the test case associated with the results. Figures returned using this method are not visible. To see the plots, set the figure handle `Visible` property to 'on'.

`figs = getSimulationPlots(result,index)` returns the figure handles from the simulation specified by `index`.

Input Arguments

result — Test case result

sltest.testmanager.TestCaseResult object

Test case results to get simulation plot figure handles from, specified as an sltest.testmanager.TestCaseResult object.

index — Simulation index

1 (default) | 2

Simulation index, specified as 1 or 2.

Output Arguments

figs — Figures from test case callbacks

array of figure handles

Figures from test case callbacks, returned as an array of figure handles.

Examples

Get Figure Handles from Test Case Results

```
% Create the test file, suite, and case
tf = sltest.testmanager.TestFile('Simulation Plots Test Case');
ts = createTestSuite(tf, 'Sim Plots Test Suite');
tc = createTestCase(ts, 'baseline', 'Sim Plots Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Create a plot in a test case callback
setProperty(tc, 'PostloadCallback', 'a = [1,2,3]; f = figure; plot(a);');

% Set option to save figures
opt = getOptions(tf);
opt.SaveFigures = true;

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Run the test and capture results
resultset = run(tf);
tfr = getTestFileResults(resultset);
tsr = getTestSuiteResults(tfr);
tcr = getTestCaseResults(tsr);

% Get the test case callback plots figure handles
figs = tcr.getSimulationPlots;
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

`sltest.testmanager.TestCaseResult` | `sltest.testmanager.TestCase.setProperty` | `sltest.testmanager.Options`

Topics

“Create, Store, and Open MATLAB Figures”

“Export Test Results and Generate Reports”

Introduced in R2017a

getTestCaseByName

Class: `sltest.testmanager.TestSuite`

Package: `sltest.testmanager`

Get test case object by name

Syntax

```
tc = getTestCaseByName(ts, name)
```

Description

`tc = getTestCaseByName(ts, name)` returns a test case with the specified name.

Input Arguments

ts — Test suite

`sltest.testmanager.TestSuite` object

Test suite with the test case you want to get, specified as an `sltest.testmanager.TestSuite` object.

name — Test suite name

character vector

The name of the test case within a test suite object, specified as a character vector. If the name does not match a test case, then the function returns an empty test case object.

Output Arguments

tc — Test case

`sltest.testmanager.TestCase` object

Test case, returned as an `sltest.testmanager.TestCase` object. If the name does not match a test case, then the function returns an empty test case object.

Examples

Get Test Case Object

```
% Create a test file with default test suite and case  
tf = sltest.testmanager.TestFile('My Test File');
```

```
% Get test suite  
ts = getTestSuites(tf);
```

```
% Get the test case object by test case name  
tc = getTestCaseByName(ts, 'New Test Case 1');
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getSimulationPlots

Class: sltest.testmanager.TestIterationResult

Package: sltest.testmanager

Get plots from callbacks

Syntax

```
figs = getSimulationPlots(result)
figs = getSimulationPlots(result,index)
```

Description

`figs = getSimulationPlots(result)` returns figure handles of plots generated from the callbacks of the test iteration associated with the results. Figures returned using this method are not visible. To see the plots, set the figure handle `Visible` property to 'on'.

`figs = getSimulationPlots(result,index)` returns the figure handles from the simulation specified by `index`.

Input Arguments

result — Test iteration result

sltest.testmanager.TestIterationResult object

Test case iteration result to get callback figure handles from, specified as an sltest.testmanager.TestIterationResult object or a simulation index of the result.

index — Simulation index

1 (default) | 2

Simulation index, specified as 1 or 2.

Output Arguments

figs — Figures from test case callbacks

array of figure handles

Figures from test case callbacks for the specified iteration, returned as an array of figure handles.

Examples

Get Figure Handles from Test Iteration Results

```
% Create the test file, suite, and case
tf = sltest.testmanager.TestFile('Simulation Plots for Test Iterations');
ts = createTestSuite(tf, 'Sim Plots Test Suite');
tc = createTestCase(ts, 'baseline', 'Sim Plots Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Create a plot in a callback
setProperty(tc, 'PostloadCallback', 'a = [1,2,3]; f = figure; plot(a);');

% Set option to save figures
opt = getOptions(tf);
opt.SaveFigures = true;

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');

% Define iterations
vars = 32 : 0.5 : 34;

for k = 1 : length(vars)

    % Create test iteration object
    testItr = sltest.testmanager.TestIteration;

    % Set the parameter value for this iteration
    setVariable(testItr, 'Name', 'g', 'Source', 'base workspace', 'Value', vars(k));
```



```
str = sprintf('Iteration %d',k);

% Add the iteration object to the test case
addIteration(tc,testItr,str);
end

% Run the test and capture results
resultset = run(tf);
tfr = getTestFileResults(resultset);
tsr = getTestSuiteResults(tfr);
tcr = getTestCaseResults(tsr);
tir = getIterationResults(tcr);

% Get the callback plot figure handles from the first iteration
figs = tir(1).getSimulationPlots;
```

- “Create, Store, and Open MATLAB Figures”
- “Export Test Results and Generate Reports”

See Also

See Also

[sltest.testmanager.TestIterationResult](#) | [sltest.testmanager.TestCase.setProperty](#) | [sltest.testmanager.TestCaseResult.getIterationResults](#) | [sltest.testmanager.Options](#)

Topics

“Create, Store, and Open MATLAB Figures”
“Export Test Results and Generate Reports”

Introduced in R2017a

getTestCaseResults

Class: sltest.testmanager.ResultSet

Package: sltest.testmanager

Get test case results object

Syntax

```
testCaseResultArray = getTestCaseResults(result)
```

Description

`testCaseResultArray = getTestCaseResults(result)` gets the test case results that are direct children of the results set object.

Input Arguments

result — Results set

`sltest.testmanager.ResultSet` object

Results set to get test case results from, specified as a `sltest.testmanager.ResultSet` object.

Output Arguments

testCaseResultArray — Test case results

`sltest.testmanager.TestCaseResult` object array

Test case results, returned as an array of `sltest.testmanager.TestCaseResult` objects. The function returns objects that are direct children of the results set object.

Examples

Get Test Case Result Data

Use the function `sltest.testmanager.run` to return a result set that contains test file, test suite, and test case results.

```
% Run tests in the Test Manager
result = sltest.testmanager.run;

% Get the test file results
testFileResultArray = getTestFileResults(result);

% Get the test suite results
testSuiteResultArray = getTestSuiteResults(result);

% Get the test case results
testCaseResultArray = getTestCaseResults(result);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015a

getTestCaseResults

Class: `sltest.testmanager.TestSuiteResult`

Package: `sltest.testmanager`

Get test case results object

Syntax

```
testCaseResultArray = getTestCaseResults(result)
```

Description

`testCaseResultArray = getTestCaseResults(result)` gets the test case results that are direct children of the test suite results object.

Input Arguments

result — Test suite result

`sltest.testmanager.TestSuiteResult` object

Test suite results to get test case results from, specified as a `sltest.testmanager.TestSuiteResult` object.

Output Arguments

testCaseResultArray — Test case results

`sltest.testmanager.TestCaseResult` object array

Test case results, returned as an array of `sltest.testmanager.TestCaseResult` objects. The function returns objects that are direct children of the test suite results object.

Examples

Get Test Case Result Data

Use the function `sltest.testmanager.run` to return a result set that contains test file, test suite, and test case results.

```
% Run tests in the Test Manager
result = sltest.testmanager.run;

% Get the test file results
testFileResultArray = getTestFileResults(result);

% Get the test suite results
testSuiteResultArray = getTestSuiteResults(testFileResultArray);

% Get the test case results
testCaseResultArray = getTestCaseResults(testSuiteResultArray);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015a

getTestCases

Class: sltest.testmanager.TestSuite

Package: sltest.testmanager

Get test cases at first level of test suite

Syntax

```
tcArray = getTestCases(ts)
```

Description

`tcArray = getTestCases(ts)` returns an array of test case objects that are at the first level of the specified test suite.

Input Arguments

ts — Test suite

sltest.testmanager.TestSuite object

Test suite with the test cases you want to get, specified as an sltest.testmanager.TestSuite object.

Output Arguments

tcArray — Test case array

object array

Array of test cases at the first level of the specified test suite, returned as an array of sltest.testmanager.TestCase objects.

Examples

Get Test Case Object

```
% Create a test file with default test suite and case  
tf = sltest.testmanager.TestFile('My Test File');
```

```
% Get test suite  
ts = getTestSuites(tf);
```

```
% Get the test case object  
tc = getTestCases(ts);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getTestSuiteByName

Class: sltest.testmanager.TestFile

Package: sltest.testmanager

Get test suite object by name

Syntax

```
ts = getTestSuiteByName(tf,name)
```

Description

ts = getTestSuiteByName(tf,name) returns a test suite with the specified name.

Input Arguments

tf — Test file

sltest.testmanager.TestFile object

Test file that contains the test suite, specified as a sltest.testmanager.TestFile object.

name — Test suite name

character vector

The name of the test suite within the test file, specified as a character vector. If the name does not match a test suite, then the function returns an empty test suite object.

Example: 'Test Suite 5'

Output Arguments

ts — Test suite object

object

Test suite, returned as an sltest.testmanager.TestSuite object. If the name does not match a test suite, then the function returns an empty test suite object.

Examples

Get Test Suite Object

```
% Create a test file with default test suite  
tf = sltest.testmanager.TestFile('My Test File');
```

```
% Get the test suite object by test suite name  
ts = getTestSuiteByName(tf, 'New Test Suite 1');
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getTestFileResults

Class: sltest.testmanager.ResultSet

Package: sltest.testmanager

Get test suite results object

Syntax

```
testFileResultArray = getTestFileResults(result)
```

Description

`testFileResultArray = getTestFileResults(result)` gets the test file results that are direct children of the results set object.

Input Arguments

result — Results set

`sltest.testmanager.ResultSet` object

Results set to get test file results from, specified as a `sltest.testmanager.ResultSet` object.

Output Arguments

testFileResultArray — Test file results

`sltest.testmanager.TestFileResult` object array

Test file results, returned as an array of `sltest.testmanager.TestFileResult` objects. The function returns objects that are direct children of the results set input object.

Examples

Get Test File Result Data

Use the function `sltest.testmanager.run` to return a result set that contains test file, test suite, and test case results.

```
% Run tests in the Test Manager
result = sltest.testmanager.run;

% Get the test file results
testSFileResultArray = getTestFileResults(result);

% Get the test suite results
testSuiteResultArray = getTestSuiteResults(result);

% Get the test case results
testCaseResultArray = getTestCaseResults(result);
```

- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.ResultSet` | `sltest.testmanager.TestSuiteResult` | `sltest.testmanager.TestCaseResult`

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getTestSuiteByName

Class: `sltest.testmanager.TestSuite`

Package: `sltest.testmanager`

Get test suite object by name

Syntax

```
tsOut = getTestSuiteByName(tsIn, name)
```

Description

`tsOut = getTestSuiteByName(tsIn, name)` returns a test suite with the specified name.

Input Arguments

tsIn — **Test suite**

`sltest.testmanager.TestSuite` object

Test suite, specified as an `sltest.testmanager.TestSuite` object.

name — **Test suite name**

character vector

The name of the test suite within a test suite object, specified as a character vector. If the name does not match a test suite, then the function returns an empty test suite object.

Output Arguments

tsOut — **Test suite**

`sltest.testmanager.TestSuite` object

Test suite, returned as an `sltest.testmanager.TestSuite` object. If the name does not match a test suite, then the function returns an empty test suite object.

Examples

Get Test Suite Object

```
% Create a test file and new test suite
tf = sltest.testmanager.TestFile('API Test File');
ts = getTestSuiteByName(tf, 'New Test Suite 1');

% Create new test suite
createTestSuite(ts, 'API Test Suite');

% Get test suite by name
ts2 = getTestSuiteByName(ts, 'API Test Suite');
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getTestSuites

Class: `sltest.testmanager.TestFile`

Package: `sltest.testmanager`

Get test suites at first level of test file

Syntax

```
tsArray = getTestSuites(tf)
```

Description

`tsArray = getTestSuites(tf)` returns an array of test suite objects that are at the first level of the test file.

Input Arguments

tf — Test file

`sltest.testmanager.TestFile` object

Test file that contains the test suites, specified as a `sltest.testmanager.TestFile` object.

Output Arguments

tsArray — Test suite array

object array

Array of test suites at the first level of the test file, returned as an array of `sltest.testmanager.TestSuite` objects.

Examples

Get Test Suite Object

```
% Create a test file with default test suite
```

```
tf = sltest.testmanager.TestFile('My Test File');  
  
% Get the test suite object from the test file  
ts = getTestSuites(tf);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getTestSuites

Class: sltest.testmanager.TestSuite

Package: sltest.testmanager

Get test suites at first level of test suite

Syntax

```
tsArray = getTestSuites(ts)
```

Description

`tsArray = getTestSuites(ts)` returns an array of test suite objects that are at the first level of the specified test suite.

Input Arguments

ts — Test suite

sltest.testmanager.TestSuite object

Test suite that contains the test suite you want to get, specified as an sltest.testmanager.TestSuite object.

Output Arguments

tsArray — Test suite array

object array

Array of test suites at the first level of the specified test suite, returned as an array of sltest.testmanager.TestSuite objects.

Examples

Get Test Suite Object

```
% Create a test file with default test suite
tf = sltest.testmanager.TestFile('My Test File');

% Get the default test suite
ts1 = getTestSuites(tf);

% Add a test suite to default test suite
ts2 = createTestSuite(ts1,'New Test Suite 2');

% Get the test suite object from the test file
% as a new object
tsNew = getTestSuites(ts1);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

getTestSuiteResults

Class: sltest.testmanager.ResultSet

Package: sltest.testmanager

Get test suite results object

Syntax

```
testSuiteResultArray = getTestSuiteResults(result)
```

Description

`testSuiteResultArray = getTestSuiteResults(result)` gets the test suite results that are direct children of the results set object.

Input Arguments

result — Results set

`sltest.testmanager.ResultSet` object

Results set to get test suite results from, specified as a `sltest.testmanager.ResultSet` object.

Output Arguments

testSuiteResultArray — Test suite results

`sltest.testmanager.TestSuiteResult` object array

Test suite results, returned as an array of `sltest.testmanager.TestSuiteResult` objects. The function returns objects that are direct children of the results set object.

Examples

Get Test Suite Result Data

Use the function `sltest.testmanager.run` to return a result set that contains test file, test suite, and test case results.

```
% Run tests in the Test Manager
result = sltest.testmanager.run;

% Get the test file results
testFileResultArray = getTestFileResults(result);

% Get the test suite results
testSuiteResultArray = getTestSuiteResults(result);

% Get the test case results
testCaseResultArray = getTestCaseResults(result);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015a

getTestSuiteResults

Class: sltest.testmanager.TestFileResult

Package: sltest.testmanager

Get test suite results object

Syntax

```
testSuiteResultArray = getTestSuiteResults(result)
```

Description

`testSuiteResultArray = getTestSuiteResults(result)` gets the test suite results that are direct children of the test file results object.

Input Arguments

result — Test file results

`sltest.testmanager.TestFileResult` object

Test file results to get test suite results from, specified as a `sltest.testmanager.TestFileResult` object.

Output Arguments

testSuiteResultArray — Test suite results

`sltest.testmanager.TestSuiteResult` object array

Test suite results, returned as an array of `sltest.testmanager.TestSuiteResult` objects. The function returns objects that are direct children of the test file results input object.

Examples

Get Test Suite Result Data

Use the function `sltest.testmanager.run` to return a result set that contains test file, test suite, and test case results.

```
% Run tests in the Test Manager
result = sltest.testmanager.run;

% Get the test file results
testFileResultArray = getTestFileResults(result);

% Get the test suite results
testSuiteResultArray = getTestSuiteResults(testFileResultArray);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getTestSuiteResults

Class: sltest.testmanager.TestSuiteResult

Package: sltest.testmanager

Get test suite results object

Syntax

```
testSuiteResultArray = getTestSuiteResults(result)
```

Description

`testSuiteResultArray = getTestSuiteResults(result)` gets the test suite results that are direct children of the test suite results object.

Input Arguments

resultObj — Test suite results

sltest.testmanager.TestSuiteResult object

Test suite results to get test suite results from, specified as a sltest.testmanager.TestSuiteResult object.

Output Arguments

testSuiteResultArray — Test suite results

sltest.testmanager.TestSuiteResult object array

Test suite results, returned as an array of sltest.testmanager.TestSuiteResult objects. The function returns objects that are direct children of the test suite results input object.

Examples

Get Test Suite Result Data

Use the function `sltest.testmanager.run` to return a result set that contains test file, test suite, and test case results.

```
% Run tests in the Test Manager
result = sltest.testmanager.run;

% Get the test file results
testFileResultArray = getTestFileResults(result);

% Get the test suite results
testSuiteResultArray = getTestSuiteResults(testFileResultArray);

% Get the next level of test suite results
testSuite2ResultArray = getTestSuiteResults(testSuiteResultArray);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015a

getVerifyRuns

Class: sltest.testmanager.TestCaseResult

Package: sltest.testmanager

Get test case verify statement

Syntax

```
dataset = getVerifyRuns(result)
```

Description

`dataset = getVerifyRuns(result)` gets the verify statement dataset from a test case result. Verify statements are constructed in the Test Sequence or Test Assessment blocks in the system under test.

Input Arguments

result — Test case result

sltest.testmanager.TestCaseResult object

Test case results to get verify statement dataset from, specified as a sltest.testmanager.TestCaseResult object.

Output Arguments

dataset — Verify statement dataset

Simulink.sdi.Run object array

Test case verify statement dataset, returned as an array of Simulink.sdi.Run objects.

Examples

Get Verify Output From Test Case

```

% File paths and model names
filePath = fullfile(matlabroot,'toolbox','simulinktest','simulinktestdemos');
topModel = 'TestAndVerificationAutopilotExample';
reqDoc = 'RollAutopilotRequirements.txt';
rollModel = 'RollAutopilotMdlRef';
testHarness = 'RollReference_Requirement1_3';
testFile = 'AutopilotTestFile.mldatx';
harnessLink = ['http://localhost:31415/matlab/feval/rmiobjnavigate?arguments=...'
               ' [%22RollAutopilotMdlRef:urn:uuid:523e5d2d-bb86-43b2-a187-43c52a2bc174.' ...
               'slx%22,%22GIDa_3fe26a28_ee1e_4aff_b1cd_3303ca12539c%22] '];

% Open the main model
open_system(fullfile(filePath,rollModel));

% Open the test file in the test manager
open(fullfile(filePath,testFile));

% Open the test harness
web(harnessLink)

% Open harness and highlight requirements links
sltest.harness.open([rollModel '/Roll Reference'],testHarness)
rmi('highlightModel','RollReference_Requirement1_3')

% Open test sequence and test assessment blocks
open_system('RollReference_Requirement1_3/Test Sequence')
open_system('RollReference_Requirement1_3/Test Assessment')

% Run the test file
ro = sltest.testmanager.run;

% Gett the test results
tfr = getTestFileResults(ro);
tsr = getTestSuiteResults(tfr);
tcr = getTestCaseResults(tsr);

% Get the verify output
verifyOut = getVerifyRuns(tcr);

```

- “Automate Tests Programmatically”

See Also

See Also

Simulink.sdi.Run

Topics

“Automate Tests Programmatically”

Introduced in R2016a

getVerifyRuns

Class: sltest.testmanager.TestIterationResult

Package: sltest.testmanager

Get test iteration verify statement

Syntax

```
dataset = getVerifyRuns(result)
```

Description

`dataset = getVerifyRuns(result)` gets the verify statement dataset from a test iteration result. Verify statements are made in the Test Sequence or Test Assessment blocks in the system under test.

Input Arguments

result — Test iteration result

`sltest.testmanager.TestIterationResult` object

Test iteration results to get verify statement dataset from, specified as a `sltest.testmanager.TestIterationResult` object.

Output Arguments

dataset — Verify statement dataset

`Simulink.sdi.Run` object

Test iteration verify statement dataset, returned as a `Simulink.sdi.Run` object.

See Also

See Also

Simulink.sdi.Run

Topics

“Automate Tests Programmatically”

Introduced in R2016a

layoutReport

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

Incorporates parts of report into one document

Syntax

layoutReport(obj)

Description

layoutReport(obj) incorporates the report parts into one document. The report is divided into three main parts: title page, table of contents, and the main body.

This method also calls:

- sltest.testmanager.TestResultReport.addTitlePage
- sltest.testmanager.TestResultReport.addReportTOC
- sltest.testmanager.TestResultReport.addReportBody

Input Arguments

obj — Test report object

sltest.testmanager.TestResultReport object

Test report, specified as a sltest.testmanager.TestResultReport object.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport`

Topics

“Export Test Results and Generate Reports”

“Automate Tests Programmatically”

Introduced in R2016a

map

Class: sltest.testmanager.TestInput

Package: sltest.testmanager

Maps test input to System Under Test

Syntax

```
map(input,mode,customFunction)
```

Description

`map(input,mode,customFunction)` maps the test input data to the System Under Test.

Input Arguments

input — Test input

`sltest.testmanager.TestInput` object

The test input that you want to map, specified as a `sltest.testmanager.TestInput` object.

mode — Mapping mode

0 | 1 | 2 | 3 | 4

Mapping mode, specified as an integer.

- 0 — Block name
- 1 — Block path
- 2 — Signal name
- 3 — Port order (index)
- 4 — Custom

For more information on mapping modes, see “Map Root Inport Signal Data” (Simulink).

customFunction — Custom mapping function name

character vector

Name of function used for custom mapping, specified as a character vector. This argument is optional and valid only when **mode** is set to 4, custom.

Examples

Add Microsoft Excel Data as Input

You can add data from a Microsoft Excel spreadsheet. The spreadsheet used in this example is located in the example folder directory.

```
% Load example model
open_system('sltestExcelExample');

% Create new test file
tf = sltest.testmanager.TestFile('C:\MATLAB\input_test_file.mldatx');
% Get test suite object
ts = getTestSuites(tf);
% Get test case object
tc = getTestCases(ts);

% Add the example model as the system under test
setProperty(tc,'Model','sltestExcelExample');

% Add Excel data to Inputs section
input_path = fullfile(matlabroot,'toolbox','simulinktest',...
    'simulinktestdemos','sltestExampleInputs.xlsx');
input = addInput(tc,input_path,1);

% Map the input signals by port order
map(input,3);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

plotOneSignalToFile

Class: sltest.testmanager.TestResultReport

Package: sltest.testmanager

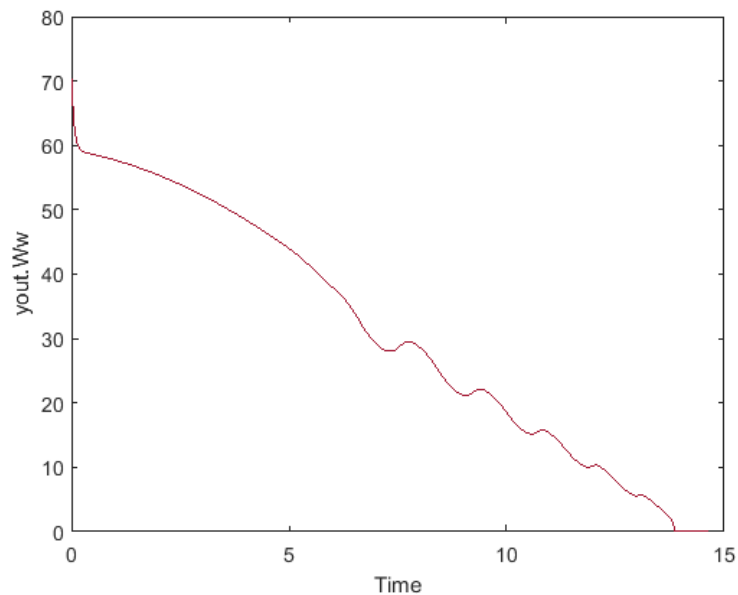
Save signal plot to file

Syntax

```
plotOneSignalToFile(obj,filePath,onesig,isComparison)
```

Description

`plotOneSignalToFile(obj,filePath,onesig,isComparison)` saves a signal plot to a PNG image file. If the signal plot is a comparison, then the baseline signal, the difference, and the tolerance are plotted in the same plot.



Input Arguments

obj — Test report object

`sltest.testmanager.TestResultReport` object

Test report, specified as a `sltest.testmanager.TestResultReport` object.

filePath — Image file path

character vector

File path and name of the image you want to save, specified as a character vector.

onesig — Result signal

`sltest.testmanager.ReportUtility.Signal` object

The result signal, specified as a `sltest.testmanager.ReportUtility.Signal` object.

isComparison — Comparison indicator

`true` | `false`

Flag to indicate whether the signal is from a comparison run or not, specified as a Boolean, `true` or `false`.

Examples

- “Export Test Results and Generate Reports”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestResultReport`

Topics

“Export Test Results and Generate Reports”
“Automate Tests Programmatically”

Introduced in R2016a

remove

Class: sltest.testmanager.BaselineCriteria

Package: sltest.testmanager

Remove baseline criteria

Syntax

```
remove(bc)
```

Description

`remove(bc)` removes the baseline criteria from a test case. The baseline criteria object is empty after a call to this function.

Input Arguments

bc — Baseline criteria

sltest.testmanager.BaselineCriteria object

Baseline criteria that you want to remove from a test case, specified as a sltest.testmanager.BaselineCriteria object.

Examples

Remove Baseline Criteria

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);
```

```
% Assign the system under test to the test case
setProperty(tc,'Model','sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc,'baseline_API.mat',true);

% Remove baseline criteria;
remove(baseline);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

remove

Class: sltest.testmanager.EquivalenceCriteria

Package: sltest.testmanager

Remove equivalence criteria

Syntax

```
remove(eq)
```

Description

`remove(eq)` removes the equivalence criteria from a test case. The equivalence criteria object is empty after a call to this function.

Input Arguments

eq — Equivalence criteria

`sltest.testmanager.EquivalenceCriteria` object

Equivalence criteria that you want to remove from a test case, specified as a `sltest.testmanager.EquivalenceCriteria` object.

Examples

Remove Equivalence Criteria

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'equivalence', 'Equivalence Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);
```

```
% Assign the system under test to the test case
% for Simulation 1 and Simulation 2
setProperty(tc,'Model','sldemo_absbrake','SimulationIndex',1);
setProperty(tc,'Model','sldemo_absbrake','SimulationIndex',2);

% Add a parameter override to Simulation 1 and 2
ps1 = addParameterSet(tc,'Name','Parameter Set 1','SimulationIndex',1);
po1 = addParameterOverride(ps1,'Rr',1.20);

ps2 = addParameterSet(tc,'Name','Parameter Set 2','SimulationIndex',2);
po2 = addParameterOverride(ps2,'Rr',1.24);

% Capture equivalence criteria
eq = captureEquivalenceCriteria(tc);

% Set the equivalence criteria tolerance for one signal
sc = getSignalCriteria(eq);
sc(1).AbsTol = 2.2;

% Remove second signal criteria from baseline
remove(eq);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

remove

Class: sltest.testmanager.ParameterOverride

Package: sltest.testmanager

Remove parameter override

Syntax

```
remove(po)
```

Description

remove(po) removes the parameter override from the parameter set. The parameter override object is empty after a call to this function.

Input Arguments

po — Parameter override

sltest.testmanager.ParameterOverride object

Parameter override that you want to remove from a parameter set, specified as a sltest.testmanager.ParameterOverride object.

Examples

Remove Parameter Override from Parameter Set

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);
```

```
% Assign the system under test to the test case
setProperty(tc,'Model','sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc,'baseline_API.mat',true);

% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc,'Name','API Parameter Set');
po = addParameterOverride(ps,'m',55);

% Remove parameter override from parameter set
remove(po);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

remove

Class: sltest.testmanager.ParameterSet

Package: sltest.testmanager

Remove parameter set

Syntax

```
remove(ps)
```

Description

`remove(ps)` removes the parameter set from a test case. The parameter set object is empty after a call to this function.

Input Arguments

ps — Parameter set

sltest.testmanager.ParameterSet object

Parameter set that you want to remove from a test case, specified as a sltest.testmanager.ParameterSet object.

Examples

Remove Parameter Set from Test Case

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);
```

```
% Assign the system under test to the test case
setProperty(tc,'Model','sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc,'baseline_API.mat',true);

% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc,'Name','API Parameter Set');
po = addParameterOverride(ps,'m',55);

% Remove parameter set from test case
remove(ps);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

remove

Class: sltest.testmanager.SignalCriteria

Package: sltest.testmanager

Remove signal criteria

Syntax

```
remove(sc)
```

Description

`remove(sc)` removes signal criteria from the baseline or equivalence criteria set. The signal criteria object is empty after a call to this function.

Input Arguments

sc — Signal criteria

`sltest.testmanager.SignalCriteria` object

Signal criteria that you want to remove from a baseline or equivalence criteria set, specified as a `sltest.testmanager.SignalCriteria` object.

Examples

Remove Signal from Baseline Criteria Set

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);
```

```
% Assign the system under test to the test case
setProperty(tc,'Model','sldemo_absbrake');

% Capture the baseline criteria
baseline = captureBaselineCriteria(tc,'baseline_API.mat',true);

% Test a new model parameter by overriding it in the test case
% parameter set
ps = addParameterSet(tc,'Name','API Parameter Set');
po = addParameterOverride(ps,'m',55);

% Set the baseline criteria tolerance for one signal
sc = getSignalCriteria(baseline);
sc(1).AbsTol = 9;

% Remove second signal criteria from baseline
remove(sc(2));
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

remove

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Remove test case

Syntax

```
remove(tc)
```

Description

`remove(tc)` removes the test case. The test case object is empty after a call to this function. All parameter overrides, baseline criteria, or equivalence criteria associated with the test case become invalid.

Input Arguments

tc — Test case

sltest.testmanager.TestCase object

Test case to remove, specified as an sltest.testmanager.TestCase object.

Examples

Remove Test Case

```
% Create test file
tf = sltest.testmanager.TestFile('C:\MATLAB\test_file.mldatx');

% Create test suite
ts = sltest.testmanager.TestSuite(tf,'My Test Suite');

% Create test case
tc = sltest.testmanager.TestCase(ts,'equivalence',...
```

```
'Eq Test Case');
```

```
% Remove the test case  
remove(tc);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

remove

Class: sltest.testmanager.TestInput

Package: sltest.testmanager

Remove test input

Syntax

```
remove
```

Description

remove removes the test input from a test case. The test input object is empty after a call to this function.

Input Arguments

input — Test input

sltest.testmanager.TestInput object

The test input that you want to remove, specified as a sltest.testmanager.TestInput object.

Examples

Remove Test Input Data

```
% Load example model
open_system('sltestExcelExample');

% Create new test file
tf = sltest.testmanager.TestFile('C:\MATLAB\input_test_file.mldatx');
% Get test suite object
ts = getTestSuites(tf);
% Get test case object
```

```
tc = getTestCases(ts);

% Add the example model as the system under test
setProperty(tc,'Model','sltestExcelExample');

% Add Excel data to Inputs section
input_path = fullfile(matlabroot,'toolbox','simulinktest',...
    'simulinktestdemos','sltestExampleInputs.xlsx');
input = addInput(tc,input_path,1);

% Map the input signals by port order
map(input,3);

% Remove test input
remove(input);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

remove

Class: sltest.testmanager.TestSuite

Package: sltest.testmanager

Remove test suite

Syntax

```
remove(ts)
```

Description

`remove(ts)` removes the test suite. The test suite object is empty after a call to this function.

Input Arguments

ts — Test suite

sltest.testmanager.TestSuite object

Test suite that you want to remove, specified as an sltest.testmanager.TestSuite object.

Examples

Remove Test Suite

```
% Create test file
tf = sltest.testmanager.TestFile('C:\MATLAB\test_file.mldatx');

% Create test suite
ts = sltest.testmanager.TestSuite(tf, 'My Test Suite');

% Remove the test suite
remove(ts);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

run

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Run test case

Syntax

```
resultObj = run(tc)
```

Description

`resultObj = run(tc)` runs the test case and returns a results set object.

Input Arguments

tc — Test case

sltest.testmanager.TestCase object

Test case you want to run, specified as an sltest.testmanager.TestCase object.

Output Arguments

resultObj — Results set object

object

Test results, returned as a results set object, sltest.testmanager.ResultSet.

Examples

Run a Test Case

```
% Create the test file, test suite, and test case structure
```

```
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'simulation', 'Coverage Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');

% Run the test case and return an object with results data
ro = run(tc);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

run

Class: `sltest.testmanager.TestFile`

Package: `sltest.testmanager`

Run test cases in test file

Syntax

```
resultObj = run(tf)
```

Description

`resultObj = run(tf)` runs the enabled test cases in the test file and returns a results set object.

Input Arguments

tf — Test file

`sltest.testmanager.TestFile` object

Test file with the test cases you want to run, specified as an `sltest.testmanager.TestFile` object.

Output Arguments

resultObj — Results set object

`sltest.testmanager.ResultSet` object

Test results, returned as a results set object, `sltest.testmanager.ResultSet`.

Examples

Run a Test File

```
% Create the test file, test suite, and test case structure
```

```
tf = sltest.testmanager.TestFile('My Test File');
ts = createTestSuite(tf, 'My Test Suite');
tc = createTestCase(ts, 'simulation', 'Simulation Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');

% Run the test file and return an object with results data
ro = run(tf);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

run

Class: `sltest.testmanager.TestSuite`

Package: `sltest.testmanager`

Run test cases in test suite

Syntax

```
resultObj = run(ts)
```

Description

`resultObj = run(ts)` runs the enabled test cases in the test suite and returns a results set object.

Input Arguments

ts — Test suite

`sltest.testmanager.TestSuite` object

Test suite with the test cases you want to run, specified as an `sltest.testmanager.TestSuite` object.

Output Arguments

resultObj — Result set

`sltest.testmanager.ResultSet` object

Test results, returned as a `sltest.testmanager.ResultSet` results set object.

Examples

Run a Test Suite

```
% Create the test file, test suite, and test case structure
```

```
tf = sltest.testmanager.TestFile('My Test File');
ts = createTestSuite(tf, 'My Test Suite');
tc = createTestCase(ts, 'simulation', 'Simulation Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');

% Run the test suite and return an object with results data
ro = run(ts);
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

saveToFile

Class: sltest.testmanager.TestFile

Package: sltest.testmanager

Save test file

Syntax

```
saveToFile(tf)
saveToFile(tf,filePath)
```

Description

saveToFile(tf) saves the changes to the test file.

saveToFile(tf,filePath) saves the test file to the specified file path.

Input Arguments

tf — Test file

sltest.testmanager.TestFile object

Test file, specified as a sltest.testmanager.TestFile object.

filePath — File path

character vector

The file path and name to save the test file at, specified as a character vector.

Example: 'C:\MATLAB\New Test File.mldatx'

Examples

Save Test File With Changes

```
% Create the test file, test suite, and test case structure
```

```
tf = sltest.testmanager.TestFile('C:\MATLAB\My Test File.mldatx');
ts = createTestSuite(tf, 'My Test Suite');
tc = createTestCase(ts, 'simulation', 'Simulation Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_autotrans');

% Save the test file
saveToFile(tf);

% Save test file object as another test file
saveToFile(tf, 'C:\MATLAB\New Test File.mldatx');
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

setModelParam

Class: sltest.testmanager.TestIteration

Package: sltest.testmanager

Set model parameter for iteration

Syntax

```
setModelParam(obj,modelObject,paramName,value)
```

Description

setModelParam(obj,modelObject,paramName,value) sets a model parameter for the test iteration object.

Input Arguments

obj — Test iteration object

object

Test iteration that you want to set the model parameter, specified as a sltest.testmanager.TestIteration object.

modelObject — Name or handle of a model or block

character vector | handle

Handle or name of a model or block, specified as a numeric handle or a character vector. A numeric handle must be a scalar. You can also set parameters of lines and ports, but you must use numeric handles to specify them.

Example: 'vdp/Fcn'

paramName — Model or block parameter name

character vector

Model or block parameter name, specified as the comma-separated pair consisting of the parameter name, specified as a character vector, and the value, specified in the

format determined by the parameter type. Case is ignored for parameter names. Value character vectors are case sensitive. Values are often character vectors, but they can also be numeric, arrays, and other types. Many block parameter values are specified as character vectors, but two exceptions are these parameters: `Position`, specified as a value vector, and `UserData`, which can be any data type.

For more information on parameter name and value pairs, see the function reference page for `set_param`.

Example: `'Solver', 'ode15s'`

Data Types: `char`

Examples

Override Gain Value

```
setModelParam(obj,[sltest_bdroot '/Mu'], 'Gain', '1000')
```

- “Run Multiple Combinations of Tests Using Iterations”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestIteration` | `set_param`

Topics

“Run Multiple Combinations of Tests Using Iterations”
“Automate Tests Programmatically”

Introduced in R2016a

setProperty

Class: sltest.testmanager.TestCase

Package: sltest.testmanager

Set test case property

Syntax

```
setProperty(tc,Name,Value)
```

Description

setProperty(tc,Name,Value) sets a test case property.

Input Arguments

tc — Test case

sltest.testmanager.TestCase object

Test case to set property, specified as an sltest.testmanager.TestCase object.

Name-Value Pair Arguments

Specify optional comma-separated pairs of **Name**, **Value** arguments. **Name** is the argument name and **Value** is the corresponding value. **Name** must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as **Name1**, **Value1**, . . . , **NameN**, **ValueN**.

Example: 'StopTime',100

'Model' — System Under Test model name

empty character vector (default)

The model name in the System Under Test section, specified as a character vector.

Example: 'sldemo_absbrake'

'SimulationMode' — Simulation mode

empty character vector (default) | 'Normal' | 'Accelerator' | 'Rapid Accelerator' | 'Software-in-the-Loop (SIL)' | 'Processor-in-the-Loop (PIL)'

The simulation mode of the model or harness, specified as a character vector. To return to the default model settings, specify an empty character vector, ''.

Example: 'SimulationMode', 'Rapid Accelerator'

'OverrideStartTime' — Override model start time

false (default) | true

Indicate if the test case overrides the model start time, specified as a Boolean, true or false.

'StartTime' — Model start time

0 (default) | scalar

Model start time, specified as a scalar value.

Data Types: single | double | int8 | int16 | int32 | int64 | uint8 | uint16 | uint32 | uint64

'OverrideStopTime' — Override model stop time

false (default) | true

Indicate if the test case overrides the model stop time, specified as a Boolean, true or false.

'StopTime' — Model stop time

10 (default) | scalar

Model stop time, specified as a scalar value.

Data Types: single | double | int8 | int16 | int32 | int64 | uint8 | uint16 | uint32 | uint64

'OverrideInitialState' — Override model initial state

false (default) | true

Indicate if the test case overrides the model initial state, specified as a Boolean, `true` or `false`.

'InitialState' — Model initial state

empty character vector (default)

Model initial state from a workspace variable, specified as a character vector.

'HarnessName' — Test harness name

empty character vector (default)

Name of a test harness to use in the System Under Test section, specified as a character vector.

'HarnessOwner' — Test harness owner name

empty character vector (default)

Name of the test harness owner, specified as a character vector.

'UseSignalBuilderGroup' — Override Signal Builder group

`false` (default) | `true`

Indicate if the test case overrides the model and uses a different Signal Builder group in the Inputs section, specified as a Boolean, `true` or `false`.

'SignalBuilderGroup' — Signal Builder group name

empty character vector (default)

Signal Builder group name, specified as a character vector. To return to the default model settings, specify an empty character vector, `''`.

'OverrideModelOutputSettings' — Override model output settings

`false` (default) | `true`

Indicate if the test case overrides the model settings under the Outputs section, specified as a Boolean, `true` or `false`.

'SaveOutput' — Override saving output

`false` (default) | `true`

Indicate if the test case overrides saving model output, specified as a Boolean, `true` or `false`.

'SaveState' — Save output state values

false (default) | true

Indicate if the test case is set to save output state values, specified as a Boolean, true or false.

'SignalLogging' — Log signals

true (default) | false

Indicate if the test case is set to log signals marked for logging in the model, specified as a Boolean, true or false.

'DSMLogging' — Log Data Store variables

true (default) | false

Indicate if the test case is set to log Data Store variables, specified as a Boolean, true or false.

'SaveFinalState' — Save final state

false (default) | true

Indicate if the test case is set to store final state values, specified as a Boolean, true or false.

'SimulationIndex' — Equivalence test case simulation

1 (default) | 2

Simulation number that the property applies to, specified as an integer, 1 or 2. This setting applies to the simulation test case.

'ConfigSetOverrideSetting' — Configuration setting override

1 (default) | 2 | 3

Override the configuration settings, specified as an integer.

- 1 — No override
- 2 — Use a named configuration set in the model
- 3 — Use a configuration set specified in a file

'ConfigSetName' — Configuration set name

empty character vector (default)

Name of the configuration setting in a model, specified as a character vector.

'ConfigSetVarName' — Configuration set variable name

empty character vector (default)

Variable name in a configuration set file, specified as a character vector.

'ConfigSetFileLocation' — Configuration set file path

empty character vector (default)

File name and path of the configuration set, specified as a character vector.

'PreloadCallback' — Pre-load callback script

character vector

Pre-load callback script, specified as a character vector.

'PostloadCallback' — Post-load callback script

character vector

Post-load callback script, specified as a character vector.

'CleanupCallback' — Cleanup callback script

character vector

Test-case level cleanup callback script, specified as a character vector. The function deletes any existing callback script and replaces it with the specified character vector.

Example: 'clear a % clear value from workspace'

'PreStartRealTimeApplicationCallback' — Real-time pre-start callback

character vector

Character vector evaluated before the real-time application is started on the target computer, specified as a character vector. For more information on real-time testing, see “Test Models in Real Time”.

'IterationScript' — Iteration script

character vector

Iteration script evaluated to create test case iterations, specified as a character vector. For more information about test iteration scripts, see “Run Multiple Combinations of Tests Using Iterations”.

'FastRestart' — Run iterations using fast restart

false (default) | true

Indicate if the test iterations run using fast restart mode, specified as a Boolean, true or false.

'SaveBaselineRunInTestResult' — Save baseline in test result

false (default) | true

Indicate if the test case saves the baseline used in the test result after test execution, specified as a Boolean, true or false.

'SaveInputRunInTestResult' — Save input in test result

false (default) | true

Enable saving external input run used in test result, specified as a Boolean, true or false.

'LoadAppFrom' — Application location

1 (default) | 2 | 3

Location from which to load the application, specified as an integer. This property is available only in real-time test cases.

- 1 — Model
- 2 — Target application
- 3 — Target computer

For more information on real-time testing, see “Test Models in Real Time”.

'TargetComputer' — Target computer name

character vector

Name of the target computer, specified as a character vector. This property is available only in real-time test cases. For more information on real-time testing, see “Test Models in Real Time”.

'TargetApplication' — Target application name and path

character vector

Name and path of the target application, specified as a character vector. This property is available only in real-time test cases. For more information on real-time testing, see “Test Models in Real Time”.

Examples

Set Model as System Under Test

```
% Create the test file, test suite, and test case structure
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');
tc = createTestCase(ts, 'baseline', 'Baseline API Test Case');

% Remove the default test suite
tsDel = getTestSuiteByName(tf, 'New Test Suite 1');
remove(tsDel);

% Assign the system under test to the test case
setProperty(tc, 'Model', 'sldemo_absbrake');
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

setProperty

Class: sltest.testmanager.TestFile

Package: sltest.testmanager

Set test file property

Syntax

```
setProperty(tf,Name,Value)
```

Description

setProperty(tf,Name,Value) sets a test file property.

Input Arguments

tf — Test file

sltest.testmanager.TestFile object

Test file object whose property to set, specified as an sltest.testmanager.TestFile object.

Name-Value Pair Arguments

Specify optional comma-separated pairs of Name, Value arguments. Name is the argument name and Value is the corresponding value. Name must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as Name1,Value1,...,NameN,ValueN.

Example: 'SetupCallback','a = 300; % set nominal value'

'SetupCallback' — Setup callback script

empty (default) | character vector

Test-file level setup callback script, specified as a character vector. The function replaces any existing callback script with this value.

Example: 'a = 300; % set nominal value'

'CleanupCallback' — Cleanup callback script

empty (default) | character vector

Test-file level cleanup callback script, specified as a character vector. The function replaces any existing callback script with this value.

Example: 'clear a % clear value from workspace'

Examples

Set Test File Property

```
% Create a test file
tf = sltest.testmanager.TestFile('API Test File');

% Set the setup callback property
setProperty(tf, 'CleanupCallback', 'clearvars % Clear variables');
```

- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestFile.getProperty

Topics

“Automate Tests Programmatically”

Introduced in R2015b

setProperty

Class: sltest.testmanager.TestSuite

Package: sltest.testmanager

Set test suite property

Syntax

```
setProperty(ts, Name, Value)
```

Description

setProperty(ts, Name, Value) sets a test suite property.

Input Arguments

ts — Test suite

sltest.testmanager.TestSuite object

Test suite object to set the property, specified as an sltest.testmanager.TestSuite object.

Name-Value Pair Arguments

Specify optional comma-separated pairs of Name, Value arguments. Name is the argument name and Value is the corresponding value. Name must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as Name1, Value1, ..., NameN, ValueN.

Example: 'SetupCallback', 'a = 300; % set nominal value'

'SetupCallback' — Setup callback script

empty (default) | character vector

Test-suite level setup callback script, specified as a character vector. The function deletes any existing callback script and replaces it with the specified character vector.

Example: 'a = 300; % set nominal value'

'CleanupCallback' — Cleanup callback script

empty (default) | character vector

Test-suite level cleanup callback script, specified as a character vector. The function deletes any existing callback script and replaces it with the specified character vector.

Example: 'clear a % clear value from workspace'

Examples

Set Test Suite Property

```
% Create a test file and new test suite
tf = sltest.testmanager.TestFile('API Test File');
ts = createTestSuite(tf, 'API Test Suite');

% Set the setup callback property
setProperty(ts, 'CleanupCallback', 'clearvars % Clear variables');
```

- “Automate Tests Programmatically”

See Also

Topics

“Automate Tests Programmatically”

Introduced in R2015b

setTestParam

Class: sltest.testmanager.TestIteration

Package: sltest.testmanager

Set test case parameter

Syntax

```
setTestParam(obj, Name, Value)
```

Description

`setTestParam(obj, Name, Value)` sets the test iteration parameter with additional options specified by one or more `Name, Value` pair arguments.

Input Arguments

obj — Test iteration object

object

Test iteration object that you want to apply the test parameter to, specified as a `sltest.testmanager.TestIteration` object.

Name-Value Pair Arguments

Specify optional comma-separated pairs of `Name, Value` arguments. `Name` is the argument name and `Value` is the corresponding value. `Name` must appear inside single quotes (' '). You can specify several name and value pair arguments in any order as `Name1, Value1, ..., NameN, ValueN`.

'ParameterSet' — Parameter set

Current test case setting (default) | character vector

Parameter set name, specified as the comma-separated pair consisting of `'ParameterSet'` and a character vector. Parameter set overrides are setup in the **Parameter Overrides** section of the test case.

Example: 'ParameterSet', 'Param Set 1'

'Baseline' — Baseline criteria dataset

Current test case setting (default) | character vector

Baseline criteria dataset name, specified as the comma-separated pair consisting of 'Baseline' and a character vector. Baseline criteria datasets are setup in the **Baseline Criteria** section of the test case. It is available only for baseline test cases.

Example: 'Baseline', 'BaselineSet_High'

'ExternalInput' — External input

Current test case setting (default) | character vector

External input name, specified as the comma-separated pair consisting of 'ExternalInput' and a character vector. External input overrides are setup in the **Inputs** section of the test case.

Example: 'ExternalInput', 'Run1'

'ConfigSet' — Configuration setting

Current test case setting (default) | character vector

Configuration setting name, specified as the comma-separated pair consisting of 'ConfigSet' and a character vector. Configuration setting overrides are setup in the **Configuration Settings Overrides** section of the test case.

Example: 'ConfigSet', 'Solver 3'

'SignalBuilderGroup' — Signal Builder group

Current test case setting (default) | character vector

Signal Builder group input name, specified as the comma-separated pair consisting of 'SignalBuilderGroup' and a character vector. Signal Builder group overrides are setup in the **Inputs** section of the test case.

Example: 'SignalBuilderGroup', 'Acceleration'

'PreLoadFcn' — Pre-load callback script

Current test case setting (default) | character vector

Pre-load callback script, specified as the comma-separated pair consisting of 'PreLoadFcn' and a character vector. The pre-load callback script is setup in the **Callbacks** section of the test case.

'PostLoadFcn' — Post-load callback script

Current test case setting (default) | character vector

Post-load callback script, specified as the comma-separated pair consisting of 'PostLoadFcn' and a character vector. The post-load callback script is setup in the **Callbacks** section of the test case.

'PreStartRealTimeApplicationFcn' — Pre-start real-time application callback script

Current test case setting (default) | character vector

Pre-start real-time application callback script, specified as the comma-separated pair consisting of 'PreStartRealTimeApplicationFcn' and a character vector. The pre-start real-time application callback script is setup in the **Callbacks** section of the test case.

'CleanupFcn' — Cleanup callback script

Current test case setting (default) | character vector

Cleanup callback script, specified as the comma-separated pair consisting of 'CleanupFcn' and a character vector. The cleanup callback script is setup in the **Callbacks** section of the test case.

'Description' — Description

Current test case setting (default) | character vector

Test description text, specified as the comma-separated pair consisting of 'Description' and a character vector. The Description is setup in the **Description** section of the test case.

Example: 'Description', 'Test the autopilot controller for wind gusts'

Examples

Set Test Parameter

```
setTestParam(obj, 'Description', 'Test the autopilot controller for wind gusts');
```

- “Run Multiple Combinations of Tests Using Iterations”
- “Automate Tests Programmatically”

See Also

See Also

`sltest.testmanager.TestIteration`

Topics

“Run Multiple Combinations of Tests Using Iterations”

“Automate Tests Programmatically”

Introduced in R2016a

setVariable

Class: sltest.testmanager.TestIteration

Package: sltest.testmanager

Set model variable override

Syntax

```
setVariable(obj, 'Name', varName, 'Source', srcName, 'Value', value)
```

Description

`setVariable(obj, 'Name', varName, 'Source', srcName, 'Value', value)` sets a model variable override for the test iteration. Specify the `sltest.testmanager.TestIteration` object, and then specify the variable name, source, and override value. The method overrides the variable in the test iteration and does not permanently change the model variable.

Input Arguments

obj — Test iteration object

object

The test iteration you want to apply the override to, specified as a `sltest.testmanager.TestIteration` object.

varName — Variable name

character vector

Name of the variable you want to override, specified as a character vector.

srcName — Variable source

'base workspace' | 'model workspace' | 'mask workspace' | data dictionary name | model element paths

The source of the variable to override, specified as a character vector. For non-real-time test cases, the possible sources can be 'base workspace', 'model workspace', 'mask workspace', or the name of a data dictionary, such as 'data.slidd'.

For real-time test cases, the possible sources are model element paths, which might be an empty character vector.

value — Override value

scalar

Value of the variable you want to override, specified as a scalar value.

Data Types: single | double | int8 | int16 | int32 | int64 | uint8 | uint16 | uint32 | uint64

Examples

Set Variable in Base Workspace

```
setVariable(obj, 'Name', 'g', 'Source', 'base workspace', 'Value', 33);
```

- “Run Multiple Combinations of Tests Using Iterations”
- “Automate Tests Programmatically”

See Also

See Also

sltest.testmanager.TestIteration

Topics

“Run Multiple Combinations of Tests Using Iterations”
“Automate Tests Programmatically”

Introduced in R2016a

Blocks — Alphabetical List

Test Assessment

Specify test assessments, steps, and actions in tabular format



Description

Use this block to define test assessments in a tabular series of steps. Like the Test Sequence block, the Test Assessment block uses MATLAB as the action language.

Test Sequence Editor

Default Configuration

Double-click the Test Assessment block to open the Test Sequence Editor, displaying the default test step layout. The top-level step of a Test Assessment block uses When decomposition transition by default. To change the transition type to a standard transition, right-click the top-level step and clear **When decomposition**.

Step	Transition	Next Step	Description
<div style="border: 1px solid #ccc; padding: 5px;"> <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> ☐ ↖ </div> <div> step_1 </div> </div> <div style="margin-left: 20px; margin-top: 10px;"> <div style="border: 1px dashed #ccc; padding: 2px;"> step_1_1 when t < 5 </div> <div style="font-size: small; margin-top: 5px;"> Add step after • Add sub-step </div> </div> <div style="margin-left: 20px; margin-top: 10px;"> step_1_2 </div> </div>			

Adding, Deleting, and Editing Test Steps

To add a test step, right-click a step in the editor and select **Add step before** or **Add step after**. Select **Add sub-step** to create test steps in a lower hierarchy level. Select **Delete step** to delete the selected step.

To cut or copy a test step, select the step and type **Ctrl+X** or **Ctrl+C**. To paste the test step, select another test step, type **Ctrl+V**, and select whether to paste before or after the step.

Actions and Transitions

The step names are the first lines in the **Step** column. To enter new step names, overwrite the default names. You can undo and redo test sequence edits using the undo and redo buttons on the toolbar. The Test Sequence Editor offers common Simulink keyboard shortcuts, such as save, update diagram, and start simulation.

A test step consists of actions and transitions. Use test step actions to define assessments and signals. Use transitions to define conditions at which the test sequence exits the test step and enters another test step. For a When decomposition sequence, **when** statements accompany the test step name and define the active step.

Initialize the output signals in the first test step. Outputs are automatically initialized when you use a Test Sequence block in a test harness that compiles the main model.

Test Sequence Hierarchy and Transitions

You can arrange test sequences in a hierarchy of parent steps and substeps. Substeps can activate only when the parent step is active. For each sequence level, you can define the transition type as a standard transition or a When decomposition.

Standard Transition

In a standard transition, the default step is the first step listed in the sequence. The sequence progresses according to the transition conditions and next steps. To create a sequence using standard transitions:

- Add new steps to the sequence.
- Define outputs and assessments in the **Step** cell. For example, this code sets `on_off` to `false` and verifies that the `FanOn` signal is `true`.

```
on_off = false;
verify(FanOn == true);
```

- For each step that requires a transition, hover over the **Transition** cell and click **Add transition**. Define the step exit conditions in the transition. For example, this code transitions to another step after the current step has been active for 20 seconds.

```
after(20,sec)
```


- Choose the next test step in the **Next Step** cell.

Step	Transition	Next Step
<pre>initialize on_off = false; Tproj = single(0);</pre>	1. true	Normal_on_off ▼
<div style="border-left: 1px solid black; padding-left: 5px;"> <pre>Normal_on_off end_test = 0;</pre> </div>		
<div style="border-left: 1px solid black; padding-left: 5px;"> <pre>On on_off = true;</pre> </div>	1. FanOn == true	Wait ▼
<div style="border-left: 1px solid black; padding-left: 5px;"> <pre>Wait on_off = false; verify(FanOn == true,... 'Simulink:verify_scenario1',... 'Fan should be active');</pre> </div>	1. after(20,sec)	Off ▼
<div style="border-left: 1px solid black; padding-left: 5px;"> <pre>Off on_off = true;</pre> </div>	1. FanOn == false	End ▼
<pre>End on_off = false; end_test = 1;</pre>		

When Decomposition

In a **When decomposition** sequence, steps activate based on a signal condition defined on the same line as the test step name, preceded by the **when** operator. For example, a step named **OverSpeed2** activates when the signal **gear** is 2:

OverSpeed2 when gear == 2


A **When decomposition** requires a parent step. To change to a **When decomposition** sequence, right-click the parent step and select **When decomposition**. The parent step displays the When decomposition icon . Add substeps to define the when conditions.

At each time step, the when statements evaluate from top to bottom, and the first step with a valid statement executes. The final step in a When decomposition cannot include a when condition. The final step handles situations in the simulation which do not match another when condition in the sequence. Conceptually, this is analogous to including an Else condition in an if-then-else construct.

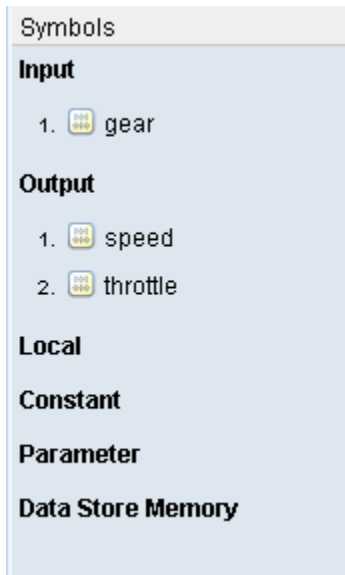
Step	Transition	Next Step
<div style="border: 1px solid #ccc; padding: 5px;"> <div style="display: flex; align-items: center;"> ☰ \ HighLevelAssessment </div> <pre style="margin-top: 5px;"> assert(speed >= 0); assert(throttle >= 0); assert(throttle <= 100); assert(gear > 0); </pre> </div>		
<div style="border-left: 1px solid #ccc; border-right: 1px solid #ccc; padding: 5px;"> <p>OverSpeed3 when gear == 3 verify(speed <= 90, 'SLTest:Gear3_overspeed')</p> </div>		
<div style="border-left: 1px solid #ccc; border-right: 1px solid #ccc; padding: 5px;"> <p>OverSpeed2 when gear == 2 verify(speed <= 50, 'SLTest:Gear2_overspeed')</p> </div>		
<div style="border-left: 1px solid #ccc; border-right: 1px solid #ccc; padding: 5px;"> <p>OverSpeed5 when gear == 3 verify(speed <= 30, 'SLTest:Gear1_overspeed')</p> </div>		
<div style="border-left: 1px solid #ccc; border-right: 1px solid #ccc; padding: 5px;"> <p>Else</p> </div>		

Input, Output, and Data Management

Manage inputs, outputs, and data objects using the **Symbols** sidebar of the Test

Sequence Editor. Click the symbols sidebar button  on the toolbar to show or hide the sidebar. To add a symbol, mouse over the symbol type and click **Add**. To edit or delete a data symbol, mouse over the data symbol and click **Edit** or **Delete**.

If you add a symbol to the test sequence block, you can access that symbol from test steps at any hierarchy level. For information on using messages, see “Test Sequence Action and Transition Operations”.



Symbol Type	Description	Procedure for Adding
Input	Inputs can be data or messages.	Click Add in the sidebar and enter the input name.
Output	Outputs can be data, messages, or function calls.	Click Add in the sidebar and enter the output name.
Local	Local data entries are available inside the test sequence block in which they are defined.	Add a local variable in the sidebar and initialize the local variable in the first test step.
Constant	Constants are read-only data entries available inside the test sequence block in which they are defined.	Add a constant in the sidebar. Click Edit and enter the constant value in the dialog box, in the Initial Value field.

Symbol Type	Description	Procedure for Adding
Parameter	Parameters are data available inside and outside the Test Sequence block.	Using the Model Explorer, add a parameter in the workspace of the model containing the Test Sequence block. Then add the parameter name to the Parameter symbols.
Data Store Memory	Data Store Memory entries are available inside and outside the Test Sequence block.	Using the Model Explorer, add a Simulink.signal entry in the workspace of the model containing the Test Sequence block. Alternatively, add a Data Store Memory block to the model. Then add the data store memory name to the Data Store Memory symbols.

See Also

See Also

“Syntax for Test Sequences and Assessments” | “Debug a Test Sequence”

Topics

“Test Sequence Action and Transition Operations”

“Generate Function-Based Test Signals”

“Assess Simulation Using Logical Statements”

Introduced in R2016a

Test Sequence

Specify test steps, actions, and assessments in tabular format



Description

Use this block to define a test sequence using a tabular series of steps. Like the Test Assessment block, the Test Sequence block uses MATLAB as the action language.

Test Sequence Editor

Default Configuration

Double-click the Test Sequence block to open the Test Sequence Editor, displaying the default test step layout.

Step	Transition	Next Step
step_1	1. <i>true</i>	step_2 ▼
step_2		

You can undo and redo test sequence edits using the undo and redo buttons on the toolbar. The Test Sequence Editor offers many Simulink keyboard shortcuts, such as save, update diagram, and start simulation.

Adding, Deleting, and Editing Test Steps

To add a test step, right-click a step in the editor and select **Add step before** or **Add step after**. Select **Add sub-step** to create test steps in a lower hierarchy level. Select **Delete step** to delete the selected step.

To cut or copy a test step, select the step and type **Ctrl+X** or **Ctrl+C**. To paste the test step, select another test step, type **Ctrl+V**, and select whether to paste before or after the step.

Actions and Transitions

The step names are the first lines in the **Step** column. To enter new step names, overwrite the default names. You can undo and redo test sequence edits using the undo and redo buttons on the toolbar. The Test Sequence Editor offers common Simulink keyboard shortcuts, such as save, update diagram, and start simulation.

A test step consists of actions and transitions. Use test step actions to define assessments and signals. Use transitions to define conditions at which the test sequence exits the test step and enters another test step. For a When decomposition sequence, when statements accompany the test step name and define the active step.

Initialize the output signals in the first test step. Outputs are automatically initialized when you use a Test Sequence block in a test harness that compiles the main model.

Test Sequence Hierarchy and Transitions

You can arrange test sequences in a hierarchy of parent steps and substeps. Substeps can activate only when the parent step is active. For each sequence level, you can define the transition type as a standard transition or a When decomposition.

Standard Transition

In a standard transition, the default step is the first step listed in the sequence. The sequence progresses according to the transition conditions and next steps. To create a sequence using standard transitions:

- Add new steps to the sequence.
- Define outputs and assessments in the **Step** cell. For example, this code sets `on_off` to `false` and verifies that the `FanOn` signal is `true`.

```
on_off = false;  
verify(FanOn == true);
```

- For each step that requires a transition, hover over the **Transition** cell and click **Add transition**. Define the step exit conditions in the transition. For example, this code transitions to another step after the current step has been active for 20 seconds.

after(20, sec)


- Choose the next test step in the **Next Step** cell.

Step	Transition	Next Step
initialize on_off = false; Tproj = single(0);	1. true	Normal_on_off ▼
Normal_on_off end_test = 0;		
On on_off = true;	1. FanOn == true	Wait ▼
Wait on_off = false; verify(FanOn == true,... 'Simulink:verify_scenario1',... 'Fan should be active');	1. after(20,sec)	Off ▼
Off on_off = true;	1. FanOn == false	End ▼
End on_off = false; end_test = 1;		

When Decomposition

In a **When decomposition** sequence, steps activate based on a signal condition defined on the same line as the test step name, preceded by the **when** operator. For example, a step named **OverSpeed2** activates when the signal **gear** is 2:

```
OverSpeed2 when gear == 2
```


A **When decomposition** requires a parent step. To change to a **When decomposition** sequence, right-click the parent step and select **When decomposition**. The parent step displays the When decomposition icon . Add substeps to define the when conditions.

At each time step, the when statements evaluate from top to bottom, and the first step with a valid statement executes. The final step in a When decomposition cannot include a when condition. The final step handles situations in the simulation which do not match another when condition in the sequence. Conceptually, this is analogous to including an Else condition in an if - then - else construct.

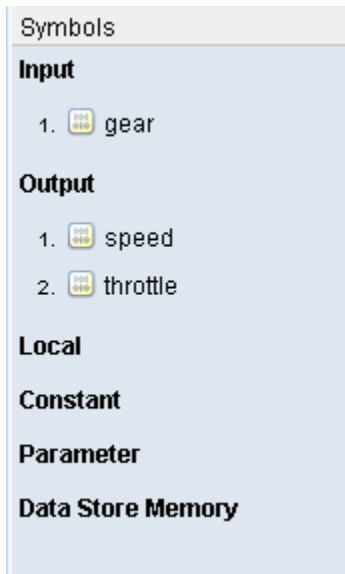
Step	Transition	Next Step
<div style="border: 1px solid #ccc; padding: 5px;"> <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> ▣ ▾ </div> <div> HighLevelAssessment <code>assert(speed >= 0);</code> <code>assert(throttle >= 0);</code> <code>assert(throttle <= 100);</code> <code>assert(gear > 0);</code> </div> </div> </div>		
<div style="border: 1px solid #ccc; padding: 5px;"> <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> ▣ </div> <div> OverSpeed3 when gear == 3 <code>verify(speed <= 90,'SLTest:Gear3_overspeed')</code> </div> </div> </div>		
<div style="border: 1px solid #ccc; padding: 5px;"> <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> ▣ </div> <div> OverSpeed2 when gear == 2 <code>verify(speed <= 50,'SLTest:Gear2_overspeed')</code> </div> </div> </div>		
<div style="border: 1px solid #ccc; padding: 5px;"> <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> ▣ </div> <div> OverSpeed5 when gear == 3 <code>verify(speed <= 30,'SLTest:Gear1_overspeed')</code> </div> </div> </div>		
<div style="border: 1px solid #ccc; padding: 5px;"> <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> ▣ </div> <div> Else </div> </div> </div>		

Input, Output, and Data Management

Manage inputs, outputs, and data objects using the **Symbols** sidebar of the Test

Sequence Editor. Click the symbols sidebar button  on the toolbar to show or hide the sidebar. To add a symbol, mouse over the symbol type and click **Add**. To edit or delete a data symbol, mouse over the data symbol and click **Edit** or **Delete**.

If you add a symbol to the test sequence block, you can access that symbol from test steps at any hierarchy level. For information on using messages, see “Test Sequence Action and Transition Operations”.



Symbol Type	Description	Procedure for Adding
Input	Inputs can be data or messages.	Click Add in the sidebar and enter the input name.
Output	Outputs can be data, messages, or function calls.	Click Add in the sidebar and enter the output name.
Local	Local data entries are available inside the test sequence block in which they are defined.	Add a local variable in the sidebar and initialize the local variable in the first test step.
Constant	Constants are read-only data entries available inside the test sequence block in which they are defined.	Add a constant in the sidebar. Click Edit and enter the constant value in the dialog box, in the Initial Value field.
Parameter	Parameters are data available inside and outside the Test Sequence block.	Using the Model Explorer, add a parameter in the workspace of the model containing the Test Sequence block. Then add the

Symbol Type	Description	Procedure for Adding
		parameter name to the Parameter symbols.
Data Store Memory	Data Store Memory entries are available inside and outside the Test Sequence block.	Using the Model Explorer, add a Simulink.signal entry in the workspace of the model containing the Test Sequence block. Alternatively, add a Data Store Memory block to the model. Then add the data store memory name to the Data Store Memory symbols.

See Also

See Also

“Syntax for Test Sequences and Assessments” | “Debug a Test Sequence”

Topics

“Test Sequence Action and Transition Operations”

“Generate Function-Based Test Signals”

“Assess Simulation Using Logical Statements”

Introduced in R2015a

Message Viewer

Display message or events between blocks during simulation



Library

Stateflow[®], SimEvents[®], Simulink Test

Description

The Message Viewer block displays messages or events between certain blocks during simulation. The blocks that you can display messages and events for are called *lifeline blocks* and include:

- Subsystems
- Stateflow charts
- Blocks that contain messages, for example, Stateflow charts.

Parameters

History

Specify maximum number of events to keep in viewer.

Settings

Default: 5000

See Also

Topics

- “Work with Message Viewer” (Stateflow)
- “Work with Message Viewer” (SimEvents)
- “Work with Message Viewer”

Introduced in R2015b

