



Landslide[®] Test System

Release 24.3

Tcl API Object and Perform Function Reference

Spirent Landslide

Release 24.3 – Tcl API Object and Perform Function Reference

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Object Reference

(R) – Denotes read-only attribute.

Top Level Singleton Objects

Client1

This is the top-level object that represents a connection to a TAS.

Writeable Attributes:

Writeable Attribute	Description						
LoggingCommandsToFile	<p>Indicates, enables, and disables, the logging of commands to a file named api_ClientLogger.txt in the directory that the Tcl was called from. This is the same data that is available via the CommandLog attribute or the ls::perform DumpClientLog function.</p> <p>Type: Boolean Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>true</td> <td>Commands are logged to file</td> </tr> <tr> <td>false</td> <td>Commands are not logged to file</td> </tr> </tbody> </table>	Value	Description	true	Commands are logged to file	false	Commands are not logged to file
Value	Description						
true	Commands are logged to file						
false	Commands are not logged to file						

Read-Only Attributes:

Read-Only Attribute	Description						
AdminMessage	<p>Returns the Admin Message if one is set.</p> <p>Type: String</p>						
CommandLog	<p>Returns the contents of the Client Command Log, which logs all Landslide Tcl API commands executed, and their success or failure.</p> <p>Type: String</p>						
IsConnected	<p>Indicates if the Client is logged into the TAS.</p> <p>Type: Boolean Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>true</td> <td>Client is connected to the TAS</td> </tr> <tr> <td>false</td> <td>Client is not connected to the TAS</td> </tr> </tbody> </table>	Value	Description	true	Client is connected to the TAS	false	Client is not connected to the TAS
Value	Description						
true	Client is connected to the TAS						
false	Client is not connected to the TAS						
IsSecure	<p>Indicates if the Client is securely connected to the TAS using HTTPS/TLS.</p> <p>Type: Boolean Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>true</td> <td>Client is using HTTPS/TLS</td> </tr> <tr> <td>false</td> <td>Client is using HTTPS/TCP</td> </tr> </tbody> </table>	Value	Description	true	Client is using HTTPS/TLS	false	Client is using HTTPS/TCP
Value	Description						
true	Client is using HTTPS/TLS						
false	Client is using HTTPS/TCP						

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RealTimeLogs	Lists the real-time logs received by the client. Type: List of Strings												
Status	Determines the connection status of the Client, i.e. the information displayed on the status bar of the GUI. Type: String-Enum Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>NA</td> <td>Connection status unknown</td> </tr> <tr> <td>OK</td> <td>Connection is nominal, heartbeat acknowledged</td> </tr> <tr> <td>WARNING</td> <td>Connection is unresponsive, may have issues</td> </tr> <tr> <td>FAILURE</td> <td>Connection has failed</td> </tr> <tr> <td>BUSY</td> <td>Connection is in use, cannot determine status with heartbeat</td> </tr> </tbody> </table>	Value	Description	NA	Connection status unknown	OK	Connection is nominal, heartbeat acknowledged	WARNING	Connection is unresponsive, may have issues	FAILURE	Connection has failed	BUSY	Connection is in use, cannot determine status with heartbeat
Value	Description												
NA	Connection status unknown												
OK	Connection is nominal, heartbeat acknowledged												
WARNING	Connection is unresponsive, may have issues												
FAILURE	Connection has failed												
BUSY	Connection is in use, cannot determine status with heartbeat												
TasClientVersion	Indicates the TAS version of the Tcl API Client. Can be determined before logging in. Type: String												
Version	Indicates the Landslide version of the TAS. Requires the client to be logged in; otherwise returns empty string. Type: String												
Warnings	Lists any warnings that occurred during login. Type: String												

Children:

None

ApiOptions

These are the system-wide options for the Landslide Tcl API. Currently, this includes logging and error handling options.

Writeable Attributes:

Writeable Attribute	Description
FileLogging	Specifies if Landslide will send API logs to a file. The value is the valid pathname of the output file or an empty string to indicate there is no file logging. Type: String Default: ""
LogLevel	Specifies the level of API logs to ignore or display. Only logs equal to or higher than LogLevel will be displayed or saved to file. Spirent Landslide Tcl API provides some Tcl constants to use with this attribute. Type: int Default: 4 Possible Values:

	Value	Tcl Constants	Description						
	0	ls::LOG_DEBUG	All logs level 0 and above will be displayed						
	1	ls::LOG_INFO	All logs level 1 and above will be displayed						
	2	ls::LOG_MINOR	All logs level 2 and above will be displayed						
	3	ls::LOG_MAJOR	All logs level 3 and above will be displayed						
	4	ls::LOG_WARNING	All logs level 4 and above will be displayed						
	5	ls::LOG_ERROR	All logs level 5 and above will be displayed						
	6	ls::LOG_IMPORTANT	All logs level 6 and above will be displayed						
	100	ls::LOG_SILENT	Silences logging.						
NoReturnSuccessResponseString	<p>The string returned when a command without a return value, e.g. ls::config, executes successfully. This does not affect commands that return a value or handle, e.g. ls::get. This can be used to visibly acknowledge successful execution.</p> <p>Example/demonstration:</p> <pre>% ls::get ApiOptions -LogLevel 6 % ls::get ApiOptions -NoReturnSuccessResponseString % ls::config ApiOptions -LogLevel 0 % ls::config ApiOptions -NoReturnSuccessResponseString "Ok" Ok % ls::config ApiOptions -LogLevel 0 Ok % ls::get ApiOptions -LogLevel 0 % ls::get ApiOptions -LogLevel2 Unknown ATTRIBUTE loglevel2 for ApiOptions % ls::config ApiOptions -NoReturnSuccessResponseString "" %</pre> <p>Type: String Default: "" {empty string}</p>								
SecureClient	<p>Specifies if the Client should securely connect to the TAS using HTTPS/TLS.</p> <p>Type: Boolean Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>true</td> <td>Client will use HTTPS/TLS</td> </tr> <tr> <td>false</td> <td>Client will use HTTPS/TCP</td> </tr> </tbody> </table>			Value	Description	true	Client will use HTTPS/TLS	false	Client will use HTTPS/TCP
Value	Description								
true	Client will use HTTPS/TLS								
false	Client will use HTTPS/TCP								
SshPort	<p>The port to use for accessing the TAS using SSH for file transfers and other purposes that require an SSH connection.</p> <p>Type: int Default: 22 Min: 0 Max: 65535</p>								

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StdOutLogging	<p>Specifies if Landslide will display API logs to stdout/console</p> <p>Type: Boolean Default: True Possible Values:</p> <table border="1"><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>true</td><td>Logs will go to console</td></tr><tr><td>false</td><td>Logs will not go to console</td></tr></tbody></table>	Value	Description	true	Logs will go to console	false	Logs will not go to console
Value	Description						
true	Logs will go to console						
false	Logs will not go to console						
SuppressTclErrors	<p>Whether to hide Tcl Exceptions when command errors occur.</p> <p>Type: Boolean Default: False Possible Values:</p> <table border="1"><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>true</td><td>Suppress Tcl Exceptions; use ErrorCode and ErrorInfo exclusively, when command errors occur.</td></tr><tr><td>false</td><td>Throw a Tcl Exception when command errors occur.</td></tr></tbody></table>	Value	Description	true	Suppress Tcl Exceptions; use ErrorCode and ErrorInfo exclusively, when command errors occur.	false	Throw a Tcl Exception when command errors occur.
Value	Description						
true	Suppress Tcl Exceptions; use ErrorCode and ErrorInfo exclusively, when command errors occur.						
false	Throw a Tcl Exception when command errors occur.						

Read-Only Attributes:

Read-Only Attribute	Description
JREMemoryUsage	<p>Displays the current memory usage of the Java Runtime Environment.</p> <p>Type: Formatted String Format: Memory: X of Y allocated, Z free</p>

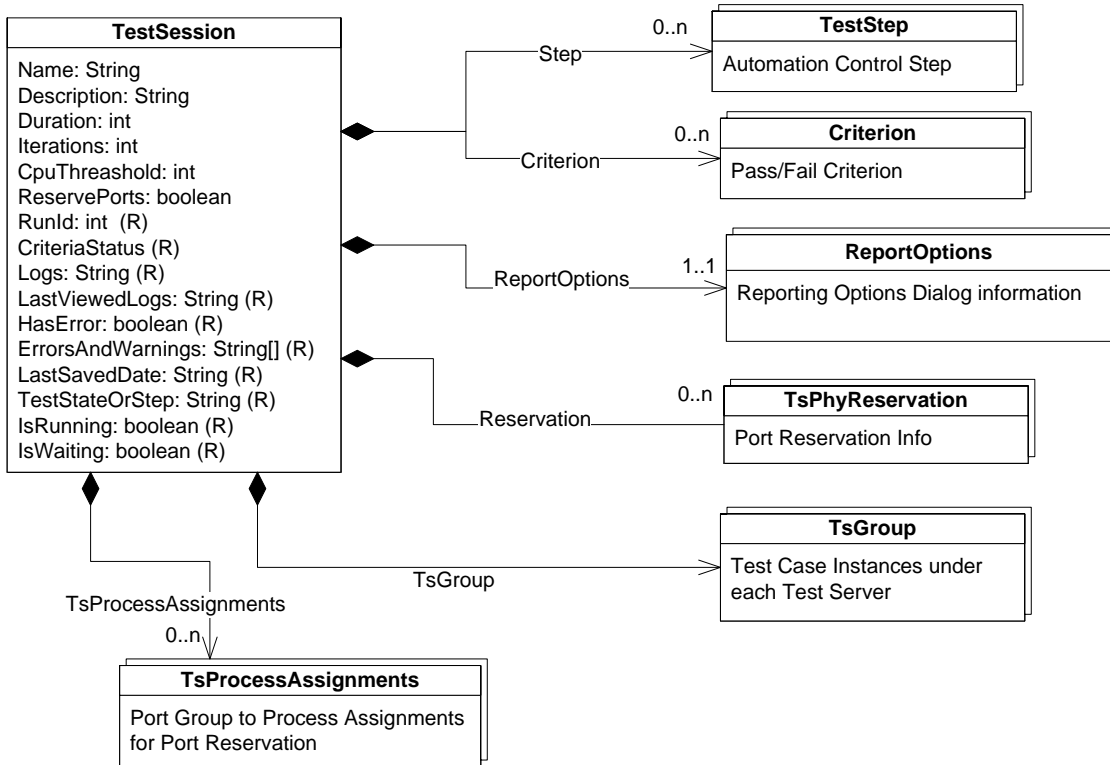
Children:

None

Test Session

Overview

The TestSession object encapsulates a Test Session; both the test specification (i.e. automation steps, test case parameters, and port reservation) and the run-time information (i.e. measurements and logs).



Test sessions can be created from scratch in the Landslide Tcl API using the `ls::create TestSession` command. This will return a handle to a new TestSession object. Test sessions can be retrieved from the TAS using the `ls::retrieve TestSession` command.

All TestSession objects include a ReportOptions child object. Step, Reservation, and TsGroup objects must be added using the `ls::create TYPE -under TEST_HANDLE` command. TsProcessAssignments must be created with the `ls::perform GenerateProcessAssignments` function.

TestSession

Writeable Attributes:

Writeable Attribute	Description						
AbortAfterSecs	<p>Sets a timer to automatically abort the test session after the number of elapsed time seconds. Set to 0 to disable.</p> <p>Type: int Default: 0 Min: 0 Max: 9999999</p>						
AbortWhenAnyTsRecycles	<p>Controls how the test session reacts to test server(s) recycling. When true, the test session will immediately abort when any one test server in the test recycles. When false, the test session will continue to run when any test server recycles, until all test servers in the test have recycled. Refer to the Landslide online Help for more details.</p> <p>Type: Boolean Default: true</p>						
AutoDeleteTimeoutMins	<p>Specifies how long a test session should be allowed to remain in memory after the test completes before being auto-deleted. In case the user forgets to ls::delete the test, this function will automatically delete the test session. Default is 1 day. Setting to 0 will delete the test immediately upon completion. Set to 0 if there is no need to query measurements after completion.</p> <p>Type: int Default: 1440 Min: 0 Max: 2880</p>						
AutoStop	<p>Enables or disables automatically stopping a parallel test session when all test cases are STOPPED or UNINITIALIZED.</p> <p>Type: Boolean Default: true</p>						
CslImpairment	<p>Enables CloudSure Impairment. This requires a license.</p> <p>Type: Boolean Default: true</p>						
CslImpairmentMode	<p>Sets the Mode for the CloudSure Impairment, whether it is manually started or automatically started when Test Session reaches RUNNING state</p> <p>Type: String-Enum Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Manual</td> <td>Started manually from the GUI</td> </tr> <tr> <td>Automatic</td> <td>Started automatically when the Test Session reaches RUNNING</td> </tr> </tbody> </table>	Value	Description	Manual	Started manually from the GUI	Automatic	Started automatically when the Test Session reaches RUNNING
Value	Description						
Manual	Started manually from the GUI						
Automatic	Started automatically when the Test Session reaches RUNNING						
DeletePcapsWhenNotFailed	<p>Enables or disables automatic deletion of pcap files (*.pcap) retrieved from Test Server at the end of the test, when the Test Session CriteriaStatus==FAILED</p> <p>Type: Boolean Default: false</p>						

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Description	<p>Description of the test session.</p> <p>Type: String, up to 1024 ASCII characters. Default: ""</p>						
DoNotDeleteTempFiles	<p>Indicates if temporary files on both the TAS and TS should be saved after a test session completes. Should only be enabled if requested by Support.</p> <p>Type: Boolean Default: true</p>						
DoNotOverrideAbortAfter	<p>Indicates if the TAS Setting forced_max_test_session_abort_time_mins should be prevented from overriding the AbortAfterSecs of this test.</p> <p>Type: Boolean Default: true</p>						
Duration	<p>Specifies the duration of a test that does not have automation control steps.</p> <p>Type: int Default: 0 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Runs indefinitely</td> </tr> <tr> <td>N > 0</td> <td>Runs for N seconds</td> </tr> </tbody> </table>	Value	Description	0	Runs indefinitely	N > 0	Runs for N seconds
Value	Description						
0	Runs indefinitely						
N > 0	Runs for N seconds						
EthInitWarningsAsLogs	<p>Controls how the test session reacts to test server port initialization. When true, the test session will treat port initialization warnings as standard informational log messages. When false, the test session will continue to treat port initialization warnings as warning log messages.</p> <p>Type: Boolean Default: true</p>						
Iterations	<p>The number of iterations/loops the test will run.</p> <p>Type: int Default: 1</p>						
Keywords	<p>Specific words that identify the test session.</p> <p>Type: Custom String: words separated by spaces, that contain up to 32 letters and numbers. Example: keyword1 KEYWORD2</p>						
Library	<p>The ID of the library for the test session is, or will be, stored in on the TAS.</p> <p>Type: int Default: 0</p>						
Name	<p>The name of the test session.</p> <p>Type: String (Valid Filename characters/format up to 64 characters) Default: ""</p>						

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Notes	<p>The user notes for the test session. Not included in a default <code>ls::get</code>, must specifically request it <code>ls::get -Notes</code>. This can be multi-line string, in Save-as-Tcl we use the Line Continuation Character, <code>\n</code>.</p> <p>Type: String, unlimited ASCII characters. Default: ""</p>								
PcapAnalysis	<p>The enabler for the Port Capture PCAP Analysis feature.</p> <p>Type: Boolean Default: false</p>								
ReportHighlighting	<p>The enabler for the GUI Highlighting of Report Tabs and Measurements. Not included in a default <code>ls::get</code> unless true, must specifically request it.</p> <p>Type: Boolean Default: false</p>								
Reserve	<p>Whether the test is reserving ports, or ports and processes. When the value is not None, port-subnets and static routes can be overridden using the list of Reservation objects. When the value is PortsAndProcesses, the processes can be assigned specifically using TsProcessAssignments objects.</p> <p>Type: String-Enum Possible Values:</p> <table border="1" data-bbox="613 1024 1490 1171"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>None</td> <td>Reserve nothing</td> </tr> <tr> <td>Ports</td> <td>Reserve just ports on the test server</td> </tr> <tr> <td>PortsAndProcesses</td> <td>Reserve ports and processes including assigning test cases (groups) to processes</td> </tr> </tbody> </table>	Value	Description	None	Reserve nothing	Ports	Reserve just ports on the test server	PortsAndProcesses	Reserve ports and processes including assigning test cases (groups) to processes
Value	Description								
None	Reserve nothing								
Ports	Reserve just ports on the test server								
PortsAndProcesses	Reserve ports and processes including assigning test cases (groups) to processes								
PreserveNumProcesses	<p>If the Test Session is set to Reserve=PortsAndProcesses, this flag determines if the Test Session will start when provided fewer than the expected number of TS processes. Used in conjunction with TsGroup RequestedProcesses for default assignments and the customized TcGroup ProcessIndex.</p> <p>Type: Boolean Default: false</p>								
SeparateChart3to5Tabs	<p>Enables or disables having charts 3 through 5 appear on separate tabs in the GUI.</p> <p>Type: Boolean Default: false</p>								
StopTraceDbgOnFail	<p>Enables or disables having the TS snapshot trace automatically stopped when CriteriaStatus is Failed</p> <p>Type: Boolean Default: false</p>								

TrapCategory	<p>The user-defined category to associate with the Test Session SNMP Trap</p> <p>Type: String Default: ""</p>																		
TrapFailedSeverity	<p>The severity to associate with the Test Session SNMP Trap</p> <p>Type: String-Enum Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> </tr> </thead> <tbody> <tr><td>Info</td></tr> <tr><td>Minor</td></tr> <tr><td>Major</td></tr> <tr><td>Critical</td></tr> </tbody> </table>	Value	Info	Minor	Major	Critical													
Value																			
Info																			
Minor																			
Major																			
Critical																			
TrapType	<p>The type of Test Session SNMP Trap, based upon Pass/Fail Criteria Status, when to send an SNMP Trap.</p> <p>Type: String-Enum Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>0</td><td>OFF/NONE</td></tr> <tr><td>1</td><td>Passed Only</td></tr> <tr><td>2</td><td>Failed Only</td></tr> <tr><td>3</td><td>Passed or Failed</td></tr> <tr><td>4</td><td>NA Only</td></tr> <tr><td>5</td><td>Passed or NA Only</td></tr> <tr><td>6</td><td>Failed or NA Only</td></tr> <tr><td>7</td><td>ALL Statuses</td></tr> </tbody> </table>	Value	Description	0	OFF/NONE	1	Passed Only	2	Failed Only	3	Passed or Failed	4	NA Only	5	Passed or NA Only	6	Failed or NA Only	7	ALL Statuses
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5	Passed or NA Only																		
6	Failed or NA Only																		
7	ALL Statuses																		
UseGratuitousArp	<p>Indicates if Gratuitous ARP should be done for all TestNode IP Addresses in the Test Session.</p> <p>Type: Boolean Default: true</p>																		
UseIpv6RouteSolicitation	<p>Indicates if IPv6 Route Solicitation should be used for Pre-Resolved ARP Addressing feature.</p> <p>Type: Boolean Default: true</p>																		
UseTsProcessIndexes	<p>Indicates if the Process Reservations/Assignments should be absolute TS Processes or relative. Absolute processes would ensure the TC-Group runs on specific TS-Process. Relative (default) only ensures the TC-Groups run on separate TS-Processes.</p> <p>Type: Boolean Default: true</p>																		

Read-Only Attributes:

Read-Only Attribute	Description										
CriteriaStatus	<p>The overall status of any pass/fail criteria. This will be the logical AND-ing of the status of all Criterion defined in the test session.</p> <p>Type: String Possible Values (Not a complete list):</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>Test is initializing.</td> </tr> <tr> <td>PENDING</td> <td>None of the Criterion has changed yet.</td> </tr> <tr> <td>PASSED</td> <td>At least one Criterion has PASSED, and none are FAILED.</td> </tr> <tr> <td>FAILED</td> <td>At least one of the Criteria has FAILED.</td> </tr> </tbody> </table>	Value	Description	N/A	Test is initializing.	PENDING	None of the Criterion has changed yet.	PASSED	At least one Criterion has PASSED, and none are FAILED.	FAILED	At least one of the Criteria has FAILED.
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ErrorsAndWarnings	<p>A list of validation errors and warnings. This will be set after using the validate command, (e.g. ls::perform validate –TestSession \$test). There will be one sublist for each test case instance in the test. The last item in the main list is the overall status of the validation, either Valid-Ready-To-Run-Or-Save or Invalid-Not-Ready-To-Run-Or-Save. Some test cases will also include Tcl Variable information in the errors and warnings. In these cases, the format would be as follows:</p> <p>Parameter not set or invalid and can be defaulted: “Parameter Label [ParameterVariable=NEW_VALUE] set to default value”</p> <p>Parameter not set or invalid and cannot be defaulted, requires user intervention: “Parameter Label [ParameterVariable] is invalid”</p> <p>Parameter upgraded simply to another variable name: “Parameter Label upgraded [ParameterVariable->NewParameterVariable]”</p> <p>Old parameter variable upgraded to more than one variable: “Parameter Label upgraded [ParameterVariable->NewParameterVariable1/NewParameterVariable2]”</p> <p>Multiple parameter variables upgraded into one variable: “Parameter Label upgraded [ParameterVariable1/ParameterVariable2->NewParameterVariable]”</p> <p>Examples: Valid: % ls::get \$test -ErrorsAndWarnings {} {} {} Valid-Ready-To-Run-Or-Save</p> <p>Warnings: % ls::get \$test -ErrorsAndWarnings { WiMAX - WiMAX Forum Version upgraded to default WiMAX - Vendor Variant upgraded to Variant 1} {} {} Valid-Ready-To-Run-Or-Save %</p>										

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	<p>Invalid:</p> <pre>% ls::get \$test -ErrorsAndWarnings { Network Devices - HA Node Invalid base IP or number of nodes Test case '' ts0tc0 requires user intervention} {} {} Invalid-Not-Ready-To-Run-Or-Save % </pre> <p>Type: List of Lists of Strings Example: { {TS0::TC0_LIST} {TS0::TC1_LIST} {TSn::TCn_LIST} STATUS }</p>
HasError	<p>Whether the test is valid and ready to run or save. This will be set after using the validate command (e.g. ls::perform validate –TestSession \$test).</p> <p>Type: Boolean</p>

IsRunning	Whether the test is running or not. Type: Boolean																						
IsWaiting	Whether the test is waiting for user action (i.e. CONTINUE button) Type: Boolean																						
LastSavedDate	The date the test session was last saved. Type: Formatted String Example: Wed August 31 19:00:00 EST 2009																						
Logs	Lists the received test run logs. Type: List of Strings																						
RemoteTestServers	Indicates that this test session is using one or more remotely located test servers, and the test session should wait for command responses and retransmit if necessary, the best effort to communicate reliably. Type: Boolean																						
ResultFilesList	The list of names of result files generated by the TS or TAS during the test. This is only updated after a per-session report generation or when a test session completes. This is the list of files that RetrieveResults perform function will download from the TAS. This attribute is cleared when you disconnect from the test session and is not refreshed when you reconnect. Type: List of Strings																						
ResultFilesUpdated	Indicates whether the ResultFilesList has been updated. Each time the attribute is read (via Is::get), the value is reset to false (the default). The attribute is only set to true, if/when result files have been updated. Use this to check for subsequent updates to the result files. This attribute is cleared when you disconnect from the test session and is not refreshed when you reconnect. Type: Boolean																						
RunId	The RunId for the current or last run of this test session. Type: int																						
TestStateOrStep	The current overall state or automation control step of the test. Type: String Possible Values (Not a complete list): <table border="1" data-bbox="574 1486 1490 1883"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>INIT</td> <td>Test is initializing.</td> </tr> <tr> <td>STARTING</td> <td>Test is starting test cases.</td> </tr> <tr> <td>STARTED</td> <td>Test has started all parallel test cases, waiting for running.</td> </tr> <tr> <td>RUNNING</td> <td>Test is running.</td> </tr> <tr> <td>WAIT_FOR_TRANSFERS</td> <td>Test is waiting for file transfers from test server(s).</td> </tr> <tr> <td>CLEANUP</td> <td>Test is cleaning up resources.</td> </tr> <tr> <td>COMPLETE</td> <td>Test is finished, no errors.</td> </tr> <tr> <td>COMPLETE_ERROR</td> <td>Test is finished, there were some errors.</td> </tr> <tr> <td>Step[N]</td> <td>Test is executing a step N.</td> </tr> <tr> <td>Step[N]_Waiting</td> <td>Test is waiting on a condition in the step N.</td> </tr> </tbody> </table>	Value	Description	INIT	Test is initializing.	STARTING	Test is starting test cases.	STARTED	Test has started all parallel test cases, waiting for running.	RUNNING	Test is running.	WAIT_FOR_TRANSFERS	Test is waiting for file transfers from test server(s).	CLEANUP	Test is cleaning up resources.	COMPLETE	Test is finished, no errors.	COMPLETE_ERROR	Test is finished, there were some errors.	Step[N]	Test is executing a step N.	Step[N]_Waiting	Test is waiting on a condition in the step N.
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UnViewedRunLogs	Lists the received test run logs that have not already been retrieved using this attribute. Type: List of Strings
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Children:

Child	Description
Chart	A collection of four (4) Chart objects, that each contain a list of measurements that are included in the Graph/Chart. Type: AutoCreated Multiplicity: 4
Criterion	Pass/Fail Criteria. Type: UserCreated Multiplicity: 0-300
CsProfile	Configuration of the CloudSure Profile. Type: AutoCreated Multiplicity: 1
Favorites	A Favorites object, containing a list of favorite measurements as MeasurementId objects Type: AutoCreated Multiplicity: 1
HttpPostInfo	Configuration of the HTTP Post of Favorites. Type: AutoCreated Multiplicity: 1
PortCaptureConfiguration	The Port Capture configuration options for each capturable port in the test session, including the eths, wlans, and wwlans. This list of objects is created with the GeneratePortCaptureConfiguration perform function, before they can be properly viewed/edited. Type: AutoCreated Multiplicity: 1-n, 1 for each capturable port in the test
ReportOptions	The Reporting options, including the Auto-Saved Report, TS generated reports and Per Session. Type: AutoCreated Multiplicity: 1
Reservation	The port reservation configuration objects for each test server. There should be 0 reservation objects if not using port reservation. Type: UserCreated Multiplicity: 1-n, 1 for each test server
Step	Automation Control step objects. Type: UserCreated Multiplicity: 0-128
TsGroup	The container for all test cases on a given test server Type: UserCreated Multiplicity: 1-n, 1 for each test server

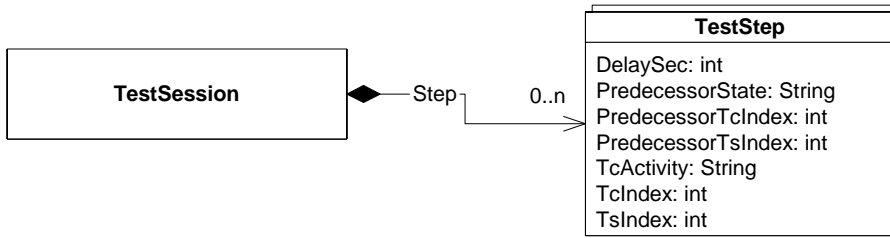
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TsProcessAssignments	<p>The process to TC-Group Assignment objects for each test server. There should be 0 TsProcessAssignments objects if not using port reservation and assignments.</p> <p>Type: Function Created (GenerateProcessAssignments) Multiplicity: 1-n, 1 for each test server</p>
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Step

This refers to a test session automation control step.



Writable Attributes:

Writable Attribute	Description												
DelaySec	<p>The time in seconds to delay, after the predecessor condition is met, before executing the step. Or, for a Loop End step, this sets the number of loops to execute in a Loop End step.</p> <p>Type: int Default: 0</p>												
PredecessorState	<p>The state the predecessor test case must be in before the step’s activity is executed.</p> <p>Type: Custom String Default: "" (Is::STEP_STATE_NONE)</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl Constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>""</td> <td>Is::STEP_STATE_NONE</td> <td>Empty string, no predecessor, PredecessorTcIndex and PredecessorTsIndex should both be -1</td> </tr> <tr> <td>Running</td> <td>Is::STEP_STATE_RUNNING</td> <td>The RUNNING state</td> </tr> <tr> <td>Stopped</td> <td>Is::STEP_STATE_STOPPED</td> <td>The STOPPED state</td> </tr> </tbody> </table>	Value	Tcl Constant	Description	""	Is::STEP_STATE_NONE	Empty string, no predecessor, PredecessorTcIndex and PredecessorTsIndex should both be -1	Running	Is::STEP_STATE_RUNNING	The RUNNING state	Stopped	Is::STEP_STATE_STOPPED	The STOPPED state
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PredecessorTcIndex	<p>The test case index of the test case to wait for PredecessorState.</p> <p>Type: int Default: -1 (Is::STEP_BLANK) Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>Is::STEP_BLANK</td> <td>No predecessor. If used, the PredecessorTsIndex must also be set to -1/STEP_BLANK</td> </tr> <tr> <td>N>=0</td> <td>N/A</td> <td>The index of the individual test case to wait for.</td> </tr> </tbody> </table>	Value	Tcl constant	Description	-1	Is::STEP_BLANK	No predecessor. If used, the PredecessorTsIndex must also be set to -1/STEP_BLANK	N>=0	N/A	The index of the individual test case to wait for.			
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<p>TcActivity</p>	<p>The action that occurs on the given test case when the step is executed.</p> <p>Type: Custom String Default: "" (Is::STEP_ACTIVITY_NONE) Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl Constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>""</td> <td>Is::STEP_ACTIVITY_NONE</td> <td>Empty string is allowed for Loop Start, Loop End, and Wait steps</td> </tr> <tr> <td>Init</td> <td>Is::STEP_ACTIVITY_INIT</td> <td>Initializes the test case</td> </tr> <tr> <td>Start</td> <td>Is::STEP_ACTIVITY_START</td> <td>Starts the test case</td> </tr> <tr> <td>Stop</td> <td>Is::STEP_ACTIVITY_STOP</td> <td>Stops the test case</td> </tr> <tr> <td>Cleanup</td> <td>Is::STEP_ACTIVITY_CLEANUP</td> <td>Releases test case resources</td> </tr> </tbody> </table>	Value	Tcl Constant	Description	""	Is::STEP_ACTIVITY_NONE	Empty string is allowed for Loop Start, Loop End, and Wait steps	Init	Is::STEP_ACTIVITY_INIT	Initializes the test case	Start	Is::STEP_ACTIVITY_START	Starts the test case	Stop	Is::STEP_ACTIVITY_STOP	Stops the test case	Cleanup	Is::STEP_ACTIVITY_CLEANUP	Releases test case resources
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Read-only Attributes:

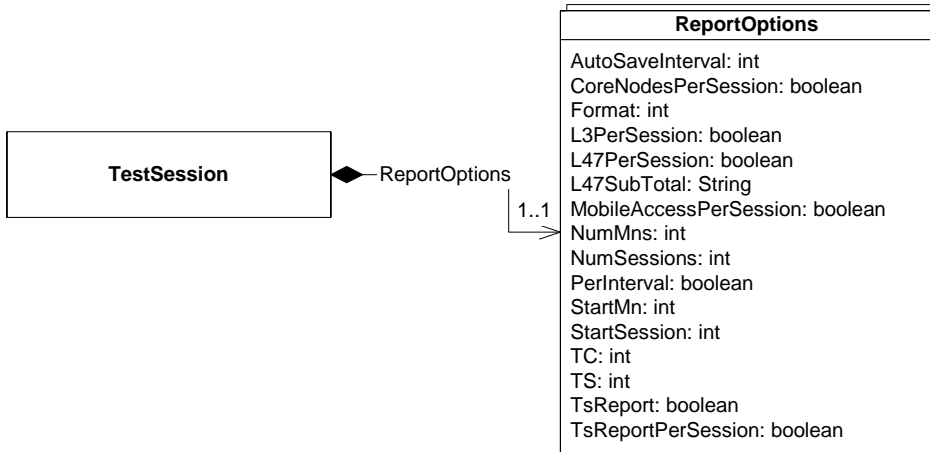
None

Children:

None

ReportOptions

The ReportOptions object specifies the reporting options for the test session, including TS generated reports, subtotals, auto-saved reports, and the end-of-test report. This is the same information that is provided on the Report Options dialog and the Report > Save dialog in the GUI Client.



Writeable Attributes:

Writeable Attribute	Description									
AutoSaveInterval	How often an auto-saved report should be saved, in hours. 0 indicates only at the end of the test. 2 hours is the minimum valid “on” value. Type: int Default: 0 Min: 2 Max: 24									
CoreNodesPerSession	The flag to enable or disable per-session reporting on Core Node measurements. Type: Boolean Default: false									
CreateDatabase	The flag to enable or disable database generation. Type: Boolean Default: false									
Format	The format of the auto-saved and end-of-test report. Type: int Default: 0 Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Is::FORMAT_XLS</td> <td>Excel (xls) format.</td> </tr> <tr> <td>1</td> <td>Is::FORMAT_CSV</td> <td>Comma Separated Values (csv) format</td> </tr> </tbody> </table>	Value	Tcl constant	Description	0	Is::FORMAT_XLS	Excel (xls) format.	1	Is::FORMAT_CSV	Comma Separated Values (csv) format
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GenerateHtmlReport	The flag to enable or disable the HTML Report. Type: Boolean Default: false									

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GenerateTac	The flag to enable or disable TAC report generation. Type: Boolean Default: false																		
HtmlRptUseTemplate	The flag to enable or disable the use of the Results Manager Template with an HTML Report. Type: Boolean Default: false																		
IncludeTcDiagrams	The flag to enable or disable TC Diagrams being saved in zip file. Type: Boolean Default: false																		
InitialIntervalPeriod	The number of seconds per interval at the start of the test. Type: custom int Default: 15 Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>Minimum 5 second intervals (use with caution, refer to the online Help)</td> </tr> <tr> <td>10</td> <td>10 second intervals (use with caution, refer to the online Help)</td> </tr> <tr> <td>15</td> <td>Normal 15 second intervals</td> </tr> <tr> <td>30</td> <td>Double 30 seconds intervals</td> </tr> <tr> <td>60</td> <td>1 minute intervals</td> </tr> <tr> <td>120</td> <td>2 minute intervals</td> </tr> <tr> <td>300</td> <td>5 minute intervals</td> </tr> <tr> <td>600</td> <td>10 minute intervals</td> </tr> </tbody> </table>	Value	Description	5	Minimum 5 second intervals (use with caution, refer to the online Help)	10	10 second intervals (use with caution, refer to the online Help)	15	Normal 15 second intervals	30	Double 30 seconds intervals	60	1 minute intervals	120	2 minute intervals	300	5 minute intervals	600	10 minute intervals
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L3PerSession	The flag to enable or disable per session reporting on L3 measurements Type: Boolean Default: false																		
L47PerSession	The flag to enable or disable per session reporting on L4-7 measurements Type: Boolean Default: false																		
L47ClientPerPdu	The flag to enable or disable per PDU reporting on L4-7 measurements Type: Boolean Default: false																		
L47SubTotal	The type of subtotaling to be done on the L4-7 measurements. Type: Custom String Default: None Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>None</td> <td>No subtotaling on the L4-7 measurements</td> </tr> <tr> <td>DMF</td> <td>Subtotal up to the first 10 DMF mainflow instances</td> </tr> <tr> <td>Mobile Node</td> <td>Subtotal up to the first 10 Mobile Node instances, based on the range defined in StartMn and NumMns.</td> </tr> </tbody> </table>	Value	Description	None	No subtotaling on the L4-7 measurements	DMF	Subtotal up to the first 10 DMF mainflow instances	Mobile Node	Subtotal up to the first 10 Mobile Node instances, based on the range defined in StartMn and NumMns.										
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MeasDbTemplateTdfLibrary	The library ID of the Test Data File that is the Results Manager Template for either the HTML Report or the meas.db Database. Type: int Default: 0
MeasDbTemplateTdfName	The name of the Test Data File the Results Manager Template for either the HTML Report or the meas.db Database. Type: String (Valid Filename characters/format) Default: ""
MobileAccessPerBearer	The flag to enable or disable per bearer reporting on Mobile Access measurements. Type: Boolean Default: false
MobileAccessPerNetworkSlice	The flag to enable or disable per network slice reporting on Mobile Access measurements. Type: Boolean Default: false
MobileAccessPerSession	The flag to enable or disable per session reporting on Mobile Access measurements. Type: Boolean Default: false
NumMns	The number of mobile nodes reported. 0 indicates all nodes. The first 10 nodes will also be subtotaled in the Client. Type: int Default: 0 Min: 0 Max: {max nodes allowed – starting node}
NumSessions	The number of sessions reported. 0 indicates all sessions. The first 10 sessions will also be subtotaled in the Client. Type: int Default: 0 Min: 0 Max: {max sessions allowed – starting session}
PerInterval	The flag to set per-interval versus a cumulative report. Type: Boolean Default: false

RequestedMaxIntervals	<p>The requested maximum number of intervals to store before halving.</p> <p>Type: custom int Default: 1000 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>100 intervals</td> </tr> <tr> <td>250</td> <td>250 intervals</td> </tr> <tr> <td>500</td> <td>500 intervals</td> </tr> <tr> <td>1000</td> <td>1000 intervals; only recommended for 100 or fewer test cases.</td> </tr> <tr> <td>2000</td> <td>2000 intervals; only recommended for 50 or fewer test cases and not the EVERYTHING (in one file) option.</td> </tr> <tr> <td>5000</td> <td>5000 intervals; only recommended for 15 or fewer test cases and not valid for ls::REPORT_EVERYTHING (All TCs in one file) option.</td> </tr> <tr> <td>10000</td> <td>10000 intervals; only recommended for 10 or fewer test cases and not valid for ls::REPORT_EVERYTHING (All TCs in one file) option.</td> </tr> <tr> <td>20000</td> <td>20000 intervals; only recommended for 5 or fewer test cases and not valid for ls::REPORT_EVERYTHING (All TCs in one file) option.</td> </tr> </tbody> </table>	Value	Description	100	100 intervals	250	250 intervals	500	500 intervals	1000	1000 intervals; only recommended for 100 or fewer test cases.	2000	2000 intervals; only recommended for 50 or fewer test cases and not the EVERYTHING (in one file) option.	5000	5000 intervals; only recommended for 15 or fewer test cases and not valid for ls::REPORT_EVERYTHING (All TCs in one file) option.	10000	10000 intervals; only recommended for 10 or fewer test cases and not valid for ls::REPORT_EVERYTHING (All TCs in one file) option.	20000	20000 intervals; only recommended for 5 or fewer test cases and not valid for ls::REPORT_EVERYTHING (All TCs in one file) option.
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<p>TsReport</p>	<p>The flag to enable or disable TS generated reports.</p> <p>Type: Boolean Default: false</p>															
<p>TsReportPerMn</p>	<p>The flag to enable or disable per Mobile Node reporting in TS generated reports.</p> <p>Type: Boolean Default: false</p>															
<p>TsReportPerSession</p>	<p>The flag to enable or disable per session reporting in TS generated reports.</p> <p>Type: Boolean Default: false</p>															
<p>TsRetrieveDisabled</p>	<p>The flag to disable or allow the TAS to attempt to retrieve any files from the TS at the end of the test. If you set this true, the TAS will not attempt to connect to TS and transfer files and no TS-generated test files will be retrieved from TS. This only affects the end of test retrieval. Manually initiated per-session generation and Port Captures are not affected. ACTS PCAP files are potentially independent to this, if you enable Port Capture, you may have mixed results.</p> <p>Type: Boolean Default: false</p>															

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UseRealTimeForInterval	<p>The flag to enable or disable using real (clock) time for marking the interval boundaries. When false, the intervals are marked based on Elapsed Time. When true, the intervals are marked based on the TAS system clock, i.e. seconds_since_midnight % interval-period == 0.</p> <p>Type: Boolean Default: false</p>
VisionWorksCopy	<p>Enables the VisionWorks output files to be copied to the VisionWorks directory and allows Analytics to collect them. Set this to false to prevent the results from being displayed in Analytics.</p> <p>Type: Boolean Default: true</p>
VisionWorksIntentOfTest	<p>Sets the default intent of the test for InTouch to display VisionWorks results. Refer to the Landslide application online Help and the VisionWorks documentation for more information. Log in to the CSC with your username and password and type "VisionWorks" in the <i>Search KB</i> box. Click Search KB or press Enter.</p> <p>Type: Custom String Default: Enterprise Possible Values: Enterprise, Data, VoLTE, SMS-MMS, Network-Latency, OTT-Apps, OTT-Video, NB-IOT, Emerg-Svcs, Custom</p>
VisionWorksReport	<p>Enables the VisionWorks output generation by the TAS.</p> <p>Type: Boolean Default: false</p>

Children:

Child	Description
VwTagsInfo	<p>The object that provides access to the VisionWorks Tags. Only used for VisionWorks.</p> <p>Type: AutoCreated Multiplicity: 1</p>

MeasurementId

The MeasurementId class specifies a measurement to be associated with the test session in the Chart0, Chart1, or Favorites child lists.

Writeable Attributes:

Writeable Attribute	Description									
Name	The name of the measurement; its label, not its variable name Type: String Default: ""									
PerInterval	When true, indicates that the measurement value should be per-interval, not cumulative Type: Boolean Default: False									
SubtotalTab	The subtotal tab name if defining a subtotal measurement. Type: String Default: ""									
Tab	The name of the tab that contains the measurement. Type: String Default: ""									
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Read-only Attributes:

None

Children:

None

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TsGroup

The TsGroup object specifies a test server that is used by this test session and contains all the test cases running on the test server.

Writeable Attributes:

Writeable Attribute	Description
TsId	This represents the ID of the test server. Type: int Default: 0
RequestedProcesses	The number of processes requested on this TS; only used when reserving processes is enabled on the test session. A value of 0 implies the maximum allowed by the TS and required by TC-Groups. Type: int Default: 0

Read-only Attributes:

None

Children:

Child	Description
PreResolvedArpAddress	An address range for Pre-Resolving ARP. Type: UserCreated Multiplicity: 1-n
Tc	A test case object. Type: UserCreated Multiplicity: 1-n

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PreResolvedArpAddress

The PreResolvedArpAddress object specifies an IP address range to be Pre-Resolved by ARP before test cases start.

Writeable Attributes:

Writeable Attribute	Description
EthPort	The optional ETH port name to associate this Address Range. If left as empty string the range will be associated with all ports, thus all test cases (TCs). When using Process Reservation, it will be mandatory to set a port so that the range can be properly used only on the TS-Process that needs it. When setting the port, the TAS will only create the ranges on the TS for TCs that are associated or use the port. Type: String Default: ""
NumNodes	The number of addresses in the pool. Type: int Default: 0
OuterVlanId	The outer VLAN ID for this Address Range. 0=no VLAN. Type: int Default: 0 Min: 0 Max: 4094
StartingAddress	The base IP address and optional CIDR /mask. Type: String Default: ""

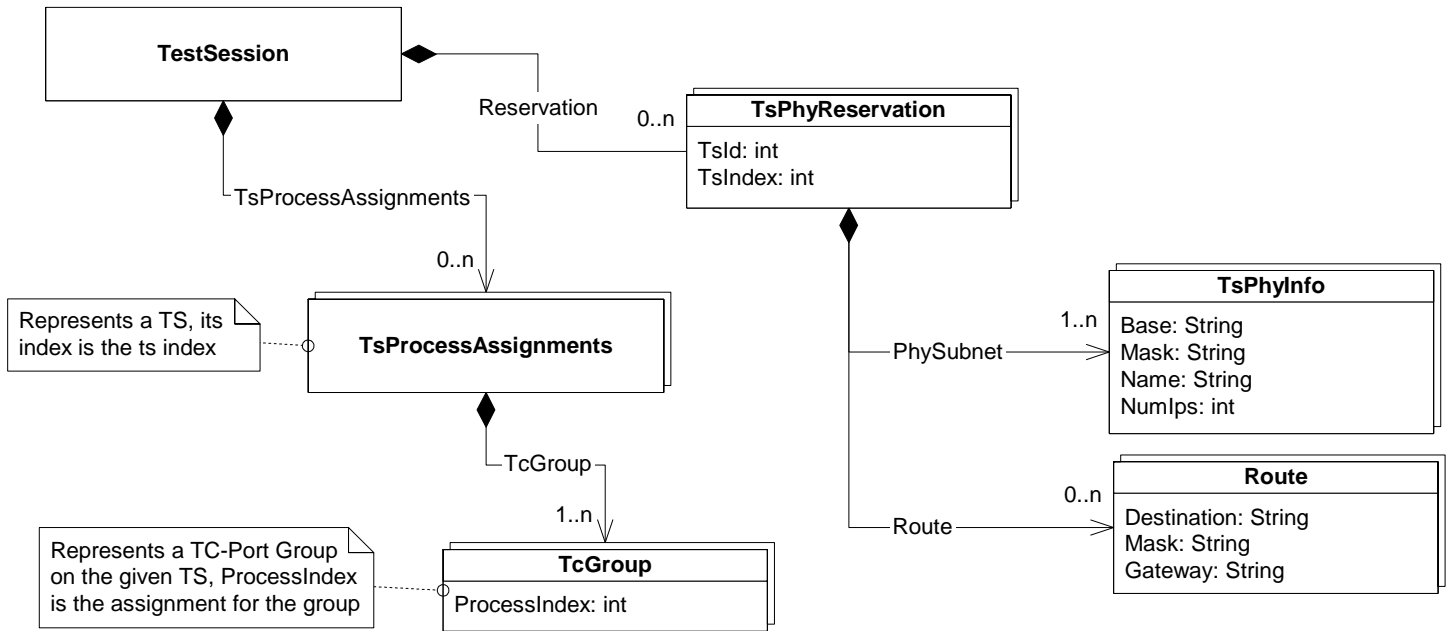
Read-only Attributes:

None

Children:

None

Port Reservation and Process Assignments Overview



Reservation

The Reservation object specifies the overridden port-subnet and static route reservation information for a specific test server within this test session. If you add a Reservation object (override) for one test server in a test, you must add a Reservation object for all test servers used in the test. If you do not provide any Reservation objects, the Ports are reserved for use and the default port-subnets and routes defined in the Test Server are used.

Writable Attributes:

Writable Attribute	Description
Tslid	The ID of the test server this represents. Type: int Default: 0
TsIndex	The index of the test server within this test session. This should match this objects index within the list of Reservation objects. Type: int Default: 0
TsName	The name of the test server. However, you must use Tslid to identify the test server. TsName is just for display purposes. Type: String Default: ""

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Read-only Attributes:

None

Children:

Child	Description
PhySubnet	An Ethernet port subnet definition. Type: UserCreated Multiplicity: 1-n
Route	Static Route entry Type: UserCreated Multiplicity: 0-n

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Route

The Route object specifies a static route entry.

Writeable Attributes:

Writeable Attribute	Description
Destination	The destination IP address Type: String Default: ""
Mask	The mask Type: String Default: ""
Gateway	The gateway Type: String Default: ""

Read-only Attributes:

None

Children:

None

PhySubnet

The PhySubnet object specifies a port reservation interface entry. It is the TsPhyInfo type/class.

Writeable Attributes:

Writeable Attribute	Description
Base	The base IP address Type: String Default: ""
Mask	The mask Type: String Default: ""
Name	The interface name Type: String Default: ""
NumIps	The number of addresses in the pool. Type: int Default: 0

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Read-only Attributes:

None

Children:

None

TsProcessAssignments

This represents all of the test case port groups on a given test server. The index of the TsProcessAssignments object within the TestSession is the index of the test server in the TestSession.

Writeable Attributes:

None

Read-only Attributes:

None

Children:

Child	Description
TcGroup	A test case port group. Type: FunctionCreated (GenerateProcessAssignments) Multiplicity: 1-n

TcGroup

This represents a group of test cases that share ports in common.

Writeable Attributes:

Writeable Attribute	Description
ProcessIndex	The index of the process this test case port group is assigned to. Currently there are only 3 processes running on each test server. Type: int Default: 0 Min: 0 Max: 2

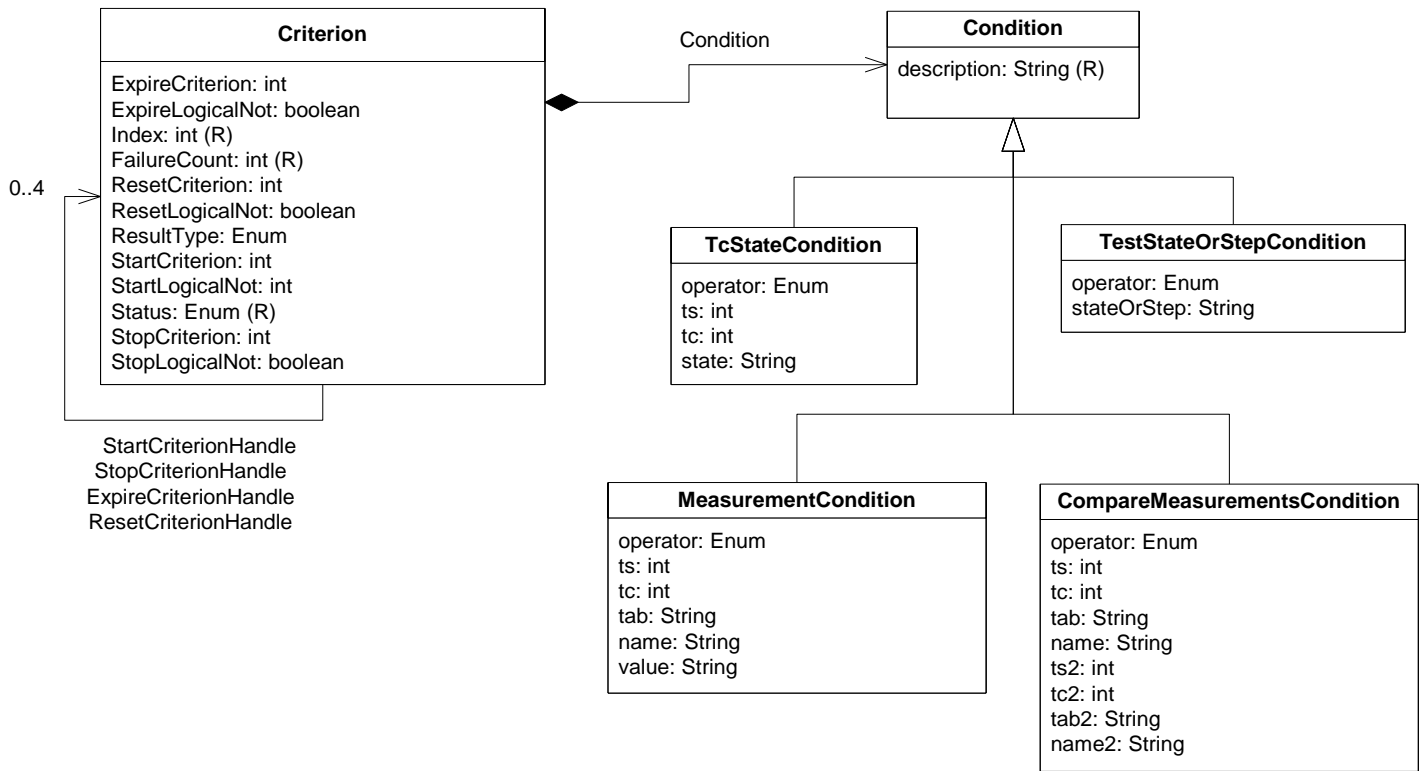
Read-only Attributes:

None

Children:

None

Pass/Fail Criteria Overview



Criterion

The Criterion object represents a single pass/fail criterion.

Writeable Attributes:

Writeable Attribute	Description															
ExpireCriterion	<p>The index of the criterion or special enum value that indicates when this criterion expires.</p> <p>Type: int or Enum Default: START_OF_ITERATION</p> <table border="1"> <thead> <tr> <th>Value</th> <th>String</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-2</td> <td>END_OF_TEST</td> <td>The very end of the test.</td> </tr> <tr> <td>-3</td> <td>START_OF_ITERATION</td> <td>The start of a test iteration. This only occurs in a multi-iteration test when the test reaches the "INIT" state.</td> </tr> <tr> <td>-4</td> <td>END_OF_ITERATION</td> <td>The end of a test iteration. This occurs for all tests each time the test reaches the FINAL state.</td> </tr> <tr> <td>N>=0</td> <td><N/A></td> <td>The index of the criterion</td> </tr> </tbody> </table>	Value	String	Description	-2	END_OF_TEST	The very end of the test.	-3	START_OF_ITERATION	The start of a test iteration. This only occurs in a multi-iteration test when the test reaches the "INIT" state.	-4	END_OF_ITERATION	The end of a test iteration. This occurs for all tests each time the test reaches the FINAL state.	N>=0	<N/A>	The index of the criterion
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<p>ExpireLogicalNot</p>	<p>When true, indicates that the criterion will expire when the ExpireCriterion is NOT true. Only valid when the ExpireCriterion is a specific user criterion.</p> <p>Type: Boolean Default: False</p>															
<p>ResetCriterion</p>	<p>The index of the criterion or special enum value that indicates when this criterion resets.</p> <p>Type: int or Enum Default: START_OF_ITERATION</p> <table border="1" data-bbox="574 562 1490 919"> <thead> <tr> <th>Value</th> <th>String</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-2</td> <td>NEVER</td> <td>Never reset the criterion.</td> </tr> <tr> <td>-3</td> <td>START_OF_ITERATION</td> <td>Reset the criterion at the start of each test iteration. This only occurs in a multi-iteration test when the test reaches the "INIT" state.</td> </tr> <tr> <td>-4</td> <td>END_OF_ITERATION</td> <td>Reset the criterion at the end of each test iteration. This occurs for all tests each time the test reaches the FINAL state.</td> </tr> <tr> <td>N>=0</td> <td><N/A></td> <td>The index of the criterion that indicates when to reset this criterion.</td> </tr> </tbody> </table>	Value	String	Description	-2	NEVER	Never reset the criterion.	-3	START_OF_ITERATION	Reset the criterion at the start of each test iteration. This only occurs in a multi-iteration test when the test reaches the "INIT" state.	-4	END_OF_ITERATION	Reset the criterion at the end of each test iteration. This occurs for all tests each time the test reaches the FINAL state.	N>=0	<N/A>	The index of the criterion that indicates when to reset this criterion.
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<p>ResultType</p>	<p>Determines the status of the criterion when the condition is true or expired.</p> <p>Type: Enum Default: PASS</p> <table border="1" data-bbox="574 1264 1490 1474"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PASS</td> <td>The criterion is set to PASSED when the condition is true, FAILED when expired.</td> </tr> <tr> <td>FAIL</td> <td>The criterion is set to FAILED when the condition is true, PASSED when expired.</td> </tr> <tr> <td>LOG</td> <td>The criterion is set to OCCURRED when the condition is true and left PENDING when expired.</td> </tr> </tbody> </table>	Value	Description	PASS	The criterion is set to PASSED when the condition is true, FAILED when expired.	FAIL	The criterion is set to FAILED when the condition is true, PASSED when expired.	LOG	The criterion is set to OCCURRED when the condition is true and left PENDING when expired.							
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<p>StartCriterion</p>	<p>The index of the criterion or special enum value that indicates when this criterion starts monitoring its condition.</p> <p>Type: int or Enum Default: START_OF_ITERATION</p> <table border="1"> <thead> <tr> <th>Value</th> <th>String</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>START_OF_TEST</td> <td>The start of the test, before anything occurs</td> </tr> <tr> <td>-2</td> <td>END_OF_TEST</td> <td>The very end of the test.</td> </tr> <tr> <td>-3</td> <td>START_OF_ITERATION</td> <td>Start the criterion at the beginning of each test iteration. This only occurs in a multi-iteration test when the test reaches the "INIT" state.</td> </tr> <tr> <td>-4</td> <td>END_OF_ITERATION</td> <td>Start the criterion at the end of each test iteration. This occurs for all tests each time the test reaches the FINAL state.</td> </tr> <tr> <td>N>=0</td> <td><N/A></td> <td>The index of the criterion that indicates when to start this criterion.</td> </tr> </tbody> </table>	Value	String	Description	-1	START_OF_TEST	The start of the test, before anything occurs	-2	END_OF_TEST	The very end of the test.	-3	START_OF_ITERATION	Start the criterion at the beginning of each test iteration. This only occurs in a multi-iteration test when the test reaches the "INIT" state.	-4	END_OF_ITERATION	Start the criterion at the end of each test iteration. This occurs for all tests each time the test reaches the FINAL state.	N>=0	<N/A>	The index of the criterion that indicates when to start this criterion.
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<p>StopCriterion</p>	<p>The index of the criterion or special enum value that indicates when this criterion stops monitoring its condition.</p> <p>Type: int or Enum Default: START_OF_ITERATION</p> <table border="1"> <thead> <tr> <th>Value</th> <th>String</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-2</td> <td>NEVER</td> <td>In essence, monitor until the very end of the test.</td> </tr> <tr> <td>-3</td> <td>START_OF_ITERATION</td> <td>Stop the criterion at the beginning of each test iteration. This only occurs in a multi-iteration test when the test reaches the "INIT" state.</td> </tr> <tr> <td>-4</td> <td>END_OF_ITERATION</td> <td>Stop the criterion at the end of each test iteration. This occurs for all tests each time the test reaches the FINAL state.</td> </tr> <tr> <td>N>=0</td> <td><N/A></td> <td>The index of the criterion that indicates when to stop this criterion.</td> </tr> </tbody> </table>	Value	String	Description	-2	NEVER	In essence, monitor until the very end of the test.	-3	START_OF_ITERATION	Stop the criterion at the beginning of each test iteration. This only occurs in a multi-iteration test when the test reaches the "INIT" state.	-4	END_OF_ITERATION	Stop the criterion at the end of each test iteration. This occurs for all tests each time the test reaches the FINAL state.	N>=0	<N/A>	The index of the criterion that indicates when to stop this criterion.			
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Read-only Attributes:

Read-Only Attribute	Description												
FailureCount	The number of times this criterion failed throughout the test. Type: int Default: 0												
Index	The index of this criterion this test session. The criteria indexes will remain valid as long as no criteria are deleted. If any criteria are deleted, the RefreshCriteria Perform function should be called to refresh the criteria relationships. Type: int Default: 0												
Status	The overall status of this criterion for the current test run. Type: Enum Default: "N/A" <table border="1" data-bbox="581 743 1490 957"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>Test has not started yet.</td> </tr> <tr> <td>PENDING</td> <td>Test is running, criterion has not fired or expired yet.</td> </tr> <tr> <td>PASSED</td> <td>The criterion has PASSED</td> </tr> <tr> <td>FAILED</td> <td>The criterion has FAILED</td> </tr> <tr> <td>OCCURRED</td> <td>The LOG Criterion has OCCURRED</td> </tr> </tbody> </table>	Value	Description	N/A	Test has not started yet.	PENDING	Test is running, criterion has not fired or expired yet.	PASSED	The criterion has PASSED	FAILED	The criterion has FAILED	OCCURRED	The LOG Criterion has OCCURRED
Value	Description												
N/A	Test has not started yet.												
PENDING	Test is running, criterion has not fired or expired yet.												
PASSED	The criterion has PASSED												
FAILED	The criterion has FAILED												
OCCURRED	The LOG Criterion has OCCURRED												

Children:

Child	Description
ExpireCriterionHandle	The handle to the criterion that determines when this criterion expires. When this is set, a call to the RefreshCriteria Perform function will automatically update the ExpireCriterion index based on the current index of the ExpireCriterionHandle object. If the handle is not set, if any criteria have been rearranged, the ExpireCriterion index must be updated manually. Example: set expires [ls::get \$test -children-Criterion(2)] ls::config \$test.Criterion(3) -Children-ExpireCriterionHandle \$expires Type: UserCreated Multiplicity: 0..1
Condition	The Condition that the criterion monitors. The Condition will be one of four types, either TcStateCondition, TestStepOrStateCondition, MeasurementCondition, or CompareMeasurementsCondition. The Condition is set with the ls::create command. Calling create multiple times on the same criterion will overwrite the previous Condition created. Example: ls::create TcStateCondition -under \$myCriterion Type: UserCreated Multiplicity: 1

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Tcl API Object and Perform Function Reference

ResetCriterionHandle	<p>The handle to the criterion that determines when this criterion resets. When this is set, a call to RefreshCriteria Perform function will automatically update the ResetCriterion index based on the current index of the ResetCriterionHandle object. If the handle is not set, if any criteria have been rearranged, the ResetCriterion index must be updated manually.</p> <p>Type: UserCreated Multiplicity: 0..1</p>
StartCriterionHandle	<p>The handle to the criterion that determines when this criterion starts. When this is set, a call to RefreshCriteria Perform function will automatically update the StartCriterion index based on the current index of the StartCriterionHandle object. If this handle is not set, and if any criteria have been rearranged, the StartCriterion index must be updated manually.</p> <p>Type: UserCreated Multiplicity: 0..1</p>
StopCriterionHandle	<p>The handle to the criterion that determines when this criterion stops. When this is set, a call to RefreshCriteria Perform function will automatically update the StartCriterion index based on the current index of the StartCriterionHandle object. If this handle is not set, and if any criteria have been rearranged, the StartCriterion index must be updated manually.</p> <p>Type: UserCreated Multiplicity: 0..1</p>

CompareMeasurementsCondition

This is a condition that compares two measurements to each other.

Writeable Attributes:

Writeable Attribute	Description																
Name	The name of the first measurement. Type: String Default: ""																
Name2	The name of the second measurement. Type: String Default: ""																
Operator	The operator to compare the two measurements. Type: Enum Default: EQ Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>EQ</td> <td>Equals ==</td> </tr> <tr> <td>NEQ</td> <td>Not Equals !=</td> </tr> <tr> <td>GT</td> <td>Greater Than ></td> </tr> <tr> <td>GTE</td> <td>Greater Than or Equals >=</td> </tr> <tr> <td>LT</td> <td>Less Than <</td> </tr> <tr> <td>LTE</td> <td>Less Than Or Equals <=</td> </tr> <tr> <td>MATCHES</td> <td>Java Regular Expression Match</td> </tr> </tbody> </table>	Value	Description	EQ	Equals ==	NEQ	Not Equals !=	GT	Greater Than >	GTE	Greater Than or Equals >=	LT	Less Than <	LTE	Less Than Or Equals <=	MATCHES	Java Regular Expression Match
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EQ	Equals ==																
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GT	Greater Than >																
GTE	Greater Than or Equals >=																
LT	Less Than <																
LTE	Less Than Or Equals <=																
MATCHES	Java Regular Expression Match																
Tab	The name of the tab that contains the first measurement. Type: String Default: ""																
Tab2	The name of the tab that contain the second measurement. Type: String Default: ""																
TC	The test case index of the test case that includes the first measurement, or Summary indicator. Type: int Default: -1 (Is::REPORT_SUMMARY) Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>Is::REPORT_SUMMARY</td> <td>A summary view measurement</td> </tr> <tr> <td>N>=0</td> <td>N/A</td> <td>The TS index of the individual test case to find measurement</td> </tr> </tbody> </table>	Value	Tcl constant	Description	-1	Is::REPORT_SUMMARY	A summary view measurement	N>=0	N/A	The TS index of the individual test case to find measurement							
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N>=0	N/A	The TS index of the individual test case to find measurement															

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TS	<p>The test server index of the test case that includes the first measurement, or Summary indicator.</p> <p>Type: int Default: -1 (Is::REPORT_SUMMARY) Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>Is::REPORT_SUMMARY</td> <td>A summary view measurement</td> </tr> <tr> <td>N>=0</td> <td>N/A</td> <td>The TS index of the individual test case to find measurement</td> </tr> </tbody> </table>	Value	Tcl constant	Description	-1	Is::REPORT_SUMMARY	A summary view measurement	N>=0	N/A	The TS index of the individual test case to find measurement
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Value	Tcl constant	Description								
-1	Is::REPORT_SUMMARY	A summary view measurement								
N>=0	N/A	The TS index of the individual test case to find measurement								

Read-only Attributes:

None

Children:

None

MeasurementCondition

A condition that compares a measurement to a user specified value.

Writable Attributes:

Writable Attribute	Description														
Name	<p>The name of the measurement.</p> <p>Type: String Default: ""</p>														
Operator	<p>The operator to compare the measurement to the value.</p> <p>Type: Enum Default: EQ Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>EQ</td> <td>Equals ==</td> </tr> <tr> <td>NEQ</td> <td>Not Equals !=</td> </tr> <tr> <td>GT</td> <td>Greater Than ></td> </tr> <tr> <td>GTE</td> <td>Greater Than or Equals >=</td> </tr> <tr> <td>LT</td> <td>Less Than <</td> </tr> <tr> <td>LTE</td> <td>Less Than Or Equals <=</td> </tr> </tbody> </table>	Value	Description	EQ	Equals ==	NEQ	Not Equals !=	GT	Greater Than >	GTE	Greater Than or Equals >=	LT	Less Than <	LTE	Less Than Or Equals <=
Value	Description														
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GT	Greater Than >														
GTE	Greater Than or Equals >=														
LT	Less Than <														
LTE	Less Than Or Equals <=														
Tab	<p>The name of the tab that contains the measurement.</p> <p>Type: String Default: ""</p>														

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TC	<p>The test case index of the test case that includes the measurement, or Summary indicator.</p> <p>Type: int Default: -1 (ls::REPORT_SUMMARY) Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>ls::REPORT_SUMMARY</td> <td>A summary view measurement</td> </tr> <tr> <td>N>=0</td> <td>N/A</td> <td>The TS index of the individual test case to find measurement</td> </tr> </tbody> </table>	Value	Tcl constant	Description	-1	ls::REPORT_SUMMARY	A summary view measurement	N>=0	N/A	The TS index of the individual test case to find measurement
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TS	<p>The test server index of the test case that includes the measurement, or Summary indicator.</p> <p>Type: int Default: -1 (ls::REPORT_SUMMARY) Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>ls::REPORT_SUMMARY</td> <td>A summary view measurement</td> </tr> <tr> <td>N>=0</td> <td>N/A</td> <td>The TS index of the individual test case to find measurement</td> </tr> </tbody> </table>	Value	Tcl constant	Description	-1	ls::REPORT_SUMMARY	A summary view measurement	N>=0	N/A	The TS index of the individual test case to find measurement
Value	Tcl constant	Description								
-1	ls::REPORT_SUMMARY	A summary view measurement								
N>=0	N/A	The TS index of the individual test case to find measurement								
Value	<p>The value to use for comparison.</p> <p>Type: String Default: ""</p>									

Read-only Attributes:

None

Children:

None

TcStateCondition

A condition that compares a test case's state to a user specified value.

Writeable Attributes:

Writeable Attribute	Description														
Operator	<p>The operator to compare with the state.</p> <p>Type: Enum Default: EQ Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>EQ</td> <td>Equals ==</td> </tr> <tr> <td>NEQ</td> <td>Not Equals !=</td> </tr> <tr> <td>GT</td> <td>Greater Than ></td> </tr> <tr> <td>GTE</td> <td>Greater Than or Equals >=</td> </tr> <tr> <td>LT</td> <td>Less Than <</td> </tr> <tr> <td>LTE</td> <td>Less Than Or Equals <=</td> </tr> </tbody> </table>	Value	Description	EQ	Equals ==	NEQ	Not Equals !=	GT	Greater Than >	GTE	Greater Than or Equals >=	LT	Less Than <	LTE	Less Than Or Equals <=
Value	Description														
EQ	Equals ==														
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GTE	Greater Than or Equals >=														
LT	Less Than <														
LTE	Less Than Or Equals <=														

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State	<p>The state to compare to.</p> <p>Type: String Default: EQ Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>UNINITIALIZED</td> <td>Test case is idle.</td> </tr> <tr> <td>INITIALIZING</td> <td>Test case is initializing, resources are being allocated.</td> </tr> <tr> <td>INITIALIZED</td> <td>Test case is initialized, resources are allocated.</td> </tr> <tr> <td>STARTING</td> <td>Test case is starting, test is being started.</td> </tr> <tr> <td>STARTED</td> <td>Test case is started, sessions are starting.</td> </tr> <tr> <td>RUNNING</td> <td>Test case is running, all sessions are up.</td> </tr> <tr> <td>STOPPING</td> <td>Test case is stopping, sessions are coming down.</td> </tr> <tr> <td>STOPPED</td> <td>Test case is stopped.</td> </tr> <tr> <td>CLEANUP</td> <td>Test case is cleaning up.</td> </tr> </tbody> </table>	Value	Description	UNINITIALIZED	Test case is idle.	INITIALIZING	Test case is initializing, resources are being allocated.	INITIALIZED	Test case is initialized, resources are allocated.	STARTING	Test case is starting, test is being started.	STARTED	Test case is started, sessions are starting.	RUNNING	Test case is running, all sessions are up.	STOPPING	Test case is stopping, sessions are coming down.	STOPPED	Test case is stopped.	CLEANUP	Test case is cleaning up.
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CLEANUP	Test case is cleaning up.																				
TC	<p>The test case index that identifies the test case to monitor.</p> <p>Type: int Default: 0</p>																				
TS	<p>The test server index that identifies the test case to monitor.</p> <p>Type: int Default: 0</p>																				

Read-only Attributes:

None

Children:

None

TestStateOrStepCondition

A condition that compares a test session's state, or step, to a user specified value.

Writeable Attributes:

Writeable Attribute	Description														
Operator	<p>The operator to compare the state to the value.</p> <p>Type: Enum Default: EQ Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>EQ</td> <td>Equals ==</td> </tr> <tr> <td>NEQ</td> <td>Not Equals !=</td> </tr> <tr> <td>GT</td> <td>Greater Than ></td> </tr> <tr> <td>GTE</td> <td>Greater Than or Equals >=</td> </tr> <tr> <td>LT</td> <td>Less Than <</td> </tr> <tr> <td>LTE</td> <td>Less Than Or Equals <=</td> </tr> </tbody> </table>	Value	Description	EQ	Equals ==	NEQ	Not Equals !=	GT	Greater Than >	GTE	Greater Than or Equals >=	LT	Less Than <	LTE	Less Than Or Equals <=
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NEQ	Not Equals !=														
GT	Greater Than >														
GTE	Greater Than or Equals >=														
LT	Less Than <														
LTE	Less Than Or Equals <=														

StateOrStep	<p>The state or step to compare to.</p> <p>Type: String Default: EQ Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>INIT</td> <td>Test is starting an iteration; test cases are being initialized.</td> </tr> <tr> <td>STARTING</td> <td>Test cases have been initialized and are being started.</td> </tr> <tr> <td>STARTED</td> <td>Test cases have been started.</td> </tr> <tr> <td>RUNNING</td> <td>Test is running nominally.</td> </tr> <tr> <td>STOPPING</td> <td>Test has been stopped.</td> </tr> <tr> <td>STOPPED</td> <td>Test cases are being stopped</td> </tr> <tr> <td>CLEANUP</td> <td>Test cases are being cleaned up.</td> </tr> <tr> <td>WAIT_FOR_TRANSFERS</td> <td>Test has completed the last iteration and any TS generated files are being transferred to the TAS.</td> </tr> <tr> <td>FINAL</td> <td>Test has completed an iteration, all TCs are down.</td> </tr> <tr> <td>COMPLETE</td> <td>Test has completed normally.</td> </tr> <tr> <td>COMPLETE_ERROR</td> <td>Test has completed with system errors.</td> </tr> <tr> <td>{N}</td> <td>Step {N} of automation control.</td> </tr> <tr> <td>{N}_Delay</td> <td>In the delay of step {N}.</td> </tr> <tr> <td>{N}_WAITING</td> <td>In a wait step {N}.</td> </tr> </tbody> </table>	Value	Description	INIT	Test is starting an iteration; test cases are being initialized.	STARTING	Test cases have been initialized and are being started.	STARTED	Test cases have been started.	RUNNING	Test is running nominally.	STOPPING	Test has been stopped.	STOPPED	Test cases are being stopped	CLEANUP	Test cases are being cleaned up.	WAIT_FOR_TRANSFERS	Test has completed the last iteration and any TS generated files are being transferred to the TAS.	FINAL	Test has completed an iteration, all TCs are down.	COMPLETE	Test has completed normally.	COMPLETE_ERROR	Test has completed with system errors.	{N}	Step {N} of automation control.	{N}_Delay	In the delay of step {N}.	{N}_WAITING	In a wait step {N}.
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{N}_Delay	In the delay of step {N}.																														
{N}_WAITING	In a wait step {N}.																														

Read-only Attributes:

None

Children:

None

TsCpuCondition

A condition that compares a TC CPU % measurement to a user specified value.

Writeable Attributes:

Writeable Attribute	Description														
Name	<p>The specific name of the measurement to check.</p> <p>Type: Enum Default: AVG Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>AVG</td> <td>The generic AVG value</td> </tr> <tr> <td>Control AVG</td> <td>The AVG of all Control Cores</td> </tr> <tr> <td>Non-Control AVG</td> <td>The AVG of all Non-Control Cores</td> </tr> <tr> <td>GTE</td> <td>Greater Than or Equals >=</td> </tr> <tr> <td>LT</td> <td>Less Than <</td> </tr> <tr> <td>LTE</td> <td>Less Than Or Equals <=</td> </tr> </tbody> </table>	Value	Description	AVG	The generic AVG value	Control AVG	The AVG of all Control Cores	Non-Control AVG	The AVG of all Non-Control Cores	GTE	Greater Than or Equals >=	LT	Less Than <	LTE	Less Than Or Equals <=
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Control AVG	The AVG of all Control Cores														
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Operator	<p>The operator to compare the measurement to the value.</p> <p>Type: Enum Default: EQ Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>EQ</td> <td>Equals ==</td> </tr> <tr> <td>NEQ</td> <td>Not Equals !=</td> </tr> <tr> <td>GT</td> <td>Greater Than ></td> </tr> <tr> <td>GTE</td> <td>Greater Than or Equals >=</td> </tr> <tr> <td>LT</td> <td>Less Than <</td> </tr> <tr> <td>LTE</td> <td>Less Than Or Equals <=</td> </tr> </tbody> </table>	Value	Description	EQ	Equals ==	NEQ	Not Equals !=	GT	Greater Than >	GTE	Greater Than or Equals >=	LT	Less Than <	LTE	Less Than Or Equals <=
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GT	Greater Than >														
GTE	Greater Than or Equals >=														
LT	Less Than <														
LTE	Less Than Or Equals <=														
PerInterval	<p>When true, indicates that the measurement value compared should be per-interval, not cumulative.</p> <p>Type: Boolean Default: false</p>														
Process	<p>The Process Index within the test session that IDs the TS-Process, should be -1 for TS-Level AVG.</p> <p>Type: int Default: -1 Min: -1 Max: 8 (or max in test)</p>														
Ts	<p>The TS Index within the test session that IDs the test server.</p> <p>Type: int Default: 0</p>														
Value	<p>The value to use for comparison.</p> <p>Type: int Default: 0</p>														

Read-only Attributes:

None

Children:

None

RunLogCondition

A condition that checks Run Log Messages for matching strings.

Writeable Attributes:

Writeable Attribute	Description																
Operator	<p>The operator to compare the message to the value with.</p> <p>Type: Enum Default: Contains Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>StartsWith</td> <td>The message starts with specific string.</td> </tr> <tr> <td>Matches</td> <td>The message matches a regular expression.</td> </tr> <tr> <td>Contains</td> <td>The message contains a specific string.</td> </tr> <tr> <td>EndsWith</td> <td>The message ends with specific string.</td> </tr> <tr> <td>!Matches</td> <td>The message does not match a regular expression.</td> </tr> </tbody> </table>	Value	Description	StartsWith	The message starts with specific string.	Matches	The message matches a regular expression.	Contains	The message contains a specific string.	EndsWith	The message ends with specific string.	!Matches	The message does not match a regular expression.				
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Contains	The message contains a specific string.																
EndsWith	The message ends with specific string.																
!Matches	The message does not match a regular expression.																
LevelMask	<p>Integer mask value to select which Log Levels to check.</p> <p>Type: int Default: 0 (not allowed) Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Informational messages</td> </tr> <tr> <td>2</td> <td>Warning messages</td> </tr> <tr> <td>3</td> <td>Informational/Warning messages</td> </tr> <tr> <td>4</td> <td>Error messages</td> </tr> <tr> <td>5</td> <td>Informational/Error messages</td> </tr> <tr> <td>6</td> <td>Warning/Error messages</td> </tr> <tr> <td>7</td> <td>All messages</td> </tr> </tbody> </table>	Value	Description	1	Informational messages	2	Warning messages	3	Informational/Warning messages	4	Error messages	5	Informational/Error messages	6	Warning/Error messages	7	All messages
Value	Description																
1	Informational messages																
2	Warning messages																
3	Informational/Warning messages																
4	Error messages																
5	Informational/Error messages																
6	Warning/Error messages																
7	All messages																
Message	<p>The message string to compare, can include Java Regular Expressions. Leaving Message blank with "StartsWith" operator will match every message.</p> <p>Type: String Default: ""</p>																
Tc	<p>The TC Index within the test session that IDs the message source. -2=ANY (Set Tc=-2 and Ts=-2 to match messages from any source) -1=TAS (Set Tc=-1 and Ts=-1 to match messages from TAS)</p> <p>Type: int Default: 0-2 Default: -2 Min: -2 Max: (max TC index on the given TsGroup)</p>																
Ts	<p>The TsGroup Index within the test session that IDs the message source. -2=ANY (Set Tc=-2 and Ts=-2 to match messages from any source) -1=TAS (Set Tc=-1 and Ts=-1 to match messages from TAS)</p> <p>Type: int Default: 0-2 Default: -2 Min: -2 Max: (max TsGroup index in the test session)</p>																

Read-only Attributes:

None

Children:

None

PortCaptureConfiguration

The PortCaptureConfiguration object allows the user to define the Ethernet Ports and/or Wi-Fi Interfaces to be captured to PCAP file when the test starts, as well as monitor the status of these ports. The PortCaptureConfiguration objects must be generated first, with the GeneratePortCaptureConfiguration perform function, before they can be properly viewed/edited.

Filters are AND-ed together. If you set a Source and Destination IP Address, and a Protocol, all three must be matched for the packet to be captured.

Writeable Attributes:

Writeable Attribute	Description
DestIpFilter	The Destination (outer) IP Address to filter on. Filters are AND'ed together. ETH Ports only. Type: String (IPv4 or IPv6 format)
MaxPktSize	When set to > 0, limits the size of packets captured to specific bytes to reduce PCAP file size. ETH Ports only. Type: int 0-2000 (bytes)
NumMsgsOrKBytes	The number of Messages for type=snapshot or the number of megabytes for ETH type=circular or WLANs. For WLANs, it represents only the number of messages. Type: int 1-1000000 (msgs) 1-2000 (MB)
OnStart	Flag to enable the port capture to start when the test is started. Type: Boolean Default: false
PcapFilter	The BASE64 Encoded PCAP Filter, padded with =. Only applies to ETH/WWAN ports when PcapFilterEn is true. Should be a valid tcpdump style pcap filter. See https://www.tcpdump.org/manpages/pcap-filter.7.html Type: String
PcapFilterEn	Flag to enable or disable the PCAP Filter Text (PcapFilter) mode. Only applies to ETH/WWAN ports. When enabled, the Protocol and IP Filter are no longer valid. Type: Boolean Default: false
PcapFilterText	The PCAP Filter as a multi-lined string. Only applies to ETH/WWAN ports when PcapFilterEn is true. Should be a valid tcpdump style pcap filter. See https://www.tcpdump.org/manpages/pcap-filter.7.html . This is not reported in the generic ls::get, only the BASE64 Encoded PcapFilter is. Type: String

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Protocol	<p>The protocol to filter on. Filters are AND'ed together. ETH Ports only.</p> <p>Type: Enum Possible Values: "all", "ip", "icmp", "igmp", "ipip", "tcp", "egp", "pup", "udp", "idp", "tp", "dccp", "ipv6", "routing", "fragment", "rsvp", "gre", "esp", "ah", "icmpv6", "none", "dstopts", "mtp", "encap", "pim", "comp", "sctp", "udplite", "raw"</p>
SourceIpFilter	<p>The Source (outer) IP Address to filter on. Filters are AND'ed together. ETH Ports only.</p> <p>Type: String (IPv4 or IPv6 format)</p>
Trigger	<p>The Index of the Pass/Fail Criteria that triggers this capture to stop. This is optional and will be converted to a list in a future release. GUI allows a list of Triggers, Tcl API currently only allows a single Trigger.</p> <p>Type: int</p>
Type	<p>The Port Capture buffer type. Only applies to "ETH" ports.</p> <p>Type: Enum Possible Values: "continuous", "circular", "snapshot"</p>
WlanChannel	<p>The channel to listen on in Sniffer Mode.</p> <p>Type: Enum (Integers) Possible Values: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165</p>
WlanCntl	<p>Indicates if Control subtype messages are captured. At least one of WlanCntl, WlanMgmt, or WlanData must be selected as true.</p> <p>Type: Boolean Default: false</p>
WlanData	<p>Indicates if Data subtype messages are captured. At least one of WlanCntl, WlanMgmt, or WlanData must be selected as true.</p> <p>Type: Boolean Default: false</p>

<p>WlanInclude</p>	<p>The list of subtype data to include in the capture. Mutually exclusive from WlanExclude, WlanExclude must be "" (empty string).</p> <p>Type: Comma separated list of enum values Possible Values (data subtypes): "qos-data-cf-ack-poll", "qos-data", "data-cf-ack-poll", "cf-poll", "null", "qos-data-cf-poll", "data-cf-poll", "data-cf-ack", "qos-null", "qos-cf-poll", "cf-ack", "data", "qos-cf-ack-poll", "qos-data-cf-ack", "cf-ack-poll". Possible Values (mgmt subtypes): "death", "probe-req", "reassoc-req", "auth", "reassoc-resp", "beacon", "disassoc", "assoc-resp", "atim", "assoc-req", "probe-resp", "action" Possible Values (cntl subtypes): "cf-end", "block-ack-req", "block-ack", "cts", "ack", "cf-end-ack", "rts", "ps-poll"</p>
<p>WlanExclude</p>	<p>The list of subtype data to exclude from the capture. Mutually exclusive from WlanInclude, WlanInclude must be "" (empty string).</p> <p>Type: Comma separated list of enum values Possible Values (data subtypes): "qos-data-cf-ack-poll", "qos-data", "data-cf-ack-poll", "cf-poll", "null", "qos-data-cf-poll", "data-cf-poll", "data-cf-ack", "qos-null", "qos-cf-poll", "cf-ack", "data", "qos-cf-ack-poll", "qos-data-cf-ack", "cf-ack-poll" Possible Values (mgmt subtypes): "death", "probe-req", "reassoc-req", "auth", "reassoc-resp", "beacon", "disassoc", "assoc-resp", "atim", "assoc-req", "probe-resp", "action" Possible Values (cntl subtypes): "cf-end", "block-ack-req", "block-ack", "cts", "ack", "cf-end-ack", "rts", "ps-poll"</p>
<p>WlanMac</p>	<p>The MAC Address to filter on. Filters are AND'ed together.</p> <p>Type: String (MAC Address format)</p>
<p>WlanMgmt</p>	<p>Indicates if Management subtype messages are captured. At least one of WlanCntl, WlanMgmt, or WlanData must be selected as true.</p> <p>Type: Boolean Default: false</p>
<p>WlanWidth</p>	<p>The width of the channel in MHz to capture, valid in Sniffer Mode only.</p> <p>Type: Enum (Integers) Possible Values (Depends upon Channel as well): 20, 40, 80</p>
<p>levEnabled</p>	<p>The Trigger to enable the leValidation, can only be set when onStart is true (ETH Port only)</p> <p>Type: Boolean Default: false</p>

Read-only Attributes:

Read-only Attribute	Description
Active	Indicates if the port is active but is only updated for the PortCaptureConfiguration objects in the running TestSession object. Type: Boolean Default: false
Port	The ETH or WLAN Interface name Type: String
TsId	The Test Server ID in the TAS database Type: int
TsIndex	The Test Server Index within the Test Session Type: int
TsName	The Test Server Name Type: String
WlanSnifferMode	Indicates if the port is known to only be available for SnifferMode. Wlan Ports only. Type: Boolean

Children:

Child	Description
leValidation	The leValidation description Object. Only configurable when levEnabled is true (ETH Port Only) Type: AutoCreated

leValidationInfo

This object represents the configuration of IE/SBI Validation

Writeable Attributes:

Writeable Attribute	Description
SbiVersion	<p>The SBI version, the value range of sbiVersion will be dynamically generated according to the currently configured protocols. When the user fills in a value that is not in the generated value range, the error message will indicate the currently supported value to the user. The dynamic generated value range will be the cross set of protocols support version.</p> <p>Type: String Default: AutoCreated</p>

Read-only Attributes:

Read-only Attribute	Description
SbiCompliance	<p>Flag Indicates if the port is supporting the Sbi Validation. In addition, SbiCompliance also indicates if the Compliance check for SBI(Http2) protocol will perform or not.</p> <p>Type: Boolean</p>
leComplianceProtocols	<p>List of the IE Protocols, those will perform Compliance check</p> <p>Type: AutoCreated</p>

Children:

Child	Description										
SbiPort	<p>List of Ports that SBI Validation will use. Ports are represented by String Array. User can access each value within the child by SbiPort(X) -Value (The X indicates the index of SBI Port in the List)</p> <p>Type: UserCreated Range: 0 - 65535</p>										
leValidation	<p>List of IE Protocol Validation Rules. Rules are represented by String Array, User can access each Item within the rule by -ValueX (The X indicates the index of Rule List)</p> <p>Rule Value Description:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Value1</td> <td>Protocol</td> </tr> <tr> <td>Value2</td> <td>Message</td> </tr> <tr> <td>Value3</td> <td>IE/Field</td> </tr> <tr> <td>Value4</td> <td>Expected Value</td> </tr> </tbody> </table> <p>Type: UserCreated</p>	Value	Description	Value1	Protocol	Value2	Message	Value3	IE/Field	Value4	Expected Value
Value	Description										
Value1	Protocol										
Value2	Message										
Value3	IE/Field										
Value4	Expected Value										

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SbiValidation	<p>List of SBI Protocol Validation Rules. Rules are represented by String Array, User can access each Item within the rule by -ValueX (The X indicates the index of Rule List):</p> <p>Rule Value Description:</p> <table border="1"><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>Value1</td><td>SBI Service</td></tr><tr><td>Value2</td><td>Request URI</td></tr><tr><td>Value3</td><td>Method</td></tr><tr><td>Value4</td><td>REQ/RES</td></tr><tr><td>Value5</td><td>Response Status</td></tr><tr><td>Value6</td><td>IE/Field Path</td></tr><tr><td>Value7</td><td>IE/Field Type</td></tr><tr><td>Value8</td><td>Expected Value</td></tr></tbody></table>	Value	Description	Value1	SBI Service	Value2	Request URI	Value3	Method	Value4	REQ/RES	Value5	Response Status	Value6	IE/Field Path	Value7	IE/Field Type	Value8	Expected Value
Value	Description																		
Value1	SBI Service																		
Value2	Request URI																		
Value3	Method																		
Value4	REQ/RES																		
Value5	Response Status																		
Value6	IE/Field Path																		
Value7	IE/Field Type																		
Value8	Expected Value																		
	<p>Type: UserCreated</p>																		

Favorites

This object represents a group of measurements on the Favorites tab.

Writeable Attributes:

None

Read-only Attributes:

None

Children:

Child	Description
MeasurementId	List of measurements that are included on the Favorites tab. Type: UserCreated Multiplicity: 0-200

Chart

This object represents a group of measurements in a chart.

Writeable Attributes:

None

Read-only Attributes:

None

Children:

Child	Description
Chart1	List of measurements that are included in the Graph/Chart. Type: UserCreated Multiplicity: 0-8

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HttpPostInfo

Configuration of the HTTP Post of Favorite Measurements.

Writeable Attributes:

Writeable Attribute	Description
Password	The password for HTTP Basic Auth. Only required if Username is set. Type: String
Target	The value for the target field in the JSON message that is POST-ed. This is a required field, usually associated with a target table in the database. Type: String
Url	The URL to send the POST to. Must be http or https only, and must include path, and at least one / after the host, For Example: http://1.1.1.1/, not http://1.1.1.1. Type: String
Username	The username for HTTP Basic Auth. Not required, leave empty for no Auth. Type: String

Read-only Attributes:

None

Children:

None

CsProfile

The CsProfile object specifies a CloudSure Impairment Profile.

Writeable Attributes:

Writeable Attribute	Description
Environment	The name of the environment/credentials to use. Type: String Default: ""
Namespace	The namespace to find workloads in. Type: String Default: ""
Workloads	The list of names of Deployments and StatefulSets that are to have their PODs deleted from. Type: CSV-String Default: ""

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DeleteMode	<p>Sets the Mode for the CloudSure Impairment, whether it is manually started or automatically started when Test Session reaches RUNNING state.</p> <p>Type: String-Enum Possible Values:</p> <table border="1"><thead><tr><th data-bbox="597 390 672 422">Value</th><th data-bbox="922 390 1068 422">Description</th></tr></thead><tbody><tr><td data-bbox="597 422 672 453">Count</td><td data-bbox="922 422 1068 453">Delete a number of PODs</td></tr><tr><td data-bbox="597 453 672 485">Percentage</td><td data-bbox="922 453 1068 485">Delete a percentage of PODs</td></tr></tbody></table>	Value	Description	Count	Delete a number of PODs	Percentage	Delete a percentage of PODs
Value	Description						
Count	Delete a number of PODs						
Percentage	Delete a percentage of PODs						
DeleteValue	<p>Either the number of PODs to delete or the percentage of PODs to delete depending upon the DeleteMode.</p> <p>Type: int 0-100 (%) or 0 to 65535 (count)</p>						

Read-only Attributes:

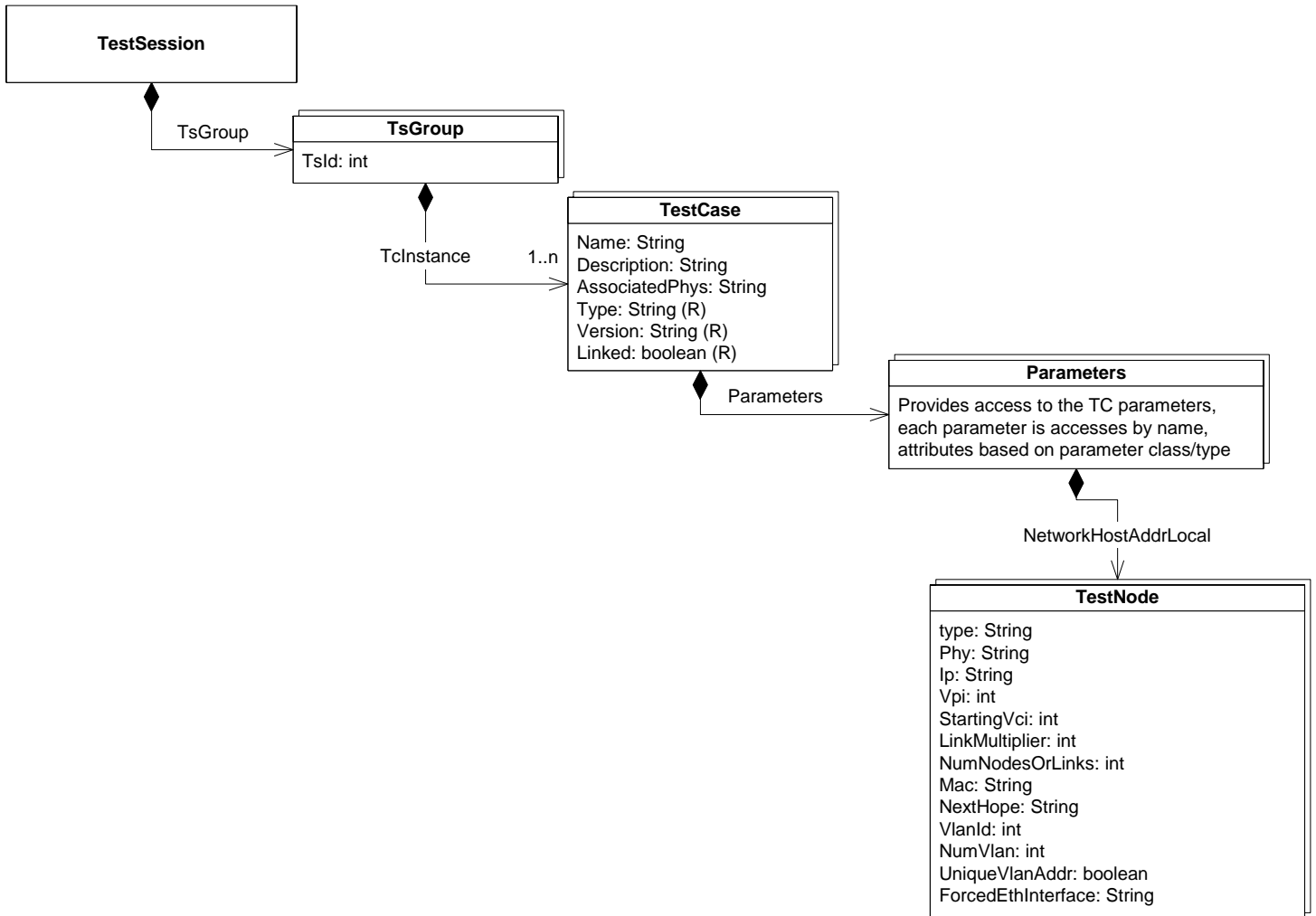
None

Children:

None

Test Case

Overview



Tc (TestCase)

The Tc object encapsulates a test case instance. A Tc object cannot be created with the `ls::create` command. Instead, a Tc must be retrieved from the TAS using the `ls::retrieve TestCase` command. You can either retrieve a new test case instance by opening a test case from the Basic system library, or you can retrieve a user saved test case from another library. A Tc object ultimately belongs as a child of a TsGroup object, which can be accomplished by using `ls::config TS_GROUP_HANDLE -children-Tc TC_HANDLE`.

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Tcl API Object and Perform Function Reference

Examples:

```
### Open a new GGSN Node test case instance and add it to the test
set tc [ls::retrieve TestCase -systemLibraryName Basic "GGSN Node"]
ls::config $test.TsGroup -children-Tc $tc
```

```
### Open a saved GGSN Nodal test case instance and add it to the test
### as a linked test case instance
set tc [ls::retrieve TestCase -userLibraryName user1 "GGSN Nodal 1000sess"]
ls::config $tc -linked true
ls::config $test.TsGroup -children-Tc $tc
```

Test case instances can be saved as user saved test cases using the `ls:save` command. To save a custom test case, you must first properly set the Name and Library attributes then call the `ls::save` command. For example:

```
## Set the name and library, then save the test case
set lib [ls::query LibraryInfo -userLibraryName me ]
ls::config $test.TsGroup.Tc -Name "GGSN Nodal 1000 MNs" -Library [ls::get
$lib -Id]
ls::save $test.TsGroup(0).Tc(0)
```

A test case should be validated within a test session before being saved. Marking a test case instance as linked will force the saved test case to be reloaded when the test session is retrieved. For example, if multiple test sessions all link the same saved test case, changing the saved test case will affect all of the test sessions. If the test case instance is not marked as linked, then there is no relation with the saved test case anymore; when the test session is retrieved, the test case instance data that was last saved in the test session is retrieved.

Writeable Attributes:

Writeable Attribute	Description
AbortAfterS	Configurable timer to abort the entire test session if the test case does not reach the RUNNING state. Time to wait before aborting the test session. Set to 0 to disable, set non-zero to enable the abort timer. Type: int Default: 0 Min: 0 Max: 65535

<p>AbortStartTimerAfter</p>	<p>Indicate which state to start the AbortAfterS timer. Test session will be aborted if the test case doesn't reach RUNNING state in expected time from the selected starting states.</p> <p>Type: String Possible Values:</p> <table border="1" data-bbox="573 401 1490 558"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>START</td> <td>Start the timer when the TC reports either STARTING or STARTED state.</td> </tr> <tr> <td>INIT</td> <td>Start the timer when the TC reports either INITIALIZING or INITIALIZED state.</td> </tr> </tbody> </table>	Value	Description	START	Start the timer when the TC reports either STARTING or STARTED state.	INIT	Start the timer when the TC reports either INITIALIZING or INITIALIZED state.
Value	Description						
START	Start the timer when the TC reports either STARTING or STARTED state.						
INIT	Start the timer when the TC reports either INITIALIZING or INITIALIZED state.						
<p>AssociatedPhys</p>	<p>The names of any phys not used in the test case that still need to be associated with this test case for port reservation feature. They should be listed with a single space between them, e.g. "eth1 eth2 eth5"</p> <p>Type: String Default: ""</p>						
<p>Description</p>	<p>Description of the test case instance.</p> <p>Type: String, up to 1024 ASCII characters. Default: { The default description for the Basic test case (Type) }</p>						
<p>Keywords</p>	<p>Specific words that identify the test case.</p> <p>Type: Custom String: words separated by spaces, that contain up to 32 letters and numbers. Example: keyword1 KEYWORD2</p>						
<p>Library</p>	<p>The ID of the library the test case is, or will be, stored in on the TAS.</p> <p>Type: int Default: 0</p>						
<p>Linked</p>	<p>Indicates if the test case is linked and should be reloaded from the saved test case each time the test session is opened. This is only valid when the test case instance represents a user-saved test case.</p> <p>Type: Boolean Default: false</p>						
<p>Name</p>	<p>The name of the test case instance. Avoid using [and] characters because in combined test case strings we use a format like this: Name [TYPE], e.g. AMF2 [AMF Node].</p> <p>Type: String (Valid Filename characters/format up to 64 characters) Default: ""</p>						
<p>VisionWorksIntentOfTest</p>	<p>Sets this test case's intent of the test for InTouch to display VisionWorks results. An Empty String indicates to use the default VisionWorksIntentOfTest from the TestSession ReportOptions object. Refer to the Landslide application online Help and the VisionWorks documentation for more information.</p> <p>Log in to the CSC with your username and password and type "VisionWorks" in the Search KB box. Click Search KB or press Enter.</p> <p>Type: Custom String Default: "" (empty string) Possible Values: "",Enterprise, Data, VoLTE, SMS-MMS, Network-Latency, OTT-Apps, OTT-Video, NB-IOT, Emerg-Svcs</p>						

Read-only Attributes:

Read-only Attribute	Description
FullState	<p>The full current state of the test case, including any RUNNING substate information, e.g. RUNNING:1#1:RUNNING. This is only valid when running in a test and there is substate information being reported.</p> <p>For Sequencer test cases, substate information includes [CurrentCommandIndex]#[NumberOfCommandsExecuted]. Refer to Landslide online Help for details about substate information.</p> <p>Type: String</p>
LastSavedDate	<p>The date the test session was last saved.</p> <p>Type: Formatted String Example: Wed Dec 31 19:00:00 EST 1969</p>
Progress	<p>The current progress percentage of the test case. This is only valid when running in a test.</p> <p>Type: int</p>
ProgressMessage	<p>The current progress message of the test case. This is only valid when running in a test.</p> <p>Type: String</p>
SequencerCommandCount	<p>The number of Sequencer Commands that have executed. This is only valid if the test case is reporting substate information and is in the middle of executing the sequencer.</p> <p>Type: int</p>
SequencerCommandIndex	<p>The index of the currently executing Sequencer Command. This is only valid if the test case is reporting substate information and is in the middle of executing the sequencer.</p> <p>Type: int</p>

<p>SequencerState</p>	<p>The current state of the test case command sequencer. This is only valid and reported when the test case is configured with a sequencer and is in the running state.</p> <p>Type: String Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>RUNNING</td> <td>The sequencer is running normally, the SequencerCommandIndex indicates the currently executing command index.</td> </tr> <tr> <td>PAUSING</td> <td>The sequencer was paused by the user and is finishing the current command before entering the PAUSED state. The SequencerCommandIndex indicates the next command that will not be executed until the sequencer is resumed.</td> </tr> <tr> <td>PAUSED</td> <td>The sequencer is paused. The SequencerCommandIndex indicates the next command that will not be executed until the sequencer is resumed.</td> </tr> <tr> <td>WAITING</td> <td>The sequencer is in a wait command, waiting for the user to continue. The SequencerCommandIndex indicates the currently executing wait command index.</td> </tr> <tr> <td>VOID or ""</td> <td>There is no sequencer defined or running.</td> </tr> </tbody> </table>	Value	Description	RUNNING	The sequencer is running normally, the SequencerCommandIndex indicates the currently executing command index.	PAUSING	The sequencer was paused by the user and is finishing the current command before entering the PAUSED state. The SequencerCommandIndex indicates the next command that will not be executed until the sequencer is resumed.	PAUSED	The sequencer is paused. The SequencerCommandIndex indicates the next command that will not be executed until the sequencer is resumed.	WAITING	The sequencer is in a wait command, waiting for the user to continue. The SequencerCommandIndex indicates the currently executing wait command index.	VOID or ""	There is no sequencer defined or running.
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WAITING	The sequencer is in a wait command, waiting for the user to continue. The SequencerCommandIndex indicates the currently executing wait command index.												
VOID or ""	There is no sequencer defined or running.												
<p>State</p>	<p>The current state of the test case not including any substate information. This is only valid when running in a test.</p> <p>Type: String</p>												
<p>Type</p>	<p>The test case type, i.e. the name of the test case from the Basic library</p> <p>Type: String</p>												
<p>UeInfoCriteriaStatus</p>	<p>The overall status of any pass/fail criteria. This will be the logical AND-ing of the status of all UeInfoCriterion defined in the test case.</p> <p>Type: String Possible Values (Not a complete list):</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>Test is initializing or not applicable.</td> </tr> <tr> <td>PENDING</td> <td>None of the Criteria have changed yet, test not complete.</td> </tr> <tr> <td>PASSED</td> <td>At least one Criterion has PASSED, and none are FAILED.</td> </tr> <tr> <td>FAILED</td> <td>At least one of the Criteria has FAILED.</td> </tr> </tbody> </table>	Value	Description	N/A	Test is initializing or not applicable.	PENDING	None of the Criteria have changed yet, test not complete.	PASSED	At least one Criterion has PASSED, and none are FAILED.	FAILED	At least one of the Criteria has FAILED.		
Value	Description												
N/A	Test is initializing or not applicable.												
PENDING	None of the Criteria have changed yet, test not complete.												
PASSED	At least one Criterion has PASSED, and none are FAILED.												
FAILED	At least one of the Criteria has FAILED.												
<p>Version</p>	<p>The version of the test case. If upgraded properly, this should match the test server version.</p> <p>Type: String</p>												

Children:

Child	Description
CsvCriterion	<p>CSV Pass/Fail Criteria</p> <p>Type: UserCreated Multiplicity: 0-300</p>
Parameters	<p>The object that provides access to all the test case parameters.</p> <p>Type: AutoCreated Multiplicity: 1</p>
UeInfoConfig	<p>The configuration of the UE informational reporting and monitoring feature. This only applies to a very limited set of test cases that support the feature in certain configurations and requires a license.</p> <p>Type: AutoCreated Multiplicity: 1</p>
UeInfoCriterion	<p>UE Info Pass/Fail Criteria.</p> <p>Type: UserCreated Multiplicity: 0-300</p>
VwTagsInfo	<p>The object that provides access to the VisionWorks Tags. Only used for VisionWorks.</p> <p>Type: AutoCreated Multiplicity: 1</p>

Parameters

The Parameters object provides access to its parent test case's parameters. The Parameters object is different from all of other objects in the Tcl API. There are no attributes, only child objects that represent each parameter in the test case. The name of each child object is the internal name of the test case parameter. That is, not the name of the object/type and not the name of the parameter as seen in the GUI, but rather the name of the internal variable that is used by Landslide to represent the parameter. For example, this is how to create a StartRate parameter set to 1000 sessions per second:

```
ls::create StartRate -under $test.TsGroup.Tc.Parameters -Value 1000.0
```

If the parameter is already created, you just use the config command:

```
ls::config $test.TsGroup.Tc.Parameters.StartRate -Value 1000.0
```

The names and details of the test case parameters are located in the online Help (not in this document). The URL of the page for a given parameter can be obtained from the Tcl API, using the ls::help command (syntax: ls::help TC_HANDLE TC_PARAMETER_NAME). Also, the Tcl variable for a given parameter can be obtained from the GUI, by pressing F2 while focused in a test case field. The online Help (will) includes the information for each test case parameter to determine how to properly set the value. **Note:** In lieu of using the online Help, the recommended way to learn how to properly set up a test case, is to first configure a test in the GUI, save it, and then open it in the Tcl API to investigate the objects.

```
## Open a saved test and investigate the test case parameters
```

```
% set test1 [ls::retrieve TestSession -userLibraryName tester "My Saved Test Session"]
```

```
% ls::query Parameters $test1.TsGroup.Tc
```

```
{BillingEn {{Value false} {Class Basic}}} {ChargGateAddr {{Value 5.6.7.8} {Class Basic}}} {ChargGate
AddrEn {{Value true} {Class Basic}}} {ChargId {{Value 1} {Class Basic}}} {ContQosUpEn {{Value false}
{Class Basic}}} {DirectTunnelEn {{Value no} {Class Basic}}} {EchoTime {{Value 0} {Class Basic}}} {G
gsnNodeCtlAddr {{Type eth} {Phy eth1} {Ip 10.2.2.61} {Vpi 0} {StartingVci 0} {LinkMultiplier 1} {Num
LinksOrNodes 1} {Mac {} {NextHop {} {VlanId 0} {NumVlan 1} {UniqueVlanAddr false} {ForcedEthInterf
ace {} {Class TestNode}}} {GgsnNodeCtlAddrErrlnj {{Value 0} {Class Basic}}} {GgsnNodeUsrAddrEn
{{Va
lue false} {Class Basic}}} {GtpGgsnCfGFileEn {{Value false} {Class Basic}}} {GtpGgsnInitDeletePdpCon
text {{Value 0} {Class Basic}}} {GtpUseGsnSignalingAddr {{Value 0} {Class Basic}}} {GtpVersion {{Val
ue 1} {Class Basic}}} {GtpcTunnelEndptId {{Value 1000000} {Class Basic}}} {GtpuTunnelEndptId {{Value
2000000} {Class Basic}}} {IncApnRestriction {{Value false} {Class Basic}}} {IncCommonFlags {{Value
false} {Class Basic}}} {IncPcoOpt {{Value none} {Class Basic}}} {L2TPVPN {{Value false} {Class Basic
}}} {MobileNodeAddrPool {{Value 199.248.0.1} {Class Basic}}} {N3Attempts {{Value 5} {Class Basic}}}
{NumMs {{Value 10000} {Class Basic}}} {PdpAddressType {{Value dynamic} {Class Basic}}} {PdpContEn
{{
Value false} {Class Basic}}} {PdpType {{Value ipv4} {Class Basic}}} {PrimPdpContextsPerMs {{Value 1}
{Class Basic}}} {QosDetail_0 {{Value false} {Class Basic}}} {QosDetail_1 {{Value false} {Class Basi
c}}} {QosUpdateTime {{Value 1} {Class Basic}}} {QosUpdatesEn {{Value false} {Class Basic}}} {RelayAg
entEn {{Value false} {Class Basic}}} {SecPdpContextsPerPrime {{Value 0} {Class Basic}}} {SgsnV0CtlAd
drPort {{Value 3386} {Class Basic}}} {SgsnV0UsrAddrPort {{Value 3386} {Class Basic}}} {SgsnV1CtlAddr
Port {{Value 2123} {Class Basic}}} {SgsnV1UsrAddrPort {{Value 2152} {Class Basic}}} {SutSgsn {{Name
SUT57_2.57} {Class Sut}}} {T3Time {{Value 20} {Class Basic}}} {TeardownIndicator {{Value false} {Cla
ss Basic}}} {TestType {{Value GGSN} {Class Basic}}} {TrafficMtu {{Value 1400} {Class Basic}}}
%
```

You can also use the `ls::perform SaveAsTcl` function to output the Tcl commands required to configure your test.

```
% ls::perform SaveAsTcl $test1 D:/test1.tcl
%
```

This is a partial listing of the file:

```
...
### TSO tsID: 1
set tss_ [ls::create TsGroup -under $test_ -tsId 1 ]
set tc_ [ls::retrieve testcase -libraryId -3 "GGSN Node"]
ls::config $test_.TsGroup(0) -children-Tc $tc_
ls::config $tc_ -Library 17640 -Name "GGSN Node"
ls::config $tc_ -Description "GGSN Node."
ls::config $tc_ -Keywords "capacity GGSN GTP PPP SGSN "
ls::config $tc_ -Linked false
ls::config $tc_ -AssociatedPhys ""
set p_ [ls::get $tc_ -children-Parameters(0)]
ls::create BillingEn -under $p_ -Value "false"
ls::create ChargGateAddr -under $p_ -Value "5.6.7.8"ls::create ChargGateAddrEn -under
$p_ -Value "true"
ls::create ChargId -under $p_ -Value "1"
ls::create ContQosUpEn -under $p_ -Value "false"
ls::create DirectTunnelEn -under $p_ -Value "no"
ls::create EchoTime -under $p_ -Value "0"
ls::create -TestNode-GgsnNodeCtlAddr -under $p_ -Type "eth" -Phy "eth1" -Ip
"10.2.2.61" -Vpi 0 -StartingVci 0 -LinkMultiplier 1 -NumLinksOrNodes 1 -Mac "" -
NextHop "" -VlanId 0 -NumVlan 1 -UniqueVlanAddr false -ForcedEthInterface ""
ls::create GgsnNodeCtlAddrErrInj -under $p_ -Value "0"
ls::create GgsnNodeUsrAddrEn -under $p_ -Value "false"
ls::create GtpGgsnCfgFileEn -under $p_ -Value "false"
ls::create GtpGgsnInitDeletePdpContext -under $p_ -Value "0"
ls::create GtpUseGsnSignalingAddr -under $p_ -Value "0"
ls::create GtpVersion -under $p_ -Value "1"
ls::create GtpTunnelEndptId -under $p_ -Value "1000000"
ls::create GtpuTunnelEndptId -under $p_ -Value "2000000"
ls::create IncApnRestriction -under $p_ -Value "false"
ls::create IncCommonFlags -under $p_ -Value "false"
ls::create IncPcoOpt -under $p_ -Value "none"
ls::create L2TPVPN -under $p_ -Value "false"
ls::create MobileNodeAddrPool1 -under $p_ -Value "199.248.0.1"
ls::create N3Attempts -under $p_ -Value "5"
ls::create NumMs -under $p_ -Value "10000"
ls::create PdpAddressType -under $p_ -Value "dynamic"
ls::create PdpContEn -under $p_ -Value "false"
ls::create PdpType -under $p_ -Value "ipv4"
ls::create PrimPdpContextsPerMs -under $p_ -Value "1"
ls::create QosDetail_0 -under $p_ -Value "false"
ls::create QosDetail_1 -under $p_ -Value "false"
ls::create QosUpdateTime -under $p_ -Value "1"
ls::create QosUpdatesEn -under $p_ -Value "false"
ls::create RelayAgentEn -under $p_ -Value "false"
ls::create SecPdpContextsPerPrime -under $p_ -Value "0"
ls::create SgsnV0CtlAddrPort -under $p_ -Value "3386"
ls::create SgsnV0UsrAddrPort -under $p_ -Value "3386"
```

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```
ls::create SgsnVlCtlAddrPort -under $p_ -Value "2123"  
ls::create SgsnVlUsrAddrPort -under $p_ -Value "2152"  
ls::create -Sut-SutSgsn -under $p_ -Name "SUT57_2.57"  
ls::create T3Time -under $p_ -Value "20"  
ls::create TeardownIndicator -under $p_ -Value "false"  
ls::create TestType -under $p_ -Value "GGSN"  
ls::create TrafficMtu -under $p_ -Value "1400"
```

Another option is to run the `ls::perform Validate` function to have the upgrade/validation fill out as much information as possible.

In many cases, the values stored internally do not match the values seen in the GUI. For example, a combo box in the GUI may display a list of names, but the internal representation could be the index into the list of names, or a special value for each name. The online help will eventually have the conversion information. A select few parameters are actually complex objects in themselves. This includes parameters that specify which test server ports and IP ranges are being used (`TestNode`), which SUTs are being used (`Sut`), and the list of DMFs being used (`Dmf`). The following sections explain each parameter class.

When creating a parameter that is of a certain parameter class, you indicate the class by prefixing the parameter name with a dash (-) followed by the parameter class name and another dash (-). For example:

```
### Create the Remote Networks Host address list, an "Array" parameter class  
parameter  
ls::create -Array-NetworkHostAddrRemote -under $test.TsGroup.Tc.Parameters  
ls::create ArrayItem -under  
$test.TsGroup.Tc.Parameters.NetworkHostAddrRemote" \  
-Value "0.0.0.0"
```

After you have set all of your parameters, you can validate their values by performing the `Validate` function:

```
% ls::perform Validate -TestSession $test  
Valid  
% ls::get $test -ErrorsAndWarnings  
{ } { } { } Valid-Ready-To-Run-Or-Save  
%
```

Here we see a successful validation, as the `Validate` function returns "Valid" and the `ErrorsAndWarnings` has "Valid-Ready-To-Run-Or-Save" in the last item in its list. If the validation fails, it would have returned "Invalid" and the invalid parameters would be listed in the `ErrorsAndWarnings` list.

The `Parameters` object does not have any attributes.

Writeable Attributes:

None

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Read-only Attributes:

None

Children:

Child	Description
<PARAMETER-NAME>	The parameter objects. Type: UserCreated Multiplicity: 1-n

Parameter Class: Basic

The majority of test case parameters are of this class. The only attribute is the Value which is just a string. The string can represent an integer, float, or enum depending upon the parameter. The ls::perform Validate function will validate all the test case parameters for you.

Example:

```
ls::create Sessions -under $p_ -Value 5000
```

Writeable Attributes:

Writeable Attribute	Description
Value	The value for this parameter Type: String Default: ""

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: Basic

Children:

None

Special Parameter - CommandSequence

The CommandSequence parameter is a Basic Class parameter that defines the Test Case Sequencer Commands. Each On Demand Command (ODC) in the sequence provides its own Tcl API help via the F2 hotkey on the ODC editor dialog. This table provides information about the other built-in commands. An example follows the table.

Command	Syntax
Delay	{ Delay <TIME_SECONDS> } Example: { Delay 5 }
ControlAttero	{ ControlAttero { "op=Connect" "hostip=<CLIENT_ADDR" "ip=<DEVICE_ADDR" } } { ControlAttero { "op=Start" "ip=<DEVICE_ADDR">"profile=<PROFILE_NAME>" } } { ControlAttero { "op=Stop" "ip=<DEVICE_ADDR" "profile=<PROFILE_NAME>" } } { ControlAttero { "op=Disconnect" "ip=<DEVICE_ADDR" } }
LoopEnd	{ LoopEnd <NUMBER_OF_LOOPS> } Example: { LoopEnd 5 } This executes the sequence 6 times, loops 5 times.
LoopStart	{ LoopStart }
OnDemandCommand	OnDemandCommand { ODC_NAME { ODC_ARGS } } ODC_NAME and ODC_ARGS can be found via F2 on the ODC edit dialog for the given ODC.
StartDmf	{ StartDmf <RATE> <DMF_MAINFLOW_INDEX > } Example: { StartDmf 550.0 0 }
StopDmf	{ StopDmf 10000.0 <DMF_MAINFLOW_INDEX> } Example: { StopDmf 10000.0 2 }
StartTraffic	{ StartAllTraffic <RATE> } Example: { StartAllTraffic 2000.0 }
StopTraffic	{ StopAllTraffic 10000 } Example: { StopAllTraffic 10000.0 }
SyncPoint	{ SyncPoint <NAME> } Example: { SyncPoint Reached_Steady_State }
Wait	{ Wait }

Example:

```
Is::create CommandSequence -under $p_ -Value "\{ \{ OnDemandCommand \{ ControlBearer
\{ \"Attach\" \"10.0\" \"1\" \"10\" \"0\" \"\" \"0\" \"1\" \} \} \{ OnDemandCommand \{ ControlBearer
\{ \"PdnConnect\" \"10.0\" \"1\" \"10\" \"2\" \"2\" \"0\" \"\" \"0\" \"1\" \} \} \{ Delay 15 \}
\{ OnDemandCommand \{ ControlBearer \{ \"S1Release\" \"1.0\" \"1\" \"10\" \} \} \{ Delay 15 \}
\{ OnDemandCommand \{ ControlBearer \{ \"Detach\" \"10.0\" \"1\" \"10\" \} \} \{ Delay 15 \}
\{ OnDemandCommand \{ ControlBearer \{ \"EmergAttach\" \"10.0\" \"1\" \"10\" \} \} \}
\{ OnDemandCommand \{ ControlBearer \{ \"EmergPdnConnect\" \"1.0\" \"1\" \"10\" \"2\" \"2\" \} \} \}
```

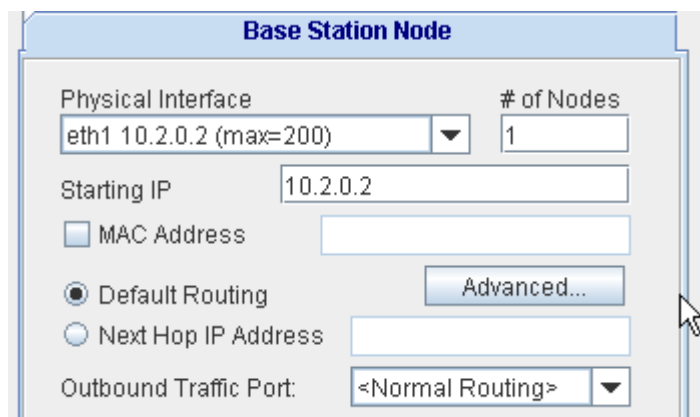
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```
\{ Delay 15 \} \{ OnDemandCommand \{ ControlBearer \{ \"S1Release\" \"1.0\" \"1\" \"10\" \} \} \{ Delay 15 \} \{ OnDemandCommand \{ ControlBearer \{ \"Detach\" \"10.0\" \"1\" \"10\" \} \} \} \}; #Test Activity - Command Sequence
```

Parameter Class: TestNode

The TestNode class of parameters covers all parameters that specify which test server ports and IP ranges are used by the protocols and interfaces within a test case. In the GUI, a TestNode object is usually represented as shown:



Example:

```
ls:create -TestNode-GgsnNodeCtlAddr -under $p_ -Type "eth" -Phy "$NODE_TS_PHY" \
  -Ip "$NODE_START_IP" -Vpi 0 -StartingVci 0 -LinkMultiplier 1 \
  -NumLinksOrNodes 1 -Mac "" -NextHop "" -VlanId 0 -NumVlan 1 \
  -UniqueVlanAddr false -ForcedEthInterface ""
```

Writeable Attributes:

Writeable Attribute	Description
InnerVlanId	The Inner VLAN id. The default value disables Inner VLAN. This attribute is only valid when VLAN is valid and the normal VlanId > 0 Type: int Default: 0 Min: 0 Max: 4095
Ip	The starting IP address for the parameter Type: String Default: ""
ForcedEthInterface	The interface that outbound traffic is forced out of. The default empty string disables this feature. Otherwise the value must be the name of a valid Ethernet port. Type: String Default: ""
LinkMultiplier	DEPRECATED, NO LONGER USED

Mac	<p>The MAC address. The default empty string disables this feature.</p> <p>Type: Formatted String, valid MAC address, 6 pairs of hex digits separated by :, e.g. a1:22:33:11:0f:32 Default: ""</p>						
Mtu	<p>The MTU size. Only applies to certain test nodes. Refer to the GUI or online Help to see if the Mtu attribute applies to the specific parameter. Set or leave the default value, if you are not sure.</p> <p>Type: int Default: 1500 Min: 123 Max: 9300</p>						
NextHop	<p>The next hop IP Address. The default empty string disables this feature.</p> <p>Type: String Default: ""</p>						
NumLinksOrNodes	<p>The number of Ethernet Nodes.</p> <p>Type: int Default: 1 Min: 1 Max: 1000</p>						
NumVlan	<p>The number of VLANs.</p> <p>Type: int Default: 1</p>						
Phy	<p>The name of the PHY with which this parameter is associated.</p> <p>Type: String Default: ""</p>						
PublicIp	<p>The Public IP Address used by this TestNode, if PublicIpEnabled is true.</p> <p>Type: String Default: ""</p>						
PublicIpEnabled	<p>Enables the separate Public IP Address range to be used by this TestNode.</p> <p>Type: Boolean Default: false</p>						
Type	<p>Indicates if this parameter is set to use ATM or ETH. Deprecated, always set to ETH.</p> <p>Type: String-Enum Default: eth Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl Constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>eth</td> <td>Is::TEST_NODE_TYPE_ETH</td> <td>This is an Ethernet interface</td> </tr> </tbody> </table>	Value	Tcl Constant	Description	eth	Is::TEST_NODE_TYPE_ETH	This is an Ethernet interface
Value	Tcl Constant	Description					
eth	Is::TEST_NODE_TYPE_ETH	This is an Ethernet interface					
UniqueVlanAddr	<p>Determines the IP address incrementing rules when using VLAN. If set to true, then each node will get a unique IP address regardless of VLAN. If set to false, then each node within a VLAN will get a unique IP address, but the same IP address can be used in the other VLANs.</p> <p>Type: Boolean Default: false</p>						

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VlanDynamic	Indicates if the VLAN is dynamic, when true the other VLAN features will not matter. Type: Integer-Boolean 0-false 1-true Default: 0								
VlanId	The VLAN id. The default value is 0, which disables VLAN feature. Type: int Default: 0 Min: 0 Max: 4095								
VlanTagType	The VLAN Tag Type, only valid if Inner VLAN is enabled. Type: custom int Default: 0 Possible Values: <table border="1"><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>0</td><td>0x8100</td></tr><tr><td>1</td><td>0x88a8</td></tr><tr><td>2</td><td>0x9100</td></tr></tbody></table>	Value	Description	0	0x8100	1	0x88a8	2	0x9100
Value	Description								
0	0x8100								
1	0x88a8								
2	0x9100								
VlanUserPriority	The User Priority for the VLAN. The default value is 0, which disables this feature. Only applicable in certain P_TestNodes, and only applies when VLAN is enabled. Type: int Default: 0 Min: 0 Max: 7								

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: TestNode

Children:

None

Parameter Class: WifiNode

The WifiNode parameter class includes all parameters that specify which test server Wi-Fi radios/wlans will be used by the protocols and interfaces within a test case. In the GUI, a WiFiNode object is usually represented as shown:

Available 802.11 Interfaces and Settings

Interface	Include	Type	Band(s)	BW	Power Level	Antenna 1	Antenna 2	Antenna 3	MCS Index
wlan0	<input type="checkbox"/>	802.11ac	5.0GHz	20MHz	Auto	On	On	On	4
wlan1	<input type="checkbox"/>	802.11ac	5.0GHz	20MHz	Auto	On	On	On	Auto
wlan2	<input type="checkbox"/>	802.11n	5.0GHz	20MHz	Auto	On	On	On	Auto
wlan3	<input type="checkbox"/>	802.11n	5.0GHz	20MHz	Auto	On	On	On	Auto

A WiFiNode contains a list of WifiConfigs that each represent one wlan row in this table. All wlans included in the WiFiNode will be included in the test case.

Interface	Include	Type	Band(s)	BW	Power Level	Antenna 1	Antenna 2	Antenna 3	MCS Index
wlan0	<input type="checkbox"/>	802.11ac	5.0GHz	20MHz	Auto	On	On	On	4
wlan1	<input checked="" type="checkbox"/>	802.11ac	5.0GHz	20MHz	Auto	On	On	On	Auto
wlan2	<input type="checkbox"/>	802.11n	5.0GHz	20MHz	Auto	On	On	On	Auto
wlan3	<input checked="" type="checkbox"/>	802.11n	5.0GHz	20MHz	Auto	On	On	On	Auto

In this example, the WifiNode parameter would include wlan1 and wlan3 in its list of WifiConfig objects.

Example:

```
set wifi [ls::create -WifiNode-RfWifiNode -under $p]
ls::create WifiConfig -under $wifi -Id "1" -Name "wlan1" \
  -Band 5.0Ghz -Bw 20MHz -Pwr 1 -Type n -A1 "On" -A2 "Off" -A3 "Off"
ls::create WifiConfig -under $wifi -Id "1" -Name "wlan3" \
  -Band 5.0Ghz -Bw 20MHz -Pwr 1 -Type n -A1 "Off" -A2 "On" -A3 "Off"
```

Writable Attributes:

None

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: WifiNode

Children:

Child	Description
WifiConfig	The object that identifies the mainflow DMFs used in this parameter. (test case.) Type: UserCreated Multiplicity: 1-n

WifiConfig

Encapsulates the configuration of a Wi-Fi interface included in the test case.

Writeable Attributes:

Writeable Attribute	Description
A1	Antenna #1 Enabler. Type: Boolean On/Off Default: Off
A2	Antenna #2 Enabler. Type: Boolean On/Off Default: Off
A3	Antenna #3 Enabler. Type: Boolean On/Off Default: Off
A4	Antenna #4 Enabler. Only applies to certain radio types (Wave 2 AC CARD, Defect 1248). Type: Boolean On/Off Default: Off
Band	The radio frequency to use. Type: Custom String Default: 2.4Ghz Possible Values: Value 2.4GHz 5.0GHz Auto (Auto is for Wave 2 AC card only)
Bw	The bandwidth of the frequency. Type: Custom String Default: 20MHz Possible Values: Value 20MHz 40MHz 80Mhz 160Mhz

Chan	<p>The WiFi channel number. Only applies to RF AP Emulation. Channel availability is dependent on WiFi Band and Bandwidth combinations. Refer to the online Help for more information.</p> <p>Type: int</p> <p>2.4GHz Band Default: 1 Possible Values: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11</p> <p>5.0GHz Band Default: 36 Possible Values: 36, 40, 44, 48, 149, 153, 157, 161</p>
Id	<p>The ID of the Wi-Fi Interface (radio). Either the ID or the Name can be set. They will overwrite each other. The ID is the suffix of the name, e.g. wlan0, wlan1, are 0 and 1.</p> <p>Type: int Default: 0 Min: 0 Max: # of Radios/Wlans</p>
Gi	<p>The Guard Interval</p> <p>Type: Custom String Default: auto Possible Values: Value auto short long</p>
MscIndex	<p>The HT-MCS for 802.11N and VHT-MCS for 802.11AC setting by index.</p> <p>Type: Custom Enum String Default: Auto Possible Values: Auto, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23.</p>
Name	<p>The Name of the Wi-Fi Interface. Either the ID or the Name can be set. They will overwrite each other. The Name is the made up from the ID, e.g. 0 and 1 are wlan0 and wlan1 respectively.</p> <p>Type: Custom String</p>

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Pwr	<p>The Power Level</p> <p>Type: int Possible Values:</p> <table border="1"><thead><tr><th>Value</th><th>Power Level</th></tr></thead><tbody><tr><td>0</td><td>Maximum</td></tr><tr><td>1</td><td>Max - 15 dBm</td></tr><tr><td>2</td><td>Max - 13 dBm</td></tr><tr><td>3</td><td>Max - 11 dBm</td></tr><tr><td>4</td><td>Max - 9 dBm</td></tr><tr><td>5</td><td>Max - 7 dBm</td></tr><tr><td>6</td><td>Max - 6 dBm</td></tr><tr><td>7</td><td>Max - 5 dBm</td></tr><tr><td>8</td><td>Max - 4 dBm</td></tr><tr><td>9</td><td>Max - 3 dBm</td></tr><tr><td>10</td><td>Max - 2 dBm</td></tr><tr><td>11</td><td>Max - 1 dBm</td></tr></tbody></table>	Value	Power Level	0	Maximum	1	Max - 15 dBm	2	Max - 13 dBm	3	Max - 11 dBm	4	Max - 9 dBm	5	Max - 7 dBm	6	Max - 6 dBm	7	Max - 5 dBm	8	Max - 4 dBm	9	Max - 3 dBm	10	Max - 2 dBm	11	Max - 1 dBm
Value	Power Level																										
0	Maximum																										
1	Max - 15 dBm																										
2	Max - 13 dBm																										
3	Max - 11 dBm																										
4	Max - 9 dBm																										
5	Max - 7 dBm																										
6	Max - 6 dBm																										
7	Max - 5 dBm																										
8	Max - 4 dBm																										
9	Max - 3 dBm																										
10	Max - 2 dBm																										
11	Max - 1 dBm																										
Type	<p>The Wi-Fi version.</p> <p>Type: String Possible Values:</p> <table border="1"><thead><tr><th>Value</th><th>Wi-Fi Version</th></tr></thead><tbody><tr><td>a</td><td>802.11a</td></tr><tr><td>b</td><td>802.11b</td></tr><tr><td>g</td><td>802.11g</td></tr><tr><td>n</td><td>802.11n</td></tr><tr><td>ac</td><td>802.11ac</td></tr></tbody></table>	Value	Wi-Fi Version	a	802.11a	b	802.11b	g	802.11g	n	802.11n	ac	802.11ac														
Value	Wi-Fi Version																										
a	802.11a																										
b	802.11b																										
g	802.11g																										
n	802.11n																										
ac	802.11ac																										

Read-only Attributes:

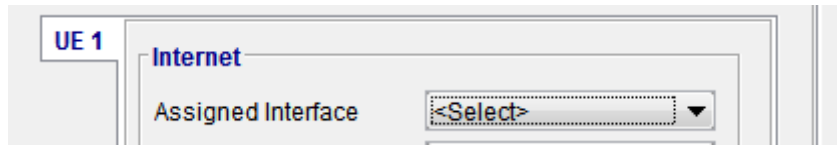
None

Children:

None

Parameter Class: WirelessNode

The WirelessNode class of parameters covers all parameters that specify the OTA/WWAN Modems used by the UE Node and MME Nodal test cases. In the GUI, a WirelessNode object is usually represented as shown:



Example:

```
ls::create -WirelessNode-OtaUe1 -under $p_ -Name "eth3"
```

Writeable Attributes:

Writeable Attribute	Description
Name	The name of the port that uniquely identifies a WWAN/OTA-Node Modem. Type: String Default: ""

Read-only Attributes:

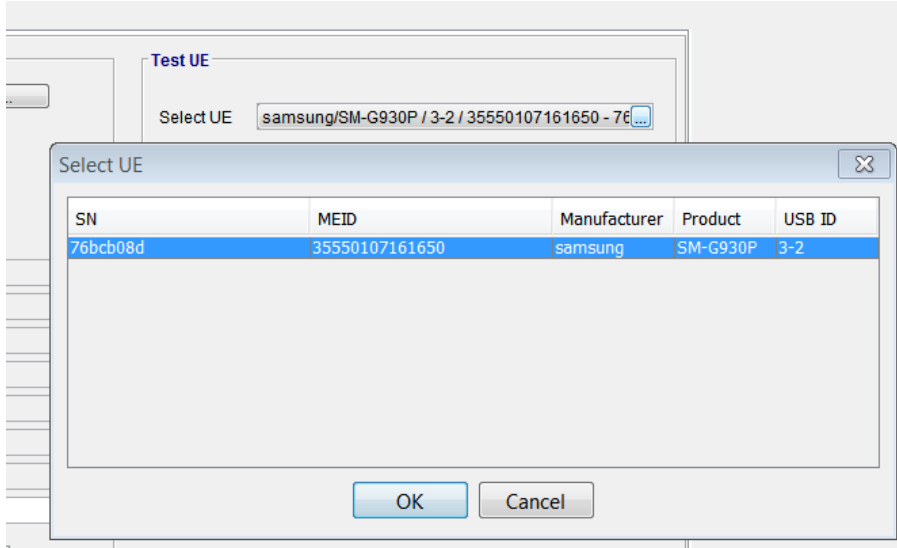
Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: WirelessNode
SupportedTechnology	The technology supported by the modem. Type: String

Children:

None

Parameter Class: UeNode

The UeNode class of parameters covers all parameters that specify the real UEs used by the UE Node test case. In the GUI, a UeNode object is usually represented as shown:



Example:

```
ls::create -UeNode-UeNode1 -under $p_ -SerialNum "76bc08d"
```

Writeable Attributes:

Writeable Attribute	Description
SerialNum	The serial number of the UE that uniquely identifies it. Type: String Default: ""
Sim	The Name of the optionally selected vSIM on the UE Type: String Default: ""

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: UeNode

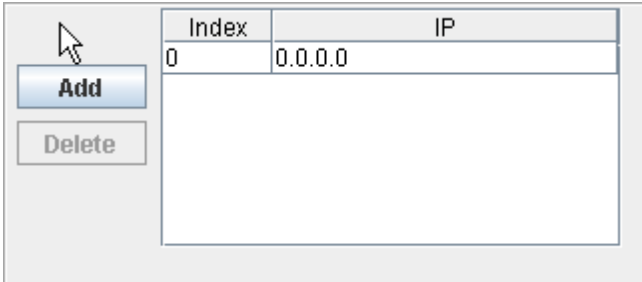
Children:

None

Parameter Class: Array

The Array class is used for some parameters that represent a list of values. It just contains a list of child ArrayItem objects. This class is not used extensively, as most lists are handled by using multiple Basic parameters with prefix or suffix digits in their name (e.g. NumOfTunnels, Tunnel1, Tunnel2). One common parameter that uses the Array class is the remote network host address(es), NetworkHostAddrRemote.

In the GUI, an Array object is usually represented as shown:



Example:

```
ls::create -Array-NetworkHostAddrRemote -under $test.TsGroup.Tc.Parameters
ls::create ArrayItem -under
$test.TsGroup.Tc.Parameters.NetworkHostAddrRemote" \
    -Value "0.0.0.0"
```

Writeable Attributes:

None

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: Array

Children:

Child	Description
ArrayItem	The object that provides access to all the test case parameters. Type: AutoCreated Multiplicity: 0-n

Array Class Sub Object: ArrayItem

The ArrayItem child object represents one item in the Array object. The only attribute is the Value which is just a string. The string can represent an integer, float, or enum, depending upon the usage. The ls::perform Validate function will validate the value for you.

Writable Attributes:

Writable Attribute	Description
Value	The value for this parameter Type: String Default: ""

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: ArrayItem

Children:

None

Parameter Class: SimClient

The SimClient class is for parameters that specify a SIM to be tested. The attributes are Name, which is a string that indicates the name of the SIM Array, and Slot, which is a string that indicates the slot position of the SIM.

In the GUI, a list of SimClients is usually represented as shown:

SIM Array Name	SIM Array IP	SIM Array Port	SIM Slot ▲	IMSI	MCC	MNC	iccid
SimArray1	80.147.10.70	51612	601	001010123456789	001	01	89010000000000000011
SimArray1	80.147.10.70	51612	602	001010123456789	001	01	89010000000000000011
SimArray1	80.147.10.70	51612	603	262015444091480	262	01	89490200000964655190
SimArray1	80.147.10.70	51612	604	262021716791969	262	02	89492017135051859260

In this example, the SIMs 601 and 602 are represented by two SimClient objects.

Example:

```
ls::create -SimClient-UeSim_0 -under $p_ -Name "SimArray1" -Slot 601
ls::create -SimClient-UeSim_1 -under $p_ -Name "SimArray1" -Slot 603
```

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Writeable Attributes:

Writeable Attribute	Description
Name	The name of the SIM Array that this parameter specifies Type: String Default: ""
Slot	The slot position of the SIM that this parameter specifies Type: String Default: ""

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type Type: String Value: SimClient

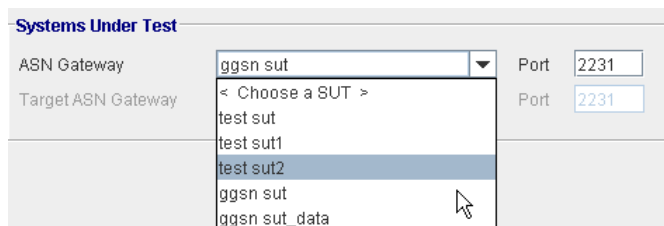
Children:

None

Parameter Class: Sut

The Sut class is for parameters that specify a SUT to be tested. The only attribute is the Name, which is just a string that indicates the name of the SUT.

In the GUI, a SUT is usually represented as shown:



Example:

```
ls::create -Sut-SutSgsn -under $p_ -Name "test sut2"
```

Writeable Attributes:

Writeable Attribute	Description
Name	The name of the SUT that this parameter specifies. Type: String Default: ""

Spirent Landslide

Tcl API Object and Perform Function Reference

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: Sut

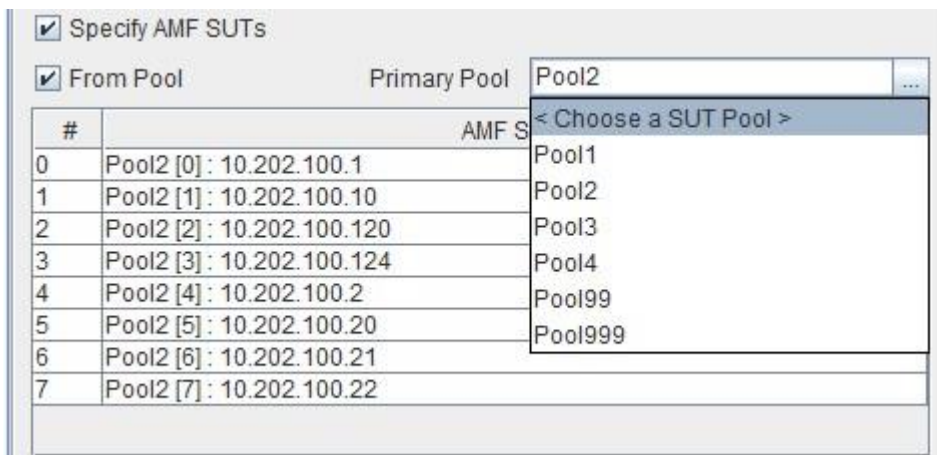
Children:

None

Parameter Class: SutPool

The SutPool class is for parameters that specify a SUT Pool to be tested. The only attribute is the Name, which is just a string that indicates the name of the SUT Pool. The SutPool parameter does not provide access or admin of the list of SUTs in the SUT Pool but triggers the Test Case to load the SUTs for the given Pool. Validating the Test Case will load the SUTs to the specific variables.

In the GUI, a SUT Pool is usually represented as shown:



Example:

```
ls::create -SutPool-AmfSutPool -under $p_ -Name "Pool2"
```

Writeable Attributes:

Writeable Attribute	Description
Name	The name of the SUT Pool that this parameter specifies. Type: String Default: ""

Spirent Landslide

Tcl API Object and Perform Function Reference

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: SutPool

Children:

None

Parameter Class: Tdf

The Tdf class is for parameters that specify a test data file (TDF) to be used. There are two attributes that identify the TDF, the library and the name.

In the GUI, a Tdf object is usually represented as shown:



Apply Test Data File to User Side

TDF0.9475434444580016

Writeable Attributes:

Writeable Attribute	Description
Library	The ID of the library in which the test data file is stored on the TAS. Type: int Default: 0
Name	The name of the test data file. Type: String Default: ""

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: Tdf

Children:

None

Parameter Class: LibraryItemInfo

The LibraryItemInfo class is for parameters that specify that some part of a test case was either saved as or initially derived from a saved template. There are two attributes that identify the LibraryItemInfo: the library and the name.

In the GUI, a LibraryItemInfo object is usually represented as a read-only field as shown:



Writeable Attributes:

Writeable Attribute	Description
Library	The ID of the library in which the template is stored on the TAS. Type: int Default: 0
Name	The name of the template. Type: String Default: ""

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: LibraryItemInfo

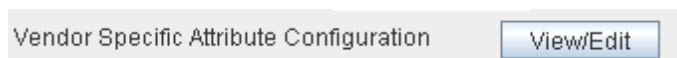
Children:

None

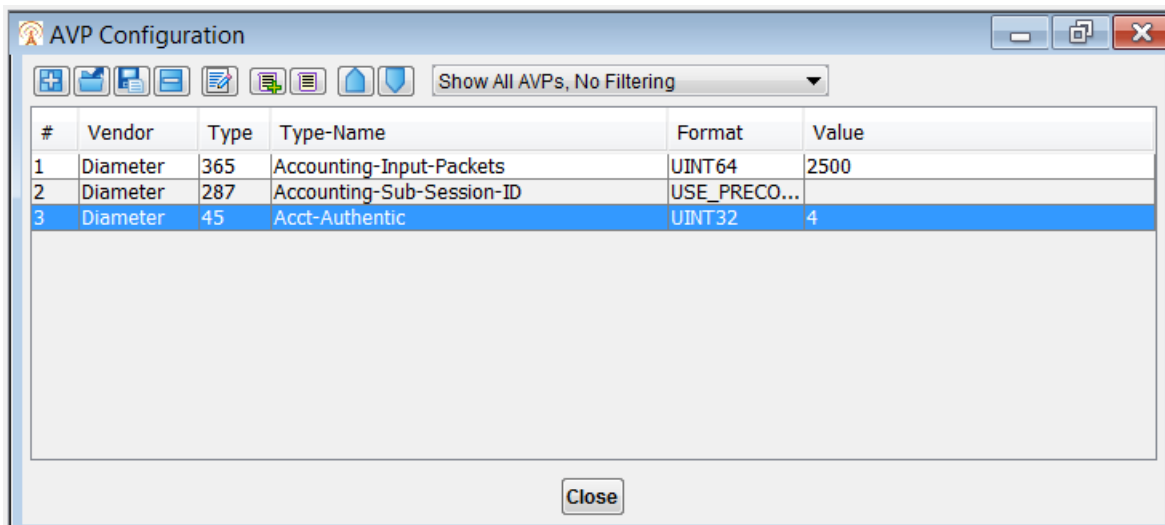
Parameter Class: Vsa (i.e. AVPs)

The Vsa class is used for parameters that specify VSAs, AVPs, VSA Criteria, or AVP Criteria. It contains a list of child ArrayItem objects.

In the GUI, a VSA or AVP object is usually represented as shown:



and



Writeable Attributes:

None

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: Vsa
IsCriteria	Indicates if this is a Criteria type. Type: Boolean
IsGeneric	Indicates if this is a Generic AVP set for Generic Diameter Interface or for a specific Protocol. Type: Boolean
Protocol	Indicates the protocol this AVP set applies to. Type: String

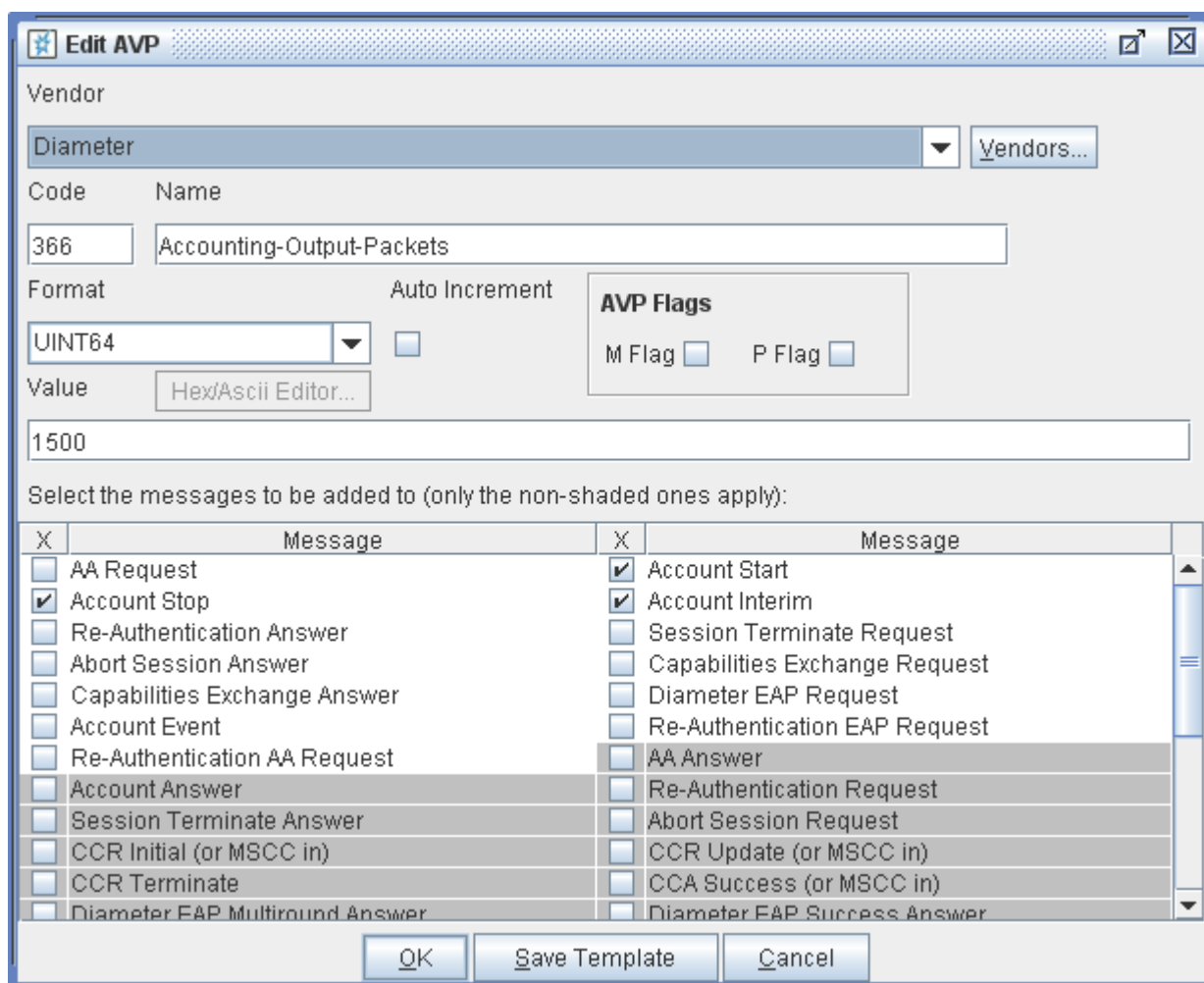
Children:

Child	Description
AttrInfo	The object that provides access to all the test case parameters. These can be created and inserted at a specific index with Is::create AttrInfo(index) -Under \$VSA_HANDLE. Type: UserCreated Multiplicity: 0-n
Variable	The Generic AVP Variables. Only valid if IsGeneric is true. Type: AutoCreated Multiplicity: 10

Vsa (AVP) Class Sub Object: AttrInfo

The AttrInfo child object represents one VSA or AVP in the Vsa class of objects.

In the GUI, an AttrInfo object is usually represented as shown (AVP version):



A VSA/AVP can be inserted into an AttrItem list, using the (index) notation:

```
% ls::get $test.tsgroup.tc.parameters.TyCcClnVsa
{Class Vsa} {IsGeneric false} {children {{AttrInfo0 java0x5} {AttrInfo1 java0x6} {AttrInfo2
java0x7} {AttrInfo3 java0x8}}}}
% ls::get $test.tsgroup.tc.parameters.TyCcClnVsa.AttrInfo(2)
{Action append} {AutoIncrement false} {Class AttrInfo} {Code 259} {Format 0} {MFlag true}
{MsgBitField 256} {MsgBitField2 0} {Name Acct-App-Id} {PFlag false} {Type AVP} {Value 16777216}
{VendorId 0}
% ls::create AttrInfo(2) -under $test.tsgroup.tc.parameters.TyCcClnVsa -Format 1 -Code 200
java0x9
% ls::get $test.tsgroup.tc.parameters.TyCcClnVsa.AttrInfo(2)
{Action append} {AutoIncrement false} {Class AttrInfo} {Code 200} {Format 1} {HashType 0}
{MFlag false} {MsgBitField 0} {MsgBitField2 0} {Name {}} {PFlag false} {Type VSA} {Value {}}
{VendorId 0}
% ls::get $test.tsgroup.tc.parameters.TyCcClnVsa
{Class Vsa} {IsGeneric false} {children {{AttrInfo0 java0xa} {AttrInfo1 java0xb} {AttrInfo2
java0xc} {AttrInfo3 java0xd} {AttrInfo4 java0xe}}}}
% ls::get $test.tsgroup.tc.parameters.TyCcClnVsa.AttrInfo(3)
{Action append} {AutoIncrement false} {Class AttrInfo} {Code 259} {Format 0} {MFlag true}
{MsgBitField 256} {MsgBitField2 0} {Name Acct-App-Id} {PFlag false} {Type AVP} {Value 16777216}
{VendorId 0}
%
```

Writable Attributes:

Writable Attribute	Description								
Action	<p>Indicates how this AVP/VSA is applied. It can override an existing AVP/VSA, remove a matching built-in AVP, or just be appended, within the selected messages.</p> <p>Type: Custom String Default: append Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>append</td> <td>Append the AVP or VSA to the message(s)</td> </tr> <tr> <td>override</td> <td>Override (or append if not found) the VSA or AVP in the message(s)</td> </tr> <tr> <td>remove</td> <td>Remove matching built-in AVP (does not apply to VSAs)</td> </tr> </tbody> </table>	Value	Description	append	Append the AVP or VSA to the message(s)	override	Override (or append if not found) the VSA or AVP in the message(s)	remove	Remove matching built-in AVP (does not apply to VSAs)
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override	Override (or append if not found) the VSA or AVP in the message(s)								
remove	Remove matching built-in AVP (does not apply to VSAs)								
AutoIncrement	<p>Indicates if the value should be auto-incremented.</p> <p>Type: Boolean Default: false</p>								
Code	<p>The VSA type or AVP code.</p> <p>Type: int Default: 0</p>								

CriteriaOperator	<p>The operator to apply when IsCriteria is true.</p> <p>Type: int Default: 0 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>0</td><td>Not Present</td></tr> <tr><td>1</td><td>Equal, ==</td></tr> <tr><td>2</td><td>Not Equal, !=</td></tr> <tr><td>3</td><td>Greater Than, ></td></tr> <tr><td>4</td><td>Less Than, <</td></tr> <tr><td>5</td><td>Greater Than or Equal, >=</td></tr> <tr><td>6</td><td>Less Than or Equal, <=</td></tr> </tbody> </table>	Value	Description	0	Not Present	1	Equal, ==	2	Not Equal, !=	3	Greater Than, >	4	Less Than, <	5	Greater Than or Equal, >=	6	Less Than or Equal, <=																																
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Format	<p>The format of the VSA/AVP value.</p> <p>Type: int Default: 0 Possible VSA Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>0</td><td>UINT32</td></tr> <tr><td>1</td><td>TEXT</td></tr> <tr><td>2</td><td>HEX_STRING</td></tr> <tr><td>3</td><td>SSE_USERNAME</td></tr> <tr><td>4</td><td>IPV4</td></tr> <tr><td>5</td><td>IPV6</td></tr> <tr><td>6</td><td><no longer used, reserved for future></td></tr> <tr><td>7</td><td>UINT16</td></tr> <tr><td>8</td><td>USE_PRECONFIGURED</td></tr> <tr><td>9</td><td>STRING</td></tr> <tr><td>10</td><td>MAC_ADDRESS</td></tr> </tbody> </table> <p>Possible AVP Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>0</td><td>UINT32</td></tr> <tr><td>1</td><td>TEXT</td></tr> <tr><td>2</td><td>HEX_STRING</td></tr> <tr><td>3</td><td>SSE_USERNAME</td></tr> <tr><td>4</td><td>IPV4</td></tr> <tr><td>5</td><td>IPV6</td></tr> <tr><td>6</td><td>UINT64</td></tr> <tr><td>7</td><td>AVP_GROUPED</td></tr> <tr><td>8</td><td>GROUPED_END</td></tr> <tr><td>9</td><td>USE_PRECONFIGURED</td></tr> <tr><td>10</td><td>MAC_ADDRESS</td></tr> </tbody> </table>	Value	Description	0	UINT32	1	TEXT	2	HEX_STRING	3	SSE_USERNAME	4	IPV4	5	IPV6	6	<no longer used, reserved for future>	7	UINT16	8	USE_PRECONFIGURED	9	STRING	10	MAC_ADDRESS	Value	Description	0	UINT32	1	TEXT	2	HEX_STRING	3	SSE_USERNAME	4	IPV4	5	IPV6	6	UINT64	7	AVP_GROUPED	8	GROUPED_END	9	USE_PRECONFIGURED	10	MAC_ADDRESS
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HashType	<p>The hashing algorithm to use for AVPs only.</p> <p>Type: int Default: 0 Possible VSA Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>0</td><td>NONE</td></tr> <tr><td>1</td><td>MD5</td></tr> <tr><td>2</td><td>SMD5</td></tr> </tbody> </table>	Value	Description	0	NONE	1	MD5	2	SMD5																																								
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2	SMD5																																																

<p>IsCriteria</p>	<p>Indicates if this is a VSA Criteria. This is set automatically by the test validation.</p> <p>Type: Boolean Default: false</p>																																								
<p>MFlag</p>	<p>The Diameter AVP Mandatory Flag.</p> <p>Type: Boolean Default: false</p>																																								
<p>Message[N], e.g. Message0, Message5, Message33</p>	<p>The individual messages can be set or checked using the Message[N] attribute, where N is the message's absolute bit #. For messages in the first MsgBitField, use the exact bit # value from the table, for messages in the second MsgBitField, you must add 32 to the bit #.</p> <p>Examples (for AVP types):</p> <p>This would retrieve the indicators for AA Request, EAP Success Answer, and Cancel Location Answer:</p> <pre>Is::get \$attr -Message0 -Message22 -Message35</pre> <p>This would set the indicator for the EAP Request and Reset Request messages:</p> <pre>Is::config \$attr -Message18 true -Message50 true</pre>																																								
<p>MsgBitField</p>	<p>The integer representation of the bit field that indicates which messages to include the VSA/AVP in. Only applies when the VSA Object IsGeneric=False; there are different meanings depending if VSA, VSA Criteria, or AVP.</p> <p>These tables describe what message each bit represents.</p> <p>VSA Bit Meanings:</p> <table border="1" data-bbox="573 1249 1490 1743"> <thead> <tr> <th>Bit</th> <th>Message</th> </tr> </thead> <tbody> <tr><td>0</td><td>Access Request</td></tr> <tr><td>1</td><td>Accounting Start</td></tr> <tr><td>2</td><td>Accounting Stop</td></tr> <tr><td>3</td><td>Accounting Interim</td></tr> <tr><td>4</td><td>Access Accept</td></tr> <tr><td>5</td><td>Access Response</td></tr> <tr><td>6</td><td>Access Request Node 2</td></tr> <tr><td>7</td><td>Accounting Final Stop</td></tr> <tr><td>8</td><td>COA Authorization Request</td></tr> <tr><td>9</td><td>COA Accounting Start</td></tr> <tr><td>10</td><td>COA Accounting Stop</td></tr> <tr><td>11</td><td>Access Challenge</td></tr> <tr><td>12</td><td>Access Reject</td></tr> <tr><td>13</td><td>Update Access Request</td></tr> <tr><td>14</td><td>Access Accept to HA</td></tr> </tbody> </table> <p>VSA Criteria Bit Meanings:</p> <table border="1" data-bbox="573 1795 1490 1911"> <thead> <tr> <th>Bit</th> <th>Message</th> </tr> </thead> <tbody> <tr><td>0</td><td>Access Request</td></tr> <tr><td>1</td><td>Accounting Start</td></tr> <tr><td>2</td><td>Accounting Stop</td></tr> </tbody> </table>	Bit	Message	0	Access Request	1	Accounting Start	2	Accounting Stop	3	Accounting Interim	4	Access Accept	5	Access Response	6	Access Request Node 2	7	Accounting Final Stop	8	COA Authorization Request	9	COA Accounting Start	10	COA Accounting Stop	11	Access Challenge	12	Access Reject	13	Update Access Request	14	Access Accept to HA	Bit	Message	0	Access Request	1	Accounting Start	2	Accounting Stop
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	9	Disconnect Request
	AVP Bit Meanings:	
	Bit	Message
	0	AA Request
	1	AA Answer
	2	Accounting Start
	3	Accounting Stop
	4	Accounting Interim
	5	Accounting Answer
	6	Re-Authentication Request
	7	Re-Authentication Answer
	8	Session Terminate Request
	9	Session Terminate Answer
	10	Abort Session Request
	11	Abort Session Answer
	12	Capabilities Exchange Request
	13	Capabilities Exchange Answer
	14	Credit Control Initial
	15	Credit Control Update
	16	Credit Control Terminate
	17	Credit Control Answer <obsolete, see MsgBitField2[24:26]>
	18	EAP Request
	19	<not used>
	20	Accounting Event
	21	EAP Multi-Answer
	22	EAP Success Answer
	23	HA IPv4 Answer
	24	(RESERVED)
	25	Re-Authentication EAP Request
	26	Re-Authentication AA Request
	27	MSCC Trigger Update in CCR
	28	MSCC Re-Authentication Update in CCR
	29	MSCC Final in CCA
	30	CC One Time Event
	31	CCA Failure (or MSCC in)

<p>MsgBitField2</p>	<p>The integer representation of the second bit field that indicates in which messages to include the VSA/AVP. Only applies when the Vsa Object IsGeneric=False.</p> <p>These tables describe what message each bit represents.</p> <p>VSA Bit Meanings:</p> <table border="1" data-bbox="573 449 1490 480"> <thead> <tr> <th>Bit</th> <th>Message</th> </tr> </thead> </table> <p>All VSA Messages fit in the first MsgBitField.</p> <p>AVP Bit Meanings:</p> <table border="1" data-bbox="573 590 1490 1593"> <thead> <tr> <th>Bit</th> <th>Message</th> </tr> </thead> <tbody> <tr><td>0</td><td>Update Location Request</td></tr> <tr><td>1</td><td>Update Location Answer</td></tr> <tr><td>2</td><td>Cancel Location Request</td></tr> <tr><td>3</td><td>Cancel Location Answer</td></tr> <tr><td>4</td><td>Authentication Information Request</td></tr> <tr><td>5</td><td>Authentication Information Answer</td></tr> <tr><td>6</td><td>Insert Subscriber Data Request</td></tr> <tr><td>7</td><td>Insert Subscriber Data Answer</td></tr> <tr><td>8</td><td>Delete Subscriber Data Request</td></tr> <tr><td>9</td><td>Delete Subscriber Data Answer</td></tr> <tr><td>10</td><td>Purge UE Request</td></tr> <tr><td>11</td><td>Purge UE Answer</td></tr> <tr><td>12</td><td>Reset Request</td></tr> <tr><td>13</td><td>Reset Answer</td></tr> <tr><td>14</td><td>Notify Request</td></tr> <tr><td>15</td><td>Notify Answer</td></tr> <tr><td>16</td><td>Multimedia Auth Request</td></tr> <tr><td>17</td><td>Multimedia Auth Answer</td></tr> <tr><td>18</td><td>Push Profile Request</td></tr> <tr><td>19</td><td>Push Profile Answer</td></tr> <tr><td>20</td><td>Server Assignment Request</td></tr> <tr><td>21</td><td>Server Assignment Answer</td></tr> <tr><td>22</td><td>Registration Termination Request</td></tr> <tr><td>23</td><td>Registration Termination Answer</td></tr> <tr><td>24</td><td>CCA Initial Success (or MSCC in)</td></tr> <tr><td>25</td><td>CCA Update Success (or MSCC in)</td></tr> <tr><td>26</td><td>CCA Terminate Success (or MSCC in)</td></tr> <tr><td>27</td><td>ME Identity Check Request</td></tr> <tr><td>28</td><td>ME Identity Check Answer</td></tr> <tr><td>29</td><td>Spending Limit Request</td></tr> <tr><td>30</td><td>Spending Limit Answer</td></tr> <tr><td>31</td><td>Spending Status Notification Request</td></tr> </tbody> </table>	Bit	Message	Bit	Message	0	Update Location Request	1	Update Location Answer	2	Cancel Location Request	3	Cancel Location Answer	4	Authentication Information Request	5	Authentication Information Answer	6	Insert Subscriber Data Request	7	Insert Subscriber Data Answer	8	Delete Subscriber Data Request	9	Delete Subscriber Data Answer	10	Purge UE Request	11	Purge UE Answer	12	Reset Request	13	Reset Answer	14	Notify Request	15	Notify Answer	16	Multimedia Auth Request	17	Multimedia Auth Answer	18	Push Profile Request	19	Push Profile Answer	20	Server Assignment Request	21	Server Assignment Answer	22	Registration Termination Request	23	Registration Termination Answer	24	CCA Initial Success (or MSCC in)	25	CCA Update Success (or MSCC in)	26	CCA Terminate Success (or MSCC in)	27	ME Identity Check Request	28	ME Identity Check Answer	29	Spending Limit Request	30	Spending Limit Answer	31	Spending Status Notification Request
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Name	<p>The name of this VSA/AVP.</p> <p>Type: String Default: ""</p>									
PFlag	<p>The Diameter AVP encryption (P) flag.</p> <p>Type: Boolean Default: false</p>									
Type	<p>Indicates if this is an AVP (Diameter) or VSA (Radius) attribute. This must be set the same for all AttrInfos in the same Vsa object and must properly match what is expected for the parameter. Since the default is "VSA", you only need to change this when you are using Diameter AVPs.</p> <p>Type: String-Enum Default: VSA Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl Constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>AVP</td> <td>Is::VSA_TYPE_AVP</td> <td>This is an AVP.</td> </tr> <tr> <td>VSA</td> <td>Is::VSA_TYPE_VSA</td> <td>This is a VSA.</td> </tr> </tbody> </table>	Value	Tcl Constant	Description	AVP	Is::VSA_TYPE_AVP	This is an AVP.	VSA	Is::VSA_TYPE_VSA	This is a VSA.
Value	Tcl Constant	Description								
AVP	Is::VSA_TYPE_AVP	This is an AVP.								
VSA	Is::VSA_TYPE_VSA	This is a VSA.								
Value	<p>The value of this VSA/AVP. This only applies when the Vsa class object is IsGeneric=false.</p> <p>Type: String Default: ""</p>									
Variable	<p>The Variable assigned to this as a Generic AVP. Only applies when the Vsa Object IsGeneric=True</p>									
VendorId	<p>The vendor ID of this VSA/AVP</p> <p>Type: int Default: 0</p>									

Read-only Attributes:

Read-only Attribute	Description
Class	<p>The class name for this sub object.</p> <p>Type: String Value: AttrInfo</p>

Children:

None

Vsa (AVP) Class Sub Object: Variable

The Variable child object represents one Variable in a Class:VSA object that contains Generic AVPs.

In the GUI, a Variable object is usually represented as shown:

Variable 3	Initial Value	<input type="text" value="5"/>	Max Size (bytes)	<input type="text" value="8"/>
Requests	On Send	<input type="button" value="Save"/>	Increment	<input type="text" value="5"/>
	On Receive	<input type="button" value="Save"/>		
Answers	On Send	<input type="button" value="Save"/>	Decrement	<input type="text" value="5"/>
	On Receive	<input type="button" value="Don't Save"/>		

Writeable Attributes:

Writeable Attribute	Description										
AnsRcvdSave	Flag to indicate if the variable is saved when an Answer is received. Type: Boolean Default: false										
AnsSentOp	The operation to apply when an Answer is sent. Type: Custom String Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>none</td> <td>No operation, same value</td> </tr> <tr> <td>inc</td> <td>Increment the value</td> </tr> <tr> <td>dec</td> <td>Decrement the value</td> </tr> <tr> <td>regsub</td> <td>Apply a regular expression substitution on the value.</td> </tr> </tbody> </table>	Value	Description	none	No operation, same value	inc	Increment the value	dec	Decrement the value	regsub	Apply a regular expression substitution on the value.
Value	Description										
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dec	Decrement the value										
regsub	Apply a regular expression substitution on the value.										
AnsSentOpArg	The argument for the operation to apply when an Answer is sent. When the AnsSentOp is “regsub”, the argument format is as follows: /regular-expression/substitute-specification/optional-flags <ul style="list-style-type: none"> The “regular-expression” and “substitute-specification” parts are the same as the regular-expression and substitute-specification in the Tcl Regsub command. The following optional flags are allowed: <ul style="list-style-type: none"> g - global replace/substitute i - case insensitive <p>Example: /foo/bar/gi</p> Type: String Default: ""										
AnsSentSave	Flag to indicate if the variable is saved when an Answer is sent. Type: Boolean Default: false										
InitialValue	The initial value for the variable. Type: String Default: ""										

MaxSize	The maximum size in bytes for this variable. Type: int Default: 8										
ReqRcvdSave	Flag to indicate if the variable is saved when a Request is received. Type: Boolean Default: false										
ReqSentOp	The operation to apply when a Request is sent. Type: Custom String Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>none</td> <td>No operation, same value</td> </tr> <tr> <td>inc</td> <td>Increment the value</td> </tr> <tr> <td>dec</td> <td>Decrement the value</td> </tr> <tr> <td>regsub</td> <td>Apply a regular expression substitution on the value.</td> </tr> </tbody> </table>	Value	Description	none	No operation, same value	inc	Increment the value	dec	Decrement the value	regsub	Apply a regular expression substitution on the value.
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ReqSentSave	Flag to indicate if the variable is saved when a Request is sent. Type: Boolean Default: false										

Read-only Attributes:

Read-only Attribute	Description
Index	The index of the variable in the list Type: int

Children:

None

Parameter Class: LongFlex

The LongFlex class is used by very few special parameters that allow the user to enter either a decimal integer or hexadecimal number, but internally always maintain the decimal value. The only attribute is Value which is just an integer or hexadecimal number starting with 0x.

Writeable Attributes:

Writeable Attribute	Description
Value	The value for this parameter. Type: Integer or hexadecimal string starting with 0x Default: 0

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: LongFlex

Children:

None

Parameter Class: MessageEditor

The MessageEditor class is for parameters that specify a MessageEditor.

Writeable Attributes:

Writeable Attribute	Description
Library	The ID of the library in which the MessageEditor is saved. Type: int Default: 0
Name	The Name of the MessageEditor Type: String Default: ""

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: MessageEditor
Protocol	The protocol the message editor is used for Type: String Value: ""

Children:

None

Spirent Landslide

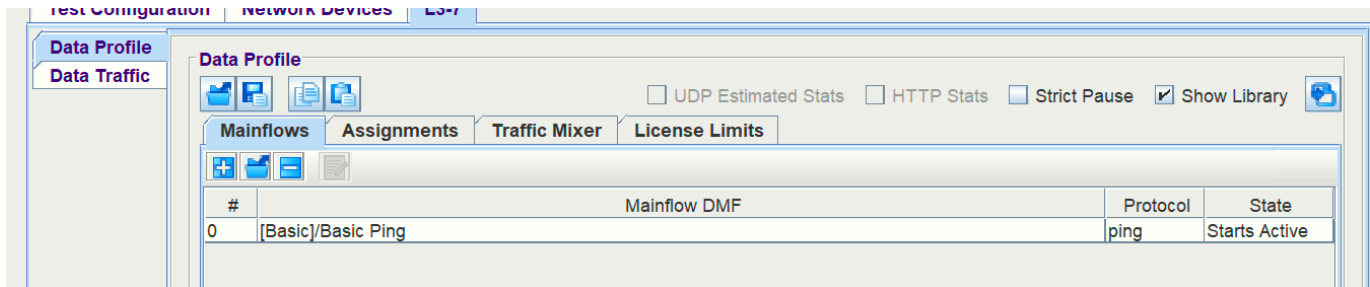
Tcl API Object and Perform Function Reference

Parameter Class: Dmf

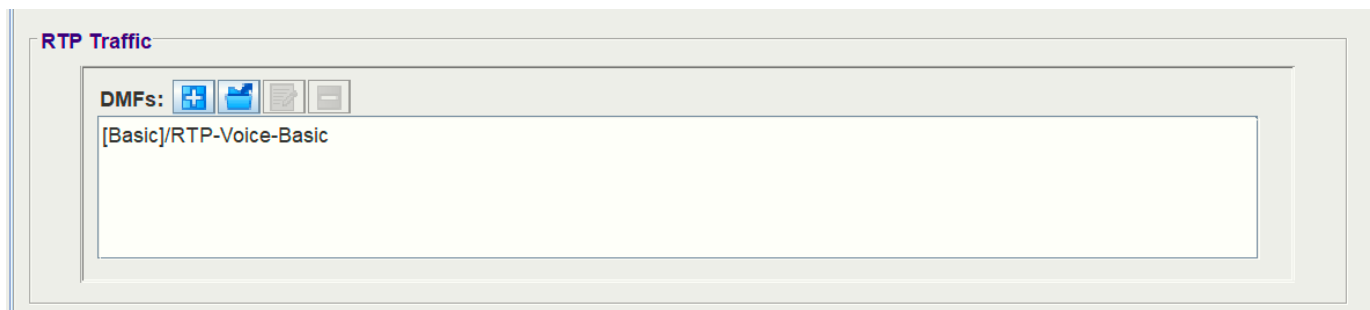
The Dmf class is for parameters that specify a Data Profile including a list of DMFs and the associated instance and assignment data to be used.


In the GUI, a Dmf class parameter object is represented as shown:

Standard L3-7 Data Profile:



Secondary Data Profile example, Gm VoLTE RTP Traffic:



In the Tcl API, the DMFs are represented by Mainflow objects in the DMF class test case parameter. You add DMFs to the test case with the AddDmfMainflow perform function, which is the equivalent of using **Open**  in the GUI. For the Standard Data Profile, the InstanceGroup object represents the information you see on the Assignments tab. The other settings such as UDP Estimated Stats, HTTP Stats and Strict Pause are all supported on Standard Data Profiles but not all are supported on Secondary Data Profiles.

Writeable Attributes:

Writeable Attribute	Description
HttpStats	Flag to enable HTTP protocol measurements. Only valid when at least one mainflow DMF is an HTTP, HTTPS, or HTTP2 DMF. Available on select secondary DMF parameters. Type: Boolean Default: False

Spirent Landslide

Tcl API Object and Perform Function Reference

StrictPause	Flag to enable Strict Pause feature. Only include this field if there is a flow that allows the StrictPause, which include standard Basic Data, Advanced Data and Lite DMFs. Protocols that are not supported include: rtpvoice, rtpvideo, ulp, abr, tracert, and fireball. In addition, if the tc is in fireball mode, expecting fireball protocols, do not include this field. Type: Boolean Default: False
UdpEstStats	Flag to enable UDP Estimate Stats. Only valid when at least one mainflow DMF is a UDP DMF. Type: Boolean Default: False

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: Dmf

Children:

Child	Description
Mainflow	The object that identifies the mainflow DMFs used in this parameter (test case.) Type: UserCreated via AddDmfMainflow perform function Multiplicity: 1-n
InstanceGroup	The object that identifies mainflow DMFs for the Instances and Assignments information (i.e. Row objects). Type: UserCreated via AddDmfMainflow and AddDmfInstance perform function Multiplicity: 1-n

Mainflow

Identifies a Dmf object by library and name. Mainflow objects are created automatically with the AddDmfMainflow perform function, used to add mainflows to a Dmf class test case parameter. Mainflow objects can be modified using the ModifyDmfMainflow perform function. The ModifyDmfMainflow function will also update all InstanceGroup objects related to the Mainflow.

Writeable Attributes:

None (Use ModifyDmfMainflow)

Read-only Attributes:

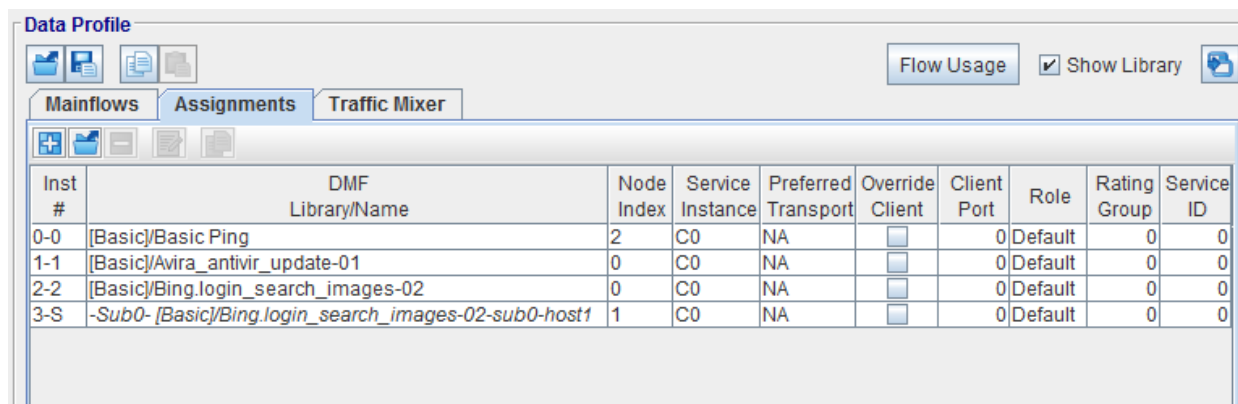
Read-only Attribute	Description
Library	The ID of the library in which the DMF is saved. Type: int Default: 0
Name	The Name of the DMF Type: String Default: ""


Children:

None

InstanceGroup

Encapsulates the Instances and Assignment data for a mainflow DMF and its subflows, if any. InstanceGroup objects are created automatically with the AddDmfMainflow and AddDmfInstances perform functions.



The AddDmfInstance perform function is the equivalent of the **Duplicate Instance**  button in the GUI. In this figure, InstanceGroup(0) contains just one row for the Basic Ping mainflow, InstanceGroup(1) contains just one row for the Avira_antivir_update-01 mainflow, and InstanceGroup(2) contains two rows, one for the Bing.login_search_images_02 mainflow and one for its subflow, Bing.login_search_images-02-sub0-host1.

Spirent Landslide

Tcl API Object and Perform Function Reference

Running the validate function on the enclosing test session will update and correct the rows based on the current definition of the mainflow DMF, i.e. the current list of subflows.

Writeable Attributes:

Writeable Attribute	Description
MixType	The user defined mix type for this DMF instance, used for the Traffic Mixer. Empty string indicates DMF protocol is the mix type. Type: String Default: ""
Rate	The rate at which to override the DMF. 0 indicates to use the DMF defined rate. Greater than 0 is used to override the defined rate. Type: float Default: 0 Min: 0 Max: 2000.0

Read-only Attributes:

None

Children:

Child	Description
Row	Encapsulates the options that can be set for an individual DMF instance. This represents one row in the DMF Instances and Assignments table on the GUI. The first Row object in the InstanceGroup list is the mainflow and any others are the subflows. Type: AutoCreated Multiplicity: 1-n

Row

Encapsulates the Instances and Assignment settings for a mainflow DMF and its subflows, if any. These objects are created automatically with the AddDmfMainflow and AddDmfInstances perform functions.

Inst #	DMF Library/Name	Node Index	Service Instance	Preferred Transport	Override Client	Client Port	Role	Rating Group	Service ID
0-0	[Basic]/Basic Ping	2	C0	NA	<input type="checkbox"/>	0	Default	0	0
1-1	[Basic]/Avira_antivir_update-01	0	C0	NA	<input type="checkbox"/>	0	Default	0	0
2-2	[Basic]/Bing.login_search_images-02	0	C0	NA	<input type="checkbox"/>	0	Default	0	0
3-S	-Sub0-[Basic]/Bing.login_search_images-02-sub0-host1	1	C0	NA	<input type="checkbox"/>	0	Default	0	0

Writeable Attributes:

Writeable Attribute	Description
ClientPort	<p>The port to use for the client side connection for this DMF instance, when OverridePort is set to true.</p> <p>Type: int Default: 0 Min: 0 Max: 65535</p>
Context	<p>The index of the context, APN, bearer, subscriber group, or service instance to use for this DMF instance. What the context represents is dependent upon the “context” of the test. The 3rd column in the GUI table is always updated to indicate the context type. The index is determined from the Primary/Main index and Secondary/Auxiliary index based on the following function:</p> <p>For primary context Index = (PrimaryIndex * (# of Secondaries per primary + 1)) For secondaries Index = (PrimaryIndex * (# of Secondaries per primary + 1)) + SecondaryIndex + 1</p> <p>Example, if you have 3 secondaries/aux per primary/main:</p> <pre> P0 - 0 M0 - 0 P0-S0 - 1 M0-Aux0 - 1 P0-S1 - 2 M0-Aux1 - 2 P0-S2 - 3 M0-Aux2 - 3 P1 - 4 M1 - 4 P1-S0 - 5 M1-Aux0 - 5 P1-S1 - 6 M1-Aux1 - 6 P1-S2 - 7 M1-Aux2 - 7 </pre> <p>Type: int Default: 0 Min: 0</p>
Node	<p>The index of the Network Host address to use for this DMF instance.</p> <p>Type: Boolean Default: True</p>
OverridePort	<p>Indicates whether or not to override the client port defined inside the</p>

	<p>DMF. If set to true, the ClientPort attribute must be set to the correct port.</p> <p>Type: Boolean Default: False</p>								
PreferredTransport	<p>Indicates whether the preferred transport type is Any, IPv4, or IPv6. This is only applicable when Dual Stack is defined. The MN will use the preferred transport, if an address of that type has been assigned.</p> <p>Type: String-Enum Default: Any Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Any</td> <td>Use whatever is available</td> </tr> <tr> <td>IPv4</td> <td>Use the v4 address</td> </tr> <tr> <td>IPv6</td> <td>Use the v6 address</td> </tr> </tbody> </table>	Value	Description	Any	Use whatever is available	IPv4	Use the v4 address	IPv6	Use the v6 address
Value	Description								
Any	Use whatever is available								
IPv4	Use the v4 address								
IPv6	Use the v6 address								
Role	<p>Specifies which side of the DMF the MN will emulate. Refer to the online Help for more information.</p> <p>Type: String-Enum Default: Default Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Default</td> <td>Act in the default way based on the test case</td> </tr> <tr> <td>Client</td> <td>Emulate the client side</td> </tr> <tr> <td>Server</td> <td>Emulated the server side</td> </tr> </tbody> </table>	Value	Description	Default	Act in the default way based on the test case	Client	Emulate the client side	Server	Emulated the server side
Value	Description								
Default	Act in the default way based on the test case								
Client	Emulate the client side								
Server	Emulated the server side								
RatingGroup	<p>Specifies the billing RatingGroup assigned to this DMF instance; applies to billing test cases only.</p> <p>Type: int Default: 0 Min: 0 Max: 4294967295</p>								
ServiceID	<p>Specifies the billing ServiceID assigned to this DMF instance; applies to billing test cases only.</p> <p>Type: int Default: 0 Min: 0 Max: 4294967295</p>								

Read-only Attributes:

Read-only Attribute	Description
DmfLibrary	<p>The library id of the DMF this Row represents</p> <p>Type: int</p>
DmfName	<p>The name of the DMF this Row represents</p> <p>Type: String</p>

DmfType	<p>The type of DMF this Row represents. The first row in an InstanceGroup is always the Mainflow, and subsequent rows are always Subflows</p> <p>Type: String-Enum Possible Values:</p> <table border="1"> <thead> <tr> <th data-bbox="594 436 699 464">Value</th> <th data-bbox="729 436 878 464">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="594 468 699 495">Mainflow</td> <td data-bbox="729 468 1219 495">This is the Mainflow in the InstanceGroup</td> </tr> <tr> <td data-bbox="594 499 699 527">Subflow</td> <td data-bbox="729 499 1187 527">This is a Subflow in the InstanceGroup</td> </tr> </tbody> </table>	Value	Description	Mainflow	This is the Mainflow in the InstanceGroup	Subflow	This is a Subflow in the InstanceGroup
Value	Description						
Mainflow	This is the Mainflow in the InstanceGroup						
Subflow	This is a Subflow in the InstanceGroup						
Index	<p>The overall index of this row, relative to all other rows in all InstanceGroups. This is the value you would see in the Inst # column on the GUI.</p> <p>Type: int</p>						

Children:

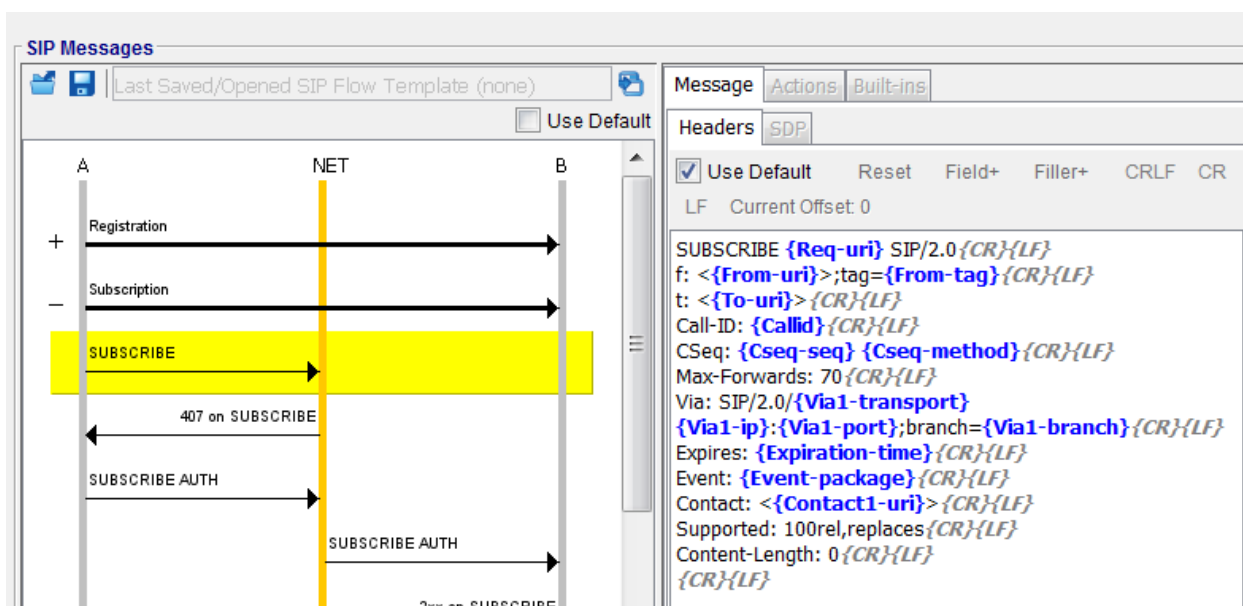
Child	Description
ServerMessage	<p>A Message object that represents the server-side message for this command.</p> <p>Type: AutoCreated Multiplicity: 1</p>
WaitForEvent	<p>Events that are waited for before executing this command.</p> <p>Type: UserCreated Multiplicity: 0-3</p>

Parameter Class: SipFlow

The SipFlow class is for parameters that specify a list of SIP Control Messages for the VoLTE Applications or for Supplementary SIP Scripts or for CommandMode/Sequencer SIP Scripts. The Class is used in two specific modes, SIP Flow and SIP Script. As a SIP Flow, there is one full “Super-Flow” with all possible messages, each one assigned to a particular Category. The ID=999 indicates the Super-Flow. Messages that apply to the current configuration are *enabled* and the rest are *disabled*. As a SIP Script, the ID should be 0, and the SipFlow object should have a list of Callers and Steps, chosen and customized by the user.

Recommendation: Use the GUI as the Tcl API wizard for SIP Flows and SIP Scripts.

A SipFlow class parameter object, in Regular Super-Flow SIP Flow mode, is represented as shown:



In this figure, the test case is using Registration and Subscription, with a Super-Flow (ID=999). The SIP Flow Categories and Messages used are determined by the test case configuration. For test cases that support the Super-Flow SIP Flow, you add SIP Flow by using the GetDefaultSipFlow perform function with ID=999 to set the SipFlow parameter in the Test Case Parameters list (refer to the [Perform Command Functions](#) section).

```
set sip_flow_ [Is::perform GetDefaultSipFlow 999 SipFlow $p_ ]
```

When accessing SipFlowMessages within a Flow or Action, using the message index is subject to conflicts over time if the list of messages changes. Instead, follow the Save-as-Tcl pattern and access/reference messages by their ID. Is::get \$flow -children-MessageById(ID). The Messages are listed in the order in which they are executed, but the ID uniquely identifies each message regardless of where it may get moved around over time.

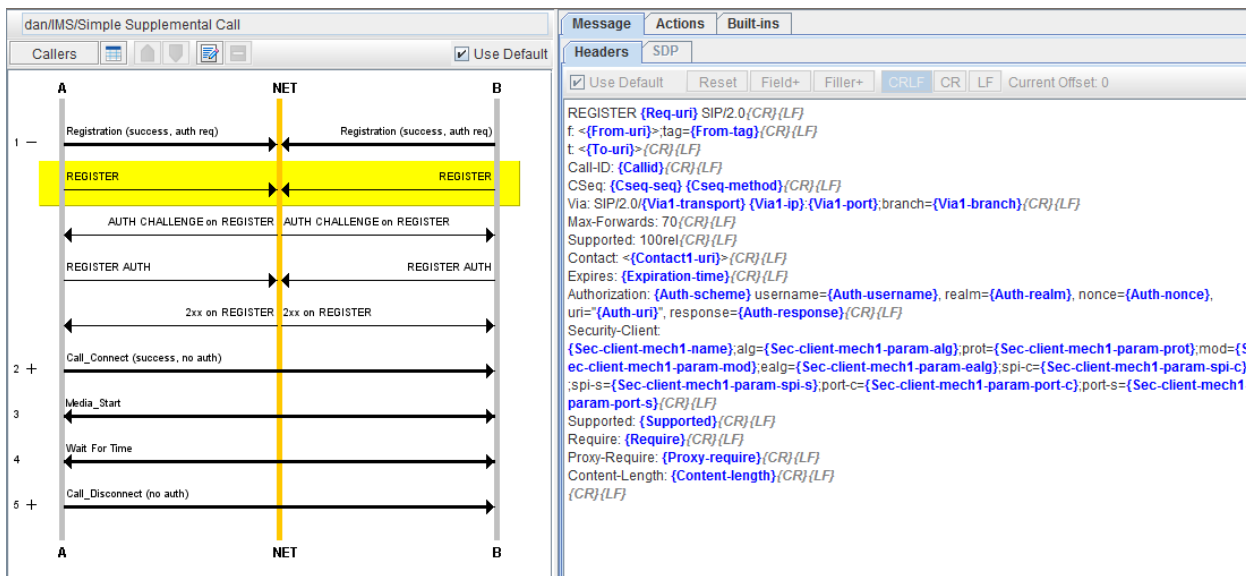
```
set sip_msg_ [Is::get $sip_flow_ -children-MessageById(1)]
Is::config $sip_msg_ -UseDefaultHeaders false
```

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```
Is::config $sip_msg_ -Headers "REGISTER SIP/2.0\r\nf: <>;tag=\r\n\t: <>\r\nCall-ID: \r\nCSeq: \r\nVia: SIP/2.0/ ;branch=\r\nMax-Forwards: 70\r\nSupported: 100rel\r\nContact: <>\r\nExpires: \r\nPath: \r\nAuthorization: username=, realm=, nonce=, uri=\\", response=, algorithm=, integrity-protected=\r\nSupported: \r\nRequire: \r\nProxy-Require: \r\nP-Access-Network-Info: ; utran-cell-id-3gpp=\r\nP-Visited-Network-ID: \r\nP-Charging-Vector: icid-value=; icid-generated-at=; orig-voi=\r\nP-Charging-Function-Addresses: ccf=; ecf=\r\nContent-Length: \r\n\r\n"
```

A SipFlow class parameter object, in SIP Script mode, is represented as shown:



In the figure, you can see the Actions as numbered thick arrows that can be expanded to show the individual messages as thin lines within the Action. The Callers are configured using the **Callers** button, and the Roles are configured when you add an Action to a Script.

Writeable Attributes:

Writeable Attribute	Description
Library	The Library ID where the last saved template resides, and/or the library ID for the ODC Script. Only writeable when FlowId==0. Type: int
Name	For SIP Flows, this is the last saved template name. For SIP Scripts, this is the last saved template name. For ODC SIP Scripts, this is the name of the Script. Type: String
UseDefault	Determines if the SIP Flow is editable on a global level. If true, the default SIP Flow is used, if false, individual messages can be optionally edited, if allowed. Type: Boolean Default: True

UserFieldsEnabled	<p>Determines if the SIP Flow will allow user defined message header/body fields. If false, any field not using a Filler will only be included if the next line is a built-in Field/Filler. Refer to the Online Help for more details.</p> <p>Type: Boolean Default: True</p>
PasteBuffer0	<p>User-defined auto-increment enabled buffer for pasting information into SIP Messages, via Paste-buffer-1 Filler. API is 0-based, filler/GUI is 1-based.</p> <p>Type: String Default: user#(N0)</p>
PasteBuffer1	<p>User-defined auto-increment enabled buffer for pasting information into SIP Messages, via Paste-buffer-2 Filler.</p> <p>Type: String Default:</p>
PasteBuffer2	<p>User-defined auto-increment enabled buffer for pasting information into SIP Messages, via Paste-buffer-3 Filler.</p> <p>Type: String Default:</p>
PasteBuffer3	<p>User-defined auto-increment enabled buffer for pasting information into SIP Messages, via Paste-buffer-4 Filler.</p> <p>Type: String Default:</p>
PasteBuffer4	<p>User-defined auto-increment enabled buffer for pasting information into SIP Messages, via Paste-buffer-5 Filler.</p> <p>Type: String Default:</p>
PasteBuffer5	<p>User-defined auto-increment enabled buffer for pasting information into SIP Messages, via Paste-buffer-6 Filler.</p> <p>Type: String Default:</p>
PasteBuffer6	<p>User-defined auto-increment enabled buffer for pasting information into SIP Messages, via Paste-buffer-7 Filler.</p> <p>Type: String Default:</p>
PasteBuffer7	<p>User-defined auto-increment enabled buffer for pasting information into SIP Messages, via Paste-buffer-8 Filler.</p> <p>Type: String Default:</p>
PasteBuffer8	<p>User-defined auto-increment enabled buffer for pasting information into SIP Messages, via Paste-buffer-9 Filler.</p> <p>Type: String Default:</p>

PasteBuffer9	User-defined auto-increment enabled buffer for pasting information into SIP Messages, via Paste-buffer-10 Filler. Type: String Default:
Reset	Flag to indicate this SIP Script resets the Subscribers/Endpoints. This only applies to ODC Scripts. Type: Boolean Default: True

Read-only Attributes:

Read-only Attribute	Description						
Class	The class name for this parameter type. Type: String Value: SipFlow						
FlowId	The ID of the flow, which indicates what actions are associated with the flow. The flow ID must be an exact match for what the test case configuration requires. Flow ID 0 is the Script indicator. Flow ID > 0 is a SIP Flow specific ID. Type: int Default: 1 Possible FlowId Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>SIP or ISUP Script (Supplementary or Command Mode)</td> </tr> <tr> <td>999</td> <td>SIP Super-Flow (Regular Flow Mode)</td> </tr> </tbody> </table>	Value	Description	0	SIP or ISUP Script (Supplementary or Command Mode)	999	SIP Super-Flow (Regular Flow Mode)
Value	Description						
0	SIP or ISUP Script (Supplementary or Command Mode)						
999	SIP Super-Flow (Regular Flow Mode)						
Interface	The name of the interface this SIP Flow parameter is for. Type: String Value: Custom						
Notes	A brief description of the SIP Flow. Not used with SIP Scripts. Type: String Value: Custom						

Children:

Child	Description
Caller	A Caller to Subscriber/Endpoint configuration. The list of Callers is created by the GenerateSipCallers perform function, not by the user. Type: Auto-Generated SipCaller Multiplicity: 1-n
Message	A message in the SIP flow Type: Auto-Generated SipFlowMessage Multiplicity: 1-n
MessageById	This is an alternate way to access SipFlowMessage objects, it retrieves the objects by their ID not their Index. -children-MessageById(ID) Type: int Value: 1-based unique ID for each message in the list

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Step	<p>A Step containing an Action in the SIP Script. Steps are created using the GetSipActionStep perform function and added to the SipFlow object using Is::config.</p> <pre>set step_ [Is::perform GetSipActionStep 285] Is::config \$sip_script_ -children-Step \$step_</pre> <p>Type: User-Generated SipStep Multiplicity: 1-n</p>
------	---

Caller

A single Caller configuration in a SIP Script. A Caller represents a Subscriber/Endpoint in a call, conversation, or messaging, and is the source/destination for certain messages. A->B B<-A, etc. In a given Action, there are Parties, such as Source, Destination, Original Destination, Refer, etc. These Parties are assigned to specific Callers in the Script. Subscribers/Endpoints are assigned to Callers when you run the test. Refer to widely available documentation about how SIP Scripts work; this manual covers only the Landslide Tcl API.

Writeable Attributes:

Writeable Attribute	Description						
Spec Value1 (deprecated)	<p>The autoincremented Subscriber or Endpoint index setting. Subscribers/Endpoints are assigned to this Caller based on this setting.</p> <p>Type: String Auto-Increment Syntax #(N[start] <[repeats]/[increment]>) Default: <DEPENDS UPON SCRIPT CALLERS COUNT></p>						
NumCalls Value2 (deprecated)	<p>The Number of Caller Groups to allow, the number of Subscribers/Endpoints that will be assigned for this Caller. This value should be the same for all Callers, as the minimum value reported will be used. This value can be used to limit the Number of Subscribers used. This limit may not be reached if the Number of Subscribers in the Test Case is not large enough to meet the needs of the Caller Groups.</p> <p>Type: int Default: 1 Min: 1 Max: 2000000</p>						
Type Value3 (deprecated)	<p>The Caller Type.</p> <p>Type: Custom String Default: S Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>S</td> <td>The Caller is a Subscriber</td> </tr> <tr> <td>E</td> <td>The Caller is an Endpoint</td> </tr> </tbody> </table>	Value	Description	S	The Caller is a Subscriber	E	The Caller is an Endpoint
Value	Description						
S	The Caller is a Subscriber						
E	The Caller is an Endpoint						
NumSubsPerCaller	<p>The Number of Subscribers for the B-List Caller. This only applies when the B-List Caller feature is enabled. Sets how many B-List Subscribers are in each Caller Group.</p> <p>Type: int Default: 1 Min: 1 Max: 100</p>						

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Read-only Attributes:

Read-only Attribute	Description										
Name Value0 (deprecated)	The Caller ID/Name. Type: Custom String Default: A Possible Values: <table border="1"><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>A</td><td>The A Caller in the Script</td></tr><tr><td>B</td><td>The C Caller in the Script</td></tr><tr><td>C</td><td>The C Caller in the Script</td></tr><tr><td>D</td><td>The D Caller in the Script</td></tr></tbody></table>	Value	Description	A	The A Caller in the Script	B	The C Caller in the Script	C	The C Caller in the Script	D	The D Caller in the Script
Value	Description										
A	The A Caller in the Script										
B	The C Caller in the Script										
C	The C Caller in the Script										
D	The D Caller in the Script										

Children:

None

SipFlowMessage

A single SIP message in the flow.

Writeable Attributes:

Writeable Attribute	Description
Headers	The definition of the SIP Headers. Tcl safe String, use \r and \n for newline characters. Type: String Default: <DEPENDS UPON FLOW/MESSAGE>
Sdp	The definition of the SIP SDP body. Tcl safe String, use \r and \n for newline characters. Type: String Default: <DEPENDS UPON FLOW/MESSAGE>
UseDefaultHeaders	Indicates if the Headers should be defaulted, or if the user-defined Headers attribute is used by the flow. Only possible if AllowsEditingHeaders is true. Type: Boolean Default: True
UseDefaultSdp	Indicates if the SDP should be defaulted or if the user-defined SDP attribute is used by the flow. Only possible if AllowsEditingSdp is true. Type: Boolean Default: True

Read-only Attributes:

Read-only Attribute	Description
AllowsEditingHeaders	Indicates if the default Headers can be overridden. Type: Boolean

AllowsEditingSdp	Indicates if the default SDP can be overridden. Type: Boolean
Category	Indicates which Super-Flow Category the message is a member of. Only applies to Super-Flows, ID=999. Categories include: Call, Registration, Options, Media, etc. Type: String
DefaultId	The Message Default unique ID Type: int
Enabled	Indicates if the message is enabled in a Super-Flow. When part of a Super-Flow, all messages are included, but only certain messages apply based on the test case configuration. This flag is updated when you validate the test case. Only applies when a Category is set and part of a Super-Flow. Type: Boolean
From	The Party the message is sent from. Type: String
Id	Unique ID for the Message within the given Flow or Action. This ID will never change even if new messages are added or messages are re-arranged. When modifying messages from Tcl API you should access messages by their ID using <code>Is::get \$object -children-MessageById(ID)</code> . Using <code>Is::get \$object -children-Message(INDEX)</code> could result in issues over time if messages are rearranged. If a message is removed in a future release, it could mean the ID is no longer found, that will require a change to the script. Type: int
Name	The MessageType Displayed Name. Type: String
To	The Party the message is sent to. Type: String
Type	The MessageType Tcl ID Type: int
TypeStr	The MessageType ID Type: String

Children:

Child	Description
BodyCopiedFiller	List of Body Part Fillers copied to Paste Buffers. Type: SipFillerCopyToBuffer Multiplicity: 0-n

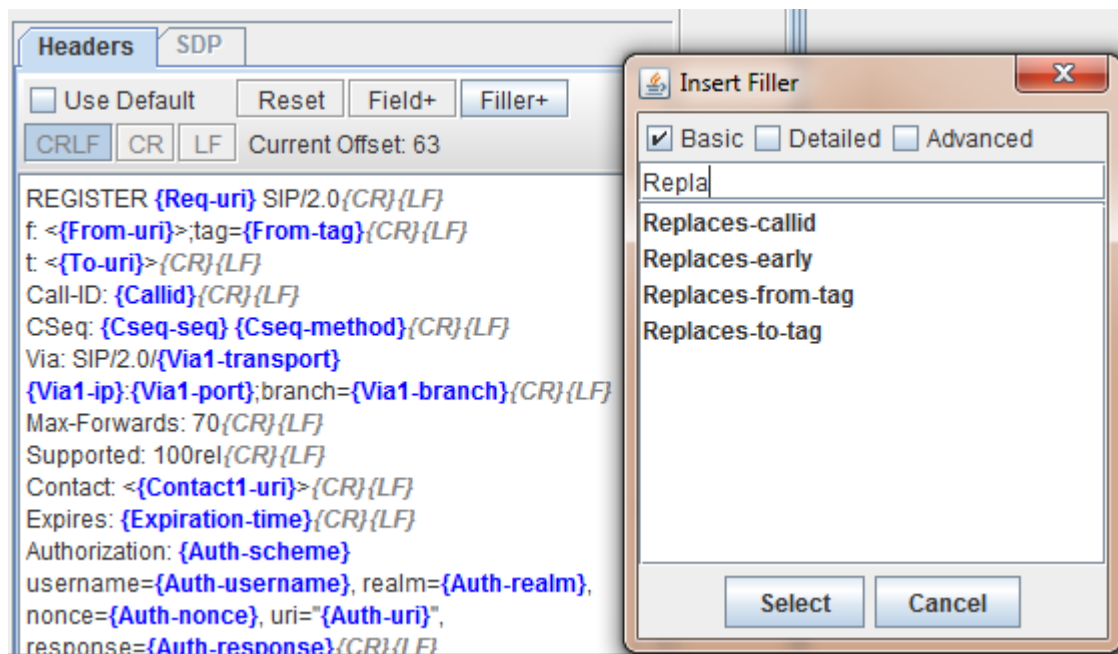
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HeaderCopiedFiller	List of Header Part Fillers copied to Paste Buffers. Type: SipFillerCopyToBuffer Multiplicity: 0-n
HeadersFiller	List of Fillers for the Headers Type: SipFlowFiller Multiplicity: 0-n
MandatoryParam	ISUP Message Mandatory Parameters. Only applicable to Nc/ISUP messages Type: IsupParameter Multiplicity: 0-n
OptionalParam	ISUP Message Optional Parameters. Only applicable to Nc/ISUP messages. Type: IsupParameter Multiplicity: 0-n
SdpFiller	List of Fillers for the SDP Type: SipFlowFiller Multiplicity: 0-n

SipFlowFiller

Encapsulates a Filler variable for both SIP Headers and SIP SDP part.



Writeable Attributes:

Writeable Attribute	Description
Id	The ID of the filler. Headers and SDP each have their own sets of Fillers. The best practice: Build your SIP Flow in the GUI and use Save-As-Tcl. Type: int Default: 0 Min: 0 Max: 65535
Offset	The location within the Headers/SDP where the filler should be inserted. Type: int Default: 0 Min: 0 Max: 2000.0

Read-only Attributes:

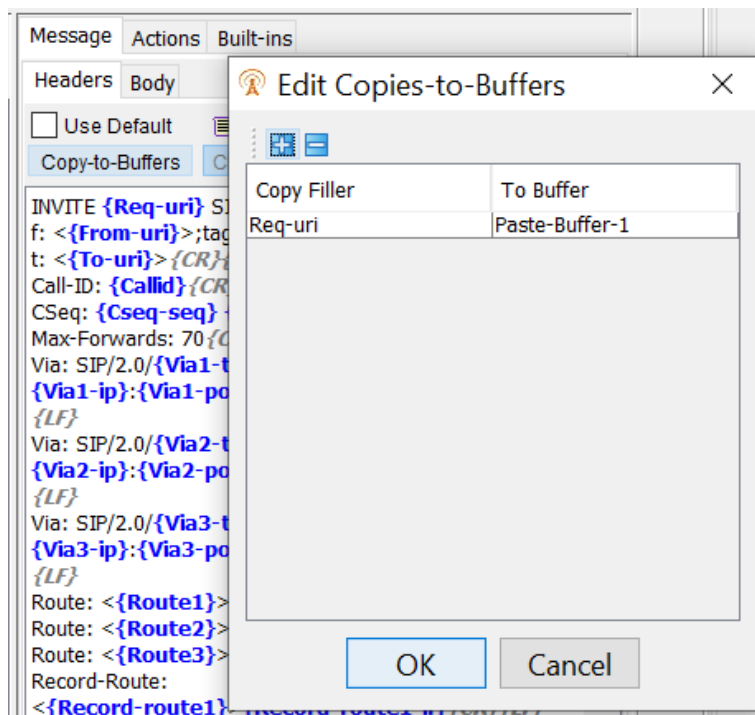
None

Children:

None

SipFillerCopyToBuffer

Encapsulates a Copy-Filler-To-Buffer variable for both SIP Headers and SIP Body part.



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Tcl API Object and Perform Function Reference

Writeable Attributes:

Writeable Attribute	Description
FillerId	The ID of the filler. Headers and Body each have their own sets of Fillers. The best practice: Build your SIP Flow in the GUI and use Save-As-Tcl. Type: int Default: 0 Min: 0 Max: 65535
BufferId	The ID of the Buffer to copy the filler too. Type: int Default: 1 Min: 1 Max: 10

Read-only Attributes:

None

Children:

None

IsupParameter

A single top-level parameter for Nc/ISUP Messages.

Writeable Attributes:

Writeable Attribute	Description
OptionallyEnabled	Enables or disables an Optional Parameter. Only applicable if in the OptionalParams list. Type: Boolean

Read-only Attributes:

Read-only Attribute	Description
Code	The parameter CODE. Type: Boolean
Id	The parameter ID. Type: int
Name	The Parameter name. Type: String
VariablePart	The Message Default unique ID. Type: int

Children:

Child	Description
Field	The Field objects. Type: IsupField Multiplicity: 1-n

IsupField

An IsupParameter's field. Applies to Nc/ISUP messages.

Writeable Attributes:

Writeable Attribute	Description
Value	The value of the parameter field. Type: String Each field has its own validation of the value, usually HEX, INT, or OCTETS

Read-only Attributes:

Read-only Attribute	Description
Bits	The field size in bits, if fixed. Type: int
Type	The field type. Type: String
MaxLength	The field max OCTET length, if variable size. Type: int
MinLength	The field min OCTET length, if variable size. Type: int
Name	The field name Type: String

Children:

None

Step

The Step class is a wrapper around an Action. An Action specifies an atomic list of SIP Control Messages, and the Step includes Role/Caller assignments for that Action relative to the SIP Script.

Writeable Attributes:

Writeable Attribute	Description
ActionId	The Action ID for the Action in this Step. Type: int See the GetSipActionStep perform function for a list of IDs.

Read-only Attributes:

None

Children:

Child	Description
Action	The Action object. Type: Auto-Generated Action Multiplicity: 1
Role	The Role-To-Caller relationships. Type: Auto-Generated Role Multiplicity: 2-n

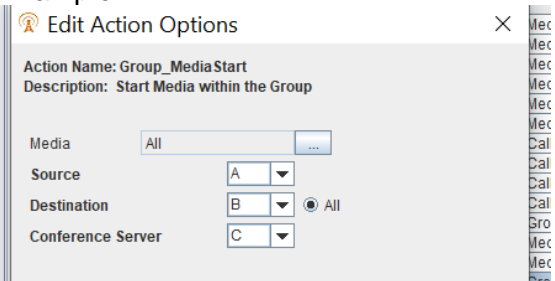
Action

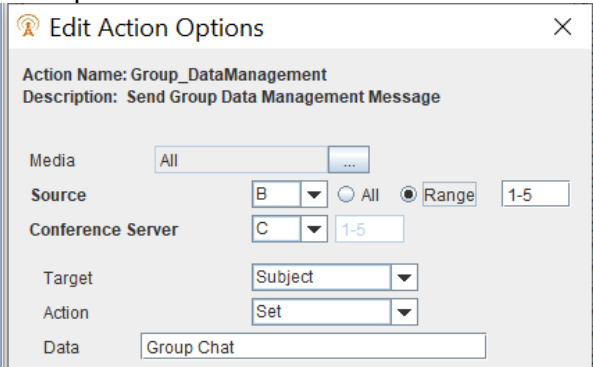
The Action class specifies an atomic list of SIP Control Messages for the VoLTE. Some Actions can contain inner Provisional Actions. Some Actions are only valid for ODCs or Supplementary Services.

Writeable Attributes:

Writeable Attribute	Description
InsertionIndex	The index in the parent Action where this Action is inserted. This only applies to Provisional Actions. Type: int

Read-only Attributes:

Read-only Attribute	Description
BCallerAsList	<p>Flag to indicate that this Action only supports the B-Caller in the ALL-Subscribers mode. That is, if the B-Subscribers-List feature is enabled, there is more than 1 subscriber in the B-Caller, then this Action only supports the B-Caller as using ALL subscribers in the B-Caller. This flag is mutually exclusive from BCallerAsRange.</p> <p>Example:</p>  <p>When true, the Role SubIndex and EndingSubIndex should not be changed from the default value of 0, to indicate "ALL". The default mode, when both BCallerAsRange and BCallerAsList set to false, is to allow ALL or One subscriber.</p> <p>Type: Boolean</p>

<p>BCallerAsRange</p>	<p>Flag to indicate that this Action only supports the B-Caller in the ALL-Subscribers or Range-of-Subscribers mode. That is, if the B-Subscribers-List feature is enabled, there is more than 1 subscriber in the B-Caller, then this Action supports the B-Caller as using ALL or a range of subscribers in the B-Caller. This flag is mutually exclusive from BCallerAsList.</p> <p>Example:</p>  <p>When true, Role EndingSubIndex can be > SubIndex to indicate the range. The default mode, when both BCallerAsRange and BCallerAsList set to false, is to allow ALL or One subscriber.</p> <p>Type: Boolean</p>												
<p>ClassId</p>	<p>The Class ID for the Action.</p> <p>Type: int Possible Values:</p> <table border="1" data-bbox="597 1077 1490 1262"> <thead> <tr> <th>Value</th> <th>Class Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Signaling</td> </tr> <tr> <td>2</td> <td>Media</td> </tr> <tr> <td>3</td> <td>Provisional</td> </tr> <tr> <td>4</td> <td>Other</td> </tr> <tr> <td>5</td> <td>Independent</td> </tr> </tbody> </table>	Value	Class Description	1	Signaling	2	Media	3	Provisional	4	Other	5	Independent
Value	Class Description												
1	Signaling												
2	Media												
3	Provisional												
4	Other												
5	Independent												
<p>ForOdcOnly</p>	<p>Flag to indicate that this Action is only valid for ODC Scriptings.</p> <p>Type: Boolean</p>												
<p>Id</p>	<p>The Action ID</p> <p>Type: int See the GetSipActionStep perform function for a list of IDs.</p>												
<p>Name</p>	<p>The Name of the Action</p> <p>Type: String</p>												
<p>Notes</p>	<p>The descriptive information about the Action.</p> <p>Type: String</p>												
<p>Supplementary</p>	<p>Flag to indicate that this Action is only valid for Supplementary Services.</p> <p>Type: Boolean</p>												

Children:

Child	Description
Message	A Message in the Action. Type: Auto-Generated SipFlowMessage Multiplicity: 1-n
MessageById	This is an alternate way to access SipFlowMessage objects, it retrieves the objects by their ID not their Index. -children-MessageById(ID) Type: int Value: 1-based unique ID for each message in the list
Property	A custom property for the Action. Type: Auto-Generated or User-Generated Property Multiplicity: 0-n
Provisional	A child Provisional Action. Only applies to supporting Actions. Type: User-Generated Action Multiplicity: 0-n
Role	The Action Party-ID to Step Role relationship. Type: Auto-Generated Role Multiplicity: 2-n

Role

A single Role configuration in a SIP Script.

Writeable Attributes:

Writeable Attribute	Description
AssignedCaller ParentPartyId Value2 (deprecated)	For Steps: The Caller assigned to the Role. Assigns Action Parties to specific Callers. For Actions: The Message Role assigned to the Party-ID. In general, Assigned Caller Or ParentPartyId should be set to Spec's value. For Provisional Actions: The Party-ID of the Provisional to be associated with the Parent Party-ID. For example, you may want the Provisional Action's SOURCE to be the DESTINATION in the parent Action. Type: String/int
EndingSubIndex	Supported only on the B-Caller, when the B-List Subscriber feature is enabled, the parent Action supports the BCallerAsRange, and the B-Caller has more than one Subscriber (NumSubsPerCaller >1). Sets the Ending Subscriber Index within the B-Caller to assign the range of subscribers to this Role. 0 indicates no range, either single Subscriber based on SubIndex or ALL if SubIndex is also 0. Type: int Default: 0 Min: 0 or SubIndex Max: 100 (the B-List max) or NumSubsPerCaller

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SubIndex	<p>Supported only on the B-Caller, when the B-List Subscriber feature is enabled, the parent Action supports BCallerAsRange (All or Range) and does not support BCallerAsList (All only) and the B-Caller has more than one Subscriber (NumSubsPerCaller >1). Sets the (Starting) Subscriber Index within the B-List to assign this Role to. 0 indicates ALL Subscribers.</p> <p>Type: int Default: 1 Min: 0 Max: 100 (the B-List max) or NumSubsPerCaller or EndingSubIndex</p>
----------	---

Read-only Attributes:

Read-only Attribute	Description																																		
Name Value0 (deprecated)	<p>For Steps: The Caller's Name For Actions: The Action's Label for this Role's Party ID.</p> <p>Type: String Default: A Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>A</td><td>The A Caller in the Script</td></tr> <tr><td>B</td><td>The B Caller in the Script</td></tr> <tr><td>C</td><td>The C Caller in the Script</td></tr> <tr><td>D</td><td>The D Caller in the Script</td></tr> <tr><td>E</td><td>The E Caller in the Script</td></tr> </tbody> </table>	Value	Description	A	The A Caller in the Script	B	The B Caller in the Script	C	The C Caller in the Script	D	The D Caller in the Script	E	The E Caller in the Script																						
Value	Description																																		
A	The A Caller in the Script																																		
B	The B Caller in the Script																																		
C	The C Caller in the Script																																		
D	The D Caller in the Script																																		
E	The E Caller in the Script																																		
PartyId Value1 (deprecated)	<p>For Steps: The Action's Party For Actions: The Action's Party ID for this Role.</p> <p>Type: int</p> <p>For Actions: Default: 1</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>1</td><td>Source</td></tr> <tr><td>2</td><td>Destination</td></tr> <tr><td>3</td><td>Busy</td></tr> <tr><td>4</td><td>Out Of Service</td></tr> <tr><td>5</td><td>Refer</td></tr> <tr><td>6</td><td>Original Destination</td></tr> <tr><td>7</td><td>No Answer</td></tr> <tr><td>8</td><td>Interrupter</td></tr> <tr><td>9</td><td>AS</td></tr> <tr><td>10</td><td>Conference Server</td></tr> <tr><td>16</td><td>Application Server</td></tr> <tr><td>17</td><td>MCPTT Server</td></tr> <tr><td>50</td><td>Wait Party</td></tr> <tr><td>51</td><td>Send Party</td></tr> <tr><td>254</td><td>IMS Node</td></tr> <tr><td>-1</td><td>Any Subscriber</td></tr> </tbody> </table>	Value	Description	1	Source	2	Destination	3	Busy	4	Out Of Service	5	Refer	6	Original Destination	7	No Answer	8	Interrupter	9	AS	10	Conference Server	16	Application Server	17	MCPTT Server	50	Wait Party	51	Send Party	254	IMS Node	-1	Any Subscriber
Value	Description																																		
1	Source																																		
2	Destination																																		
3	Busy																																		
4	Out Of Service																																		
5	Refer																																		
6	Original Destination																																		
7	No Answer																																		
8	Interrupter																																		
9	AS																																		
10	Conference Server																																		
16	Application Server																																		
17	MCPTT Server																																		
50	Wait Party																																		
51	Send Party																																		
254	IMS Node																																		
-1	Any Subscriber																																		

Children:

None

Property

A single property configuration in a SIP Action. This list includes some of the known property names: USAGE, SOURCE, MODE, TIME_MS, WAIT_TIME_SEC, SEND_TIME_SEC, TONE1_HZ, TONE2_HZ, DTMF_STRING, QUAL_TIME_SEC, EVENT, EXPIRES, SUBSCRIPTION_STATE, SERVICE_CODE, MESSAGE, CONTENT_TYPE, FILE, HTTP_DMF, FILE_SERVER, DTMF_AUTO_INCREMENT, DTMF_TIMES. Each of these properties will have its own value rules, within the context of the Action they belong to. Refer to the online help or contact Customer Support for more details.

Writeable Attributes:

Writeable Attribute	Description
Value0	The Property Name Type: String
Value1	The Property Value Type: String

Read-only Attributes:

None

Children:

None

Parameter Class: HttpFlow

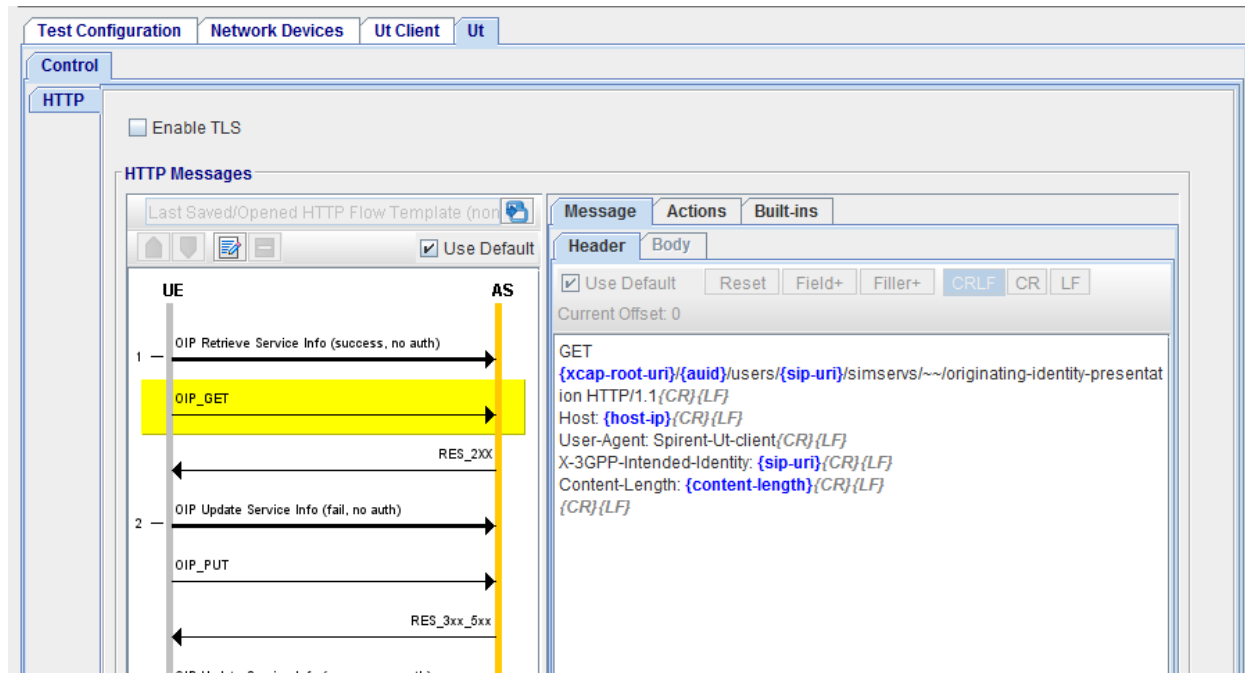
The HttpFlow class is for parameters that specify the HTTP Script for the WebRTC, Ut, UtUb, Ub, CSC-4, Le, and PC3PC8 Interfaces. It follows a similar design pattern as a SIP Flow, SIP Supplementary Script, except that there are no Callers or Roles, just Actions and Messages. The Class is used in two specific modes: HTTP Flow and HTTP Script. As an HTTP Flow, there is one full "Super-Flow" with all possible messages, each one assigned to a particular Category. The ID=999 indicates the Super-Flow. Messages that apply to the current configuration are *enabled* and the rest are *disabled*. As an HTTP Script, the ID should be 0, and the HttpFlow contains a list of HttpFlowSteps which each contain one HttpFlowAction. And HttpFlowActions contain lists of HttpFlowMessages.

Recommendation: Use the GUI as the Tcl API wizard for HTTP Flows.

When accessing HttpFlowMessages within a Flow or Action, using the message index is subject to conflicts over time if the list of messages changes. Instead, follow the Save-as-Tcl pattern and access/reference messages by their ID. `ls::get $flow -children-MessageById(ID)`.

```
set http_msg_ [ls::get $http_flow_ -children-MessageById(13)]
ls::config $http_msg_ -useDefaultHeaders false
ls::config $http_msg_ -Headers "POST /chat/chat/v1//subscriptions HTTP/1.1\r\nAccept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signe
d-exchange;v=b3\r\nAccept-Encoding: gzip, deflate, br\r\nAccept-Language: en-US,en\r\nCache-Control:
no-cache\r\nConnection: keep-alive\r\nContent-Length: \r\nContent-Type: \r\nHost:
webrtc.spirent.com\r\nPragma: no-cache\r\nReferer: \r\nUser-Agent: Mozilla/5.0 (Windows NT 10.0;
Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/78.0.3904.97 Safari/537.36\r\nX-Client-
ID: \r\nX-Session-ID: \r\nCookie:\r\nCookie:\r\nCookie:"
```

In the GUI, an HttpFlow class parameter object is represented as shown:



In the figure, you can see the Actions as numbered thick arrows that can be expanded to show the individual messages as thin lines within the Action.

Writeable Attributes:

Writeable Attribute	Description
UseDefault	Determines if the SIP Flow is editable on a global level. If true, the default SIP Flow is used; if false, individual messages can be optionally edited, if allowed. Type: Boolean Default: True

Read-only Attributes:

Read-only Attribute	Description
Class	The class name for this parameter type. Type: String Value: HttpFlow
Interface	The name of the interface this SIP Flow parameter is for. Type: String Value: Custom
Library	The Library ID where the last saved template resides. Type: int

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Name	For SIP Flows, this is the last saved template name. For SIP Scripts, this is the last saved template name. For ODC SIP Scripts, this is the name of the Script. Type: String
Notes	A brief description of the SIP Flow. Not used with SIP Scripts. Type: String Value: Custom

Children:

Child	Description
Message	A message in the HTTP flow. Used for FlowId=999 Super-Flows. Type: Auto-Generated HttpFlowMessage Multiplicity: 0-n
MessageById	This is an alternate Getter for HttpFlowMessage objects, it retrieves the objects by their ID not their Index. -children-MessageById(ID) Type: int Value: 1-based unique ID for each message in the list
Step	A Step containing an Action in the HTTP Script, FlowId=0. Steps are created using the GetHttpActionStep perform function and added to the HttpFlow object using ls::config. set step_ [ls::perform GetHttpActionStep 285] ls::config \$sip_script_ -children-Step \$step_ Type: User-Generated HttpStep Multiplicity: 0-n

HttpFlowStep

The HttpFlowStep class is a wrapper around an HttpFlowAction. An HttpFlowAction specifies an atomic list of HTTP Messages in the Ut Interface.

Writeable Attributes:

Writeable Attribute	Description
ActionId	The Action ID for the HttpFlowAction in this HttpFlowStep. Type: int See the GetHttpActionStep perform function for a list of IDs.

Read-only Attributes:

None

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Children:

Child	Description
Action	The HttpFlowAction object. Type: Auto-Generated HttpFlowAction Multiplicity: 1

HttpFlowAction

The HttpFlowAction class specifies an atomic list of HTTP Messages for the Ut Interface. Some actions can have editable child properties, such as Delay Time.

Writeable Attributes:

None

Read-only Attributes:

Read-only Attribute	Description
Id	The Action ID Type: int See the GetHttpActionStep perform function for a list of IDs.
Name	The Name of the Action Type: String
Notes	The descriptive information about the Action. Type: String

Children:

Child	Description
Message	A Message in the Action. Type: Auto-Generated HttpFlowMessage Multiplicity: 1-n
MessageById	This is an alternate Getter for HttpFlowMessage objects, it retrieves the objects by their ID not their Index. -children-MessageById(ID) Type: int Value: 1-based unique ID for each message in the list
Property	A custom property for the Action. Type: Auto-Generated Multiplicity: 0-n

HttpFlowProperty

A single property configuration in an HttpFlowAction.

Writeable Attributes:

Writeable Attribute	Description
Value0	The Property Name Type: String
Value1	The Property Value Type: String

Read-only Attributes:

None

Children:

None

HttpFlowMessage

A single HTTP message in the flow.

Writeable Attributes:

Writeable Attribute	Description
Body	The definition of the HTTP Body. Tcl safe String, use \r and \n for newline characters. Only writeable if AllowsEditingBody is true. UseDefaultBody should be false. Type: String Default: <DEPENDS UPON FLOW/MESSAGE>
Headers	The definition of the HTTP Headers. Tcl safe String, use \r and \n for newline characters. Only writeable if AllowsEditingHeaders is true. UseDefaultHeaders should be false. Type: String Default: <DEPENDS UPON FLOW/MESSAGE>
UseDefaultBody	Indicates if the Body should be defaulted, or if the user-defined Body attribute is used by the flow. Only possible if AllowsEditingBody is true. Type: Boolean Default: True
UseDefaultHeaders	Indicates if the Headers should be defaulted, or if the user-defined Headers attribute is used by the flow. Only possible if AllowsEditingHeaders is true. Type: Boolean Default: True

Read-only Attributes:

Read-only Attribute	Description
AllowsEditingHeaders	Indicates if the default Headers can be overridden. Type: Boolean
AllowsEditingBody	Indicates if the default Body can be overridden. Type: Boolean
Category	Indicates which Super-Flow Category the message is a member of. Only applies to Super-Flows, ID=999. Categories include: Call, Registration, Options, Media, etc. Type: String
DefaultId	The Message Default unique ID Type: int
Enabled	Indicates if the message is enabled in a Super-Flow. When part of a Super-Flow, all messages are included, but only certain messages apply based on the test case configuration. This flag is updated when you validate the test case. Only applies when a Category is set and part of a Super-Flow. Type: Boolean
From	The Party the message is sent from. Type: String
Id	Unique ID for the Message within the given Flow or Action. This ID will never change even if new messages are added or messages are re-arranged. When modifying messages from Tcl API you should access messages by their ID using <code>Is::get \$object -children-MessageById(ID)</code> . Using <code>Is::get \$object -children-Message(INDEX)</code> could result in issues over time if messages are rearranged. If a message is removed in a future release, it could mean the ID is no longer found, that will require a change to the script. Type: int
Name	The MessageType Displayed Name. Type: String
To	The Party the message is sent to. Type: String
Type	The MessageType Tcl ID Type: int
TypeStr	The MessageType ID Type: String

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Children:

Child	Description
BodyFiller	List of Fillers for the Body. Should always be empty. Type: HttpFlowFiller Multiplicity: 0-n
HeadersFiller	List of Fillers for the Headers Type: HttpFlowFiller Multiplicity: 0-n

HttpFlowFiller

Encapsulates a Filler variable for HTTP Header part, currently Body does not have fillers defined.

Writable Attributes:

Writable Attribute	Description
Id	The ID of the filler. The best practice: Build your HTTP Flow in the GUI and use Save-As-Tcl. Type: int Default: 0 Min: 0 Max: 65535
Offset	The location within the Headers where the filler should be inserted. Type: int Default: 0 Min: 0 Max: 65535

Read-only Attributes:

None

Children:

None

UeInfoConfig

The configuration of the UE Informational Reporting and Monitoring feature.

Writeable Attributes:

Writeable Attribute	Description
FirstMonitoredUe	The 1-based index of the first UE to be monitored by the test server. Type: int Min: 1 Max: <total subscribers in test case>
FirstReportedUe	The 1-based index of the first UE to be reported live to the UI. This must be within the range of monitored UEs. 0 indicates no live reporting. Type: int Min: <FirstMonitoredUe>or 0 Max: <last monitored UE>
TotalMonitoredUes	The number of UEs to be monitored by the test server. The maximum is limited to 1000 total, for all test cases on a test server, but is also limited by the number of subscribers in the test case. Type: int Min: 0 Max: 1000
TotalReportedUes	The number of UEs to be reported live to the UI. The live reported UE range must be within the range of the monitored UEs and is limited to a total of 32 UEs across all test cases on a test server. 0 indicates no live reporting. Type: int Min: 0 Max: 32
UpdateInterval	The number of seconds between reporting updates from the test server. Type: int Min: 5 Max: 60

Read-only Attributes:

Read-only Attribute	Description
MaxUes	The total number of UEs in the test. This should be the same as the total number of subscribers in the test. This value is only updated after a test session has been validated. Type: int
MaxMonitoredUes	The maximum number of UEs that can be monitored per test server. Type: int: VALUE=1000
MaxReportedUes	The maximum number of UEs that can be live reported per test server. Type: int VALUE=32

Children:

None

UeInfoCriterion

The UeInfoCriterion object represents a single pass/fail criterion against UE Info.

Writeable Attributes:

Writeable Attribute	Description								
ResultType	<p>Determines the status of the criterion when the condition is true or expired.</p> <p>Type: Enum Default: PASS</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PASS</td> <td>The criterion is set to PASSED when the condition is true, FAILED when expired.</td> </tr> <tr> <td>FAIL</td> <td>The criterion is set to FAILED when the condition is true, PASSED when expired.</td> </tr> <tr> <td>LOG</td> <td>The criterion is set to OCCURRED when the condition is true and left PENDING when expired.</td> </tr> </tbody> </table>	Value	Description	PASS	The criterion is set to PASSED when the condition is true, FAILED when expired.	FAIL	The criterion is set to FAILED when the condition is true, PASSED when expired.	LOG	The criterion is set to OCCURRED when the condition is true and left PENDING when expired.
Value	Description								
PASS	The criterion is set to PASSED when the condition is true, FAILED when expired.								
FAIL	The criterion is set to FAILED when the condition is true, PASSED when expired.								
LOG	The criterion is set to OCCURRED when the condition is true and left PENDING when expired.								

Read-only Attributes:

Read-Only Attribute	Description												
Description	<p>A detailed description of the Criterion including all Conditions.</p> <p>Type: String</p>												
Status	<p>The overall status of this criterion for the current test run. This is only populated when a test has completed.</p> <p>Type: Enum Default: "N/A"</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>Test has not started or not applicable.</td> </tr> <tr> <td>PENDING</td> <td>Test is running, criterion has not fired or expired.</td> </tr> <tr> <td>PASSED</td> <td>The criterion has PASSED</td> </tr> <tr> <td>FAILED</td> <td>The criterion has FAILED</td> </tr> <tr> <td>OCCURRED</td> <td>The LOG Criterion has OCCURRED</td> </tr> </tbody> </table>	Value	Description	N/A	Test has not started or not applicable.	PENDING	Test is running, criterion has not fired or expired.	PASSED	The criterion has PASSED	FAILED	The criterion has FAILED	OCCURRED	The LOG Criterion has OCCURRED
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PASSED	The criterion has PASSED												
FAILED	The criterion has FAILED												
OCCURRED	The LOG Criterion has OCCURRED												

Children:

Child	Description
UeInfoCondition	<p>The Condition that the criterion monitors. These must be added in a specific order, see the UeInfoCondition object.</p> <p>Example: <code>Is::create UeInfoCondition -under \$myCriterion</code></p> <p>Type: UserCreated Multiplicity: 1-4</p>

UeInfoCondition

This is a condition to check the value of a UE Info Report value. There can be up to four (4) UeInfoConditions in a UeInfoCriterion. The first one must be the “IF” condition with a Source of FIELD. Next, there can be any combination of one of each UE_INDEX, BEARER_INDEX, or FIELD, which are the “FOR” conditions. UE_INDEX should always be before BEARER_INDEX. Both UE_INDEX and BEARER_INDEX should be before the FOR FIELD.

Examples:

```
0 Source=FIELD (IF) IF UE_IP == 4.4.4.4
1 Source=UE_INDEX (For) FOR UE INDEX < 50
2 Source=FIELD (FOR) FOR UEs with PGW_IP==5.5.5.5
```

```
0 Source=FIELD (IF)
1 Source=BEARER_INDEX (For)
2 Source=FIELD (FOR)
```

```
0 Source=FIELD (IF)
1 Source=UE_INDEX (For)
2 Source=BEARER_INDEX (For)
3 Source=FIELD (FOR)
```

As with everything in the Tcl API, use the GUI and Save-As-Tcl as a guide.

Writeable Attributes:

Writeable Attribute	Description																		
Field	The name of the first measurement. Type: String Default: ""																		
Operator	The operator to compare the two measurements. Type: Enum Default: EQ Possible Values: <table border="1" data-bbox="565 1465 1490 1772"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>EQ</td> <td>Equals ==</td> </tr> <tr> <td>NEQ</td> <td>Not Equals !=</td> </tr> <tr> <td>GT</td> <td>Greater Than ></td> </tr> <tr> <td>GTE</td> <td>Greater Than or Equals >=</td> </tr> <tr> <td>LT</td> <td>Less Than <</td> </tr> <tr> <td>LTE</td> <td>Less Than Or Equals <=</td> </tr> <tr> <td>MATCHES</td> <td>Matches regular expression</td> </tr> <tr> <td>IN_SUBNET</td> <td>Checks if value is an IP Address within a user-defined subnet.</td> </tr> </tbody> </table>	Value	Description	EQ	Equals ==	NEQ	Not Equals !=	GT	Greater Than >	GTE	Greater Than or Equals >=	LT	Less Than <	LTE	Less Than Or Equals <=	MATCHES	Matches regular expression	IN_SUBNET	Checks if value is an IP Address within a user-defined subnet.
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NEQ	Not Equals !=																		
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MATCHES	Matches regular expression																		
IN_SUBNET	Checks if value is an IP Address within a user-defined subnet.																		

<p>Source</p>	<p>The source object to compare against.</p> <p>Type: Enum Default: FIELD Possible Values:</p> <table border="1"> <thead> <tr> <th data-bbox="565 352 841 384">Value</th> <th data-bbox="846 352 1490 384">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="565 390 841 415">UE_INDEX</td> <td data-bbox="846 390 1490 415">A "FOR" condition that checks against the UE index</td> </tr> <tr> <td data-bbox="565 422 841 474">BEARER_INDEX</td> <td data-bbox="846 422 1490 474">A "FOR" condition that checks against the Default Bearer index</td> </tr> <tr> <td data-bbox="565 480 841 533">FIELD</td> <td data-bbox="846 480 1490 533">Either a "FOR" or "IF" condition that checks against a specific FIELD, as specified in the Field attribute.</td> </tr> </tbody> </table>	Value	Description	UE_INDEX	A "FOR" condition that checks against the UE index	BEARER_INDEX	A "FOR" condition that checks against the Default Bearer index	FIELD	Either a "FOR" or "IF" condition that checks against a specific FIELD, as specified in the Field attribute.
Value	Description								
UE_INDEX	A "FOR" condition that checks against the UE index								
BEARER_INDEX	A "FOR" condition that checks against the Default Bearer index								
FIELD	Either a "FOR" or "IF" condition that checks against a specific FIELD, as specified in the Field attribute.								
<p>Value</p>	<p>The value to compare against. For Operators EQ, NEQ, GT, GTE, LT, and LTE this value must be an integer. For MATCHES, this value should be a Java supported Regular Expression. https://docs.oracle.com/javase/tutorial/essential/regex/</p> <p>Type: String Default: ""</p>								

Read-only Attributes:

None

Children:

None

CsvCriterion

The CsvCriterion object represents a single pass/fail criterion against CSV Report file.

Writeable Attributes:

Writeable Attribute	Description								
FileType	The suffix file name of the csv result file Type: String Default: "" Examples: SrcEnhanced.csv, BasicDataFlow.csv, Message.csv								
ResultType	Determines the status of the criterion when the condition(s) is true or expired. Type: Enum Default: PASS <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PASS</td> <td>The criterion is set to PASSED when the condition is true, FAILED when expired.</td> </tr> <tr> <td>FAIL</td> <td>The criterion is set to FAILED when the condition is true, PASSED when expired.</td> </tr> <tr> <td>LOG</td> <td>The criterion is set to OCCURRED when the condition is true and left PENDING when expired.</td> </tr> </tbody> </table>	Value	Description	PASS	The criterion is set to PASSED when the condition is true, FAILED when expired.	FAIL	The criterion is set to FAILED when the condition is true, PASSED when expired.	LOG	The criterion is set to OCCURRED when the condition is true and left PENDING when expired.
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LOG	The criterion is set to OCCURRED when the condition is true and left PENDING when expired.								

Read-only Attributes:

Read-Only Attribute	Description												
Description	A detailed description of the CsvCriterion including all CsvConditions. Type: String												
Status	The overall status of this criterion for the current test run. This is only populated when a test has completed and results file has been processed. Type: Enum Default: "N/A" <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>Test has not started or not applicable.</td> </tr> <tr> <td>PENDING</td> <td>Test is running, criterion has not fired or expired.</td> </tr> <tr> <td>PASSED</td> <td>The criterion has PASSED</td> </tr> <tr> <td>FAILED</td> <td>The criterion has FAILED</td> </tr> <tr> <td>OCCURRED</td> <td>The LOG Criterion has OCCURRED</td> </tr> </tbody> </table>	Value	Description	N/A	Test has not started or not applicable.	PENDING	Test is running, criterion has not fired or expired.	PASSED	The criterion has PASSED	FAILED	The criterion has FAILED	OCCURRED	The LOG Criterion has OCCURRED
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FAILED	The criterion has FAILED												
OCCURRED	The LOG Criterion has OCCURRED												

Children:

Child	Description
CsvCondition	The Condition that the csv criterion monitors. see the CsvCondition object. Example: Is::create CsvCondition –under \$myCsvCriterion Type: UserCreated Multiplicity: 1-4

CsvCondition

This is a condition to check the value of a column from csv report file. There can be up to four (4) CsvConditions in a CsvCriterion.

As with everything in the Tcl API, use the GUI and Save-As-Tcl as a guide.

Writeable Attributes:

Writeable Attribute	Description																
Field	The name of the csv column. Type: String Default: ""																
Operator	The operator to compare the two values. Type: Enum Default: EQ Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>EQ</td> <td>Equals ==</td> </tr> <tr> <td>NEQ</td> <td>Not Equals !=</td> </tr> <tr> <td>GT</td> <td>Greater Than ></td> </tr> <tr> <td>GTE</td> <td>Greater Than or Equals >=</td> </tr> <tr> <td>LT</td> <td>Less Than <</td> </tr> <tr> <td>LTE</td> <td>Less Than Or Equals <=</td> </tr> <tr> <td>MATCHES</td> <td>Matches regular expression</td> </tr> </tbody> </table>	Value	Description	EQ	Equals ==	NEQ	Not Equals !=	GT	Greater Than >	GTE	Greater Than or Equals >=	LT	Less Than <	LTE	Less Than Or Equals <=	MATCHES	Matches regular expression
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LT	Less Than <																
LTE	Less Than Or Equals <=																
MATCHES	Matches regular expression																
Source	The source object to compare against. Type: Enum Default: FIELD Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>FIELD</td> <td>Either a "FOR" or "IF" condition that checks against a specific FIELD, as specified in the Field attribute.</td> </tr> </tbody> </table>	Value	Description	FIELD	Either a "FOR" or "IF" condition that checks against a specific FIELD, as specified in the Field attribute.												
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FIELD	Either a "FOR" or "IF" condition that checks against a specific FIELD, as specified in the Field attribute.																
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Read-only Attributes:

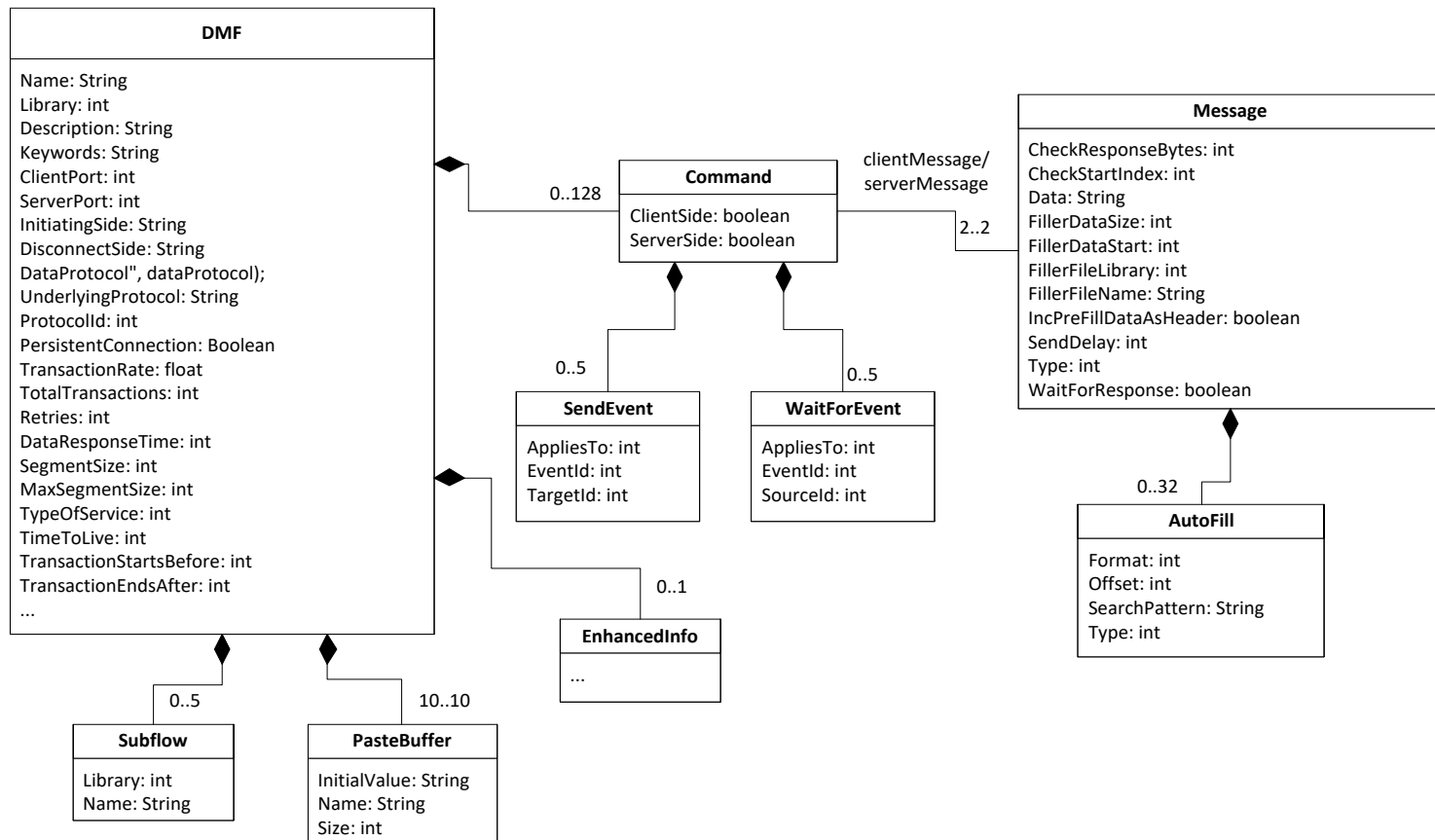
None

Children:

None

DMF

Overview



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Tcl API Object and Perform Function Reference

Basic DMF (bDMF)

Data Message Flow - <New>

General

Data Protocol: ping
 Underlying Layer:
 Start: On Paused On Event
 Total Retries: 0
 Data Response Time (ms): 60000
 Connect Only Persistent Connection
 Distribution Options
 Billing Options

Transactions: Continuous 0
 Transaction Rate (trans/s): 1.0
 UDP Performance Boost
 Burst Transactions Count:
 Packet Size (bytes): 64
 Host Data Expansion Ratio: 1
 Throughput (bits/s): Calculate 1024.0
 Tx/Rx Ratio: 50.000% Tx / 50.000% Rx

On Handover to Target Network

Separate Transaction Rate for Target Network Transaction Rate (trans/s): 1.0

Transport Layer

Client Port Mode: Fixed
 Client Port: 2000 Min: 49152 Max: 65535
 Server Port: 80 TCP Push No FIN/ACK Wait
 Slow Start/Congestion Avoidance/Fast Retransmit
 Max # of packets before ACK: 0
 TCP/SCTP Retransmission Timer:
 Use Dynamic Algorithm
 Fixed Retry Time (ms): 3000
 Window Size (bytes): 32768
 Window Scaling Factor: -1

Initiating Side: Client
 Socket Disc Side: Client
 Disconnect Type: FIN
 Force 3-way Handshake
 Multipath TCP
 Min TCP Header Size (bytes): 20
 Max Segment Size (bytes): 0
 VTAG Mask: 0x0
 VTAG Fixed Value: 0x0
 Payload Protocol ID: 0

DNS Query

Use DNS for Network Host IP Address Use DNS Address in PCO Re-Query each Transaction
 DNS Server IPv4 Address: Domain Name:
 DNS Server IPv6 Address: IPv6 Address Synthesis

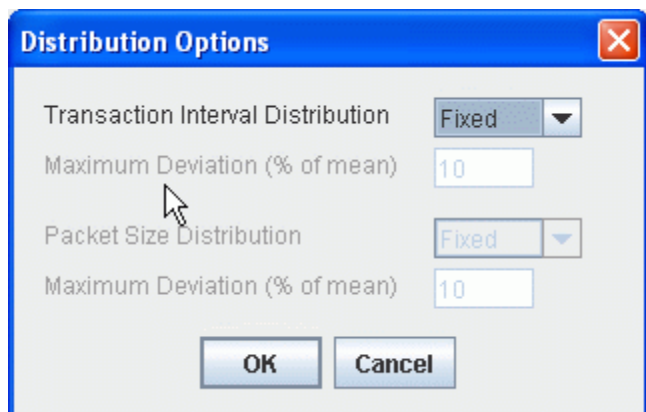
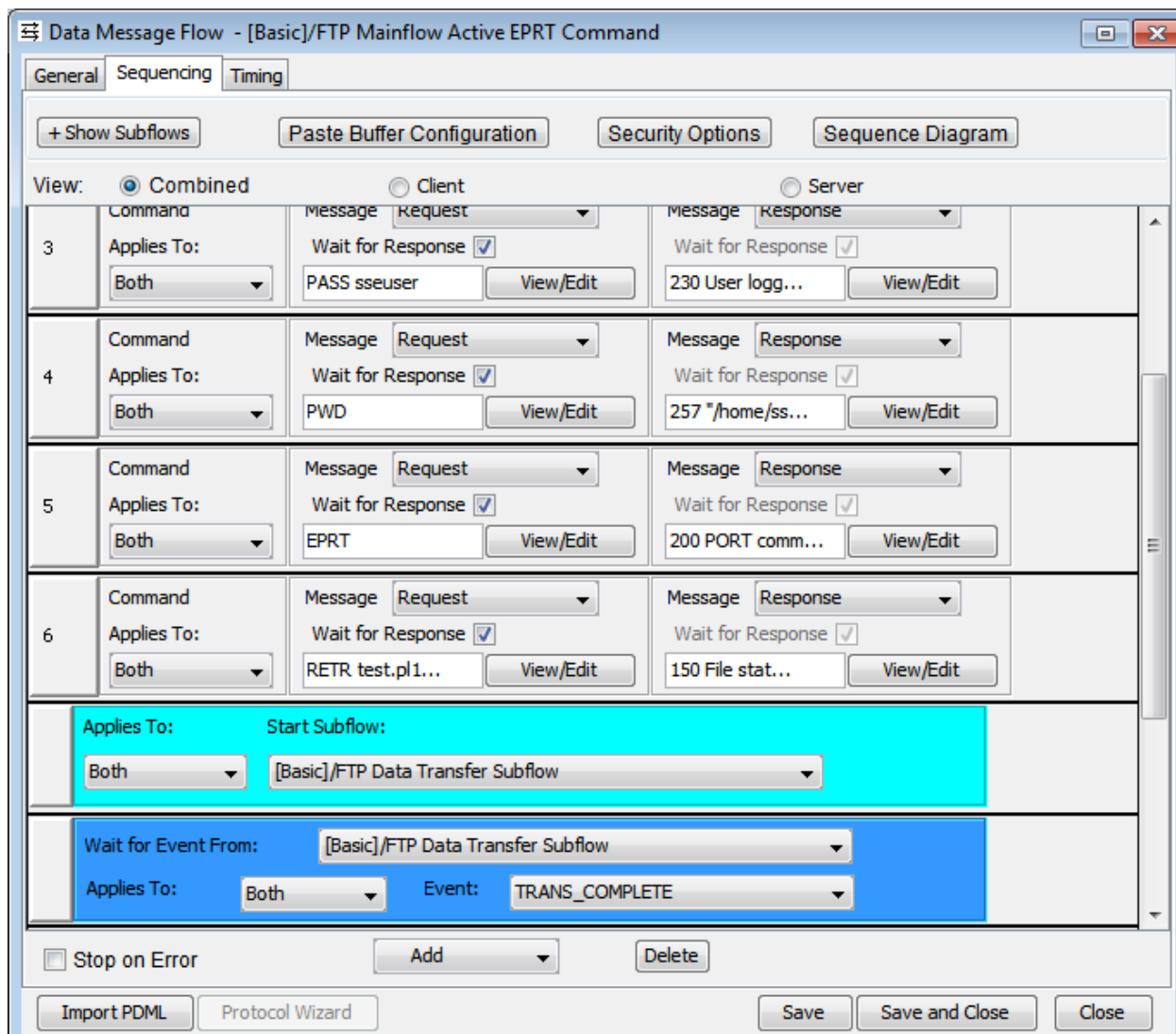
IP Layer

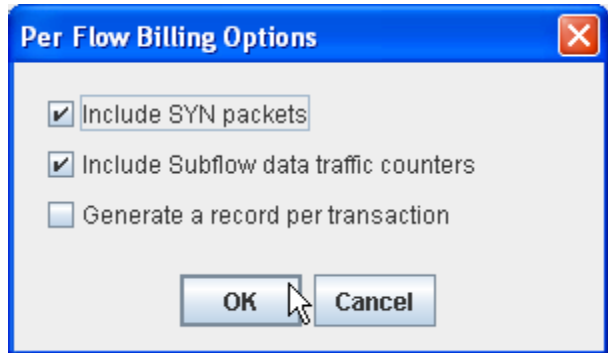
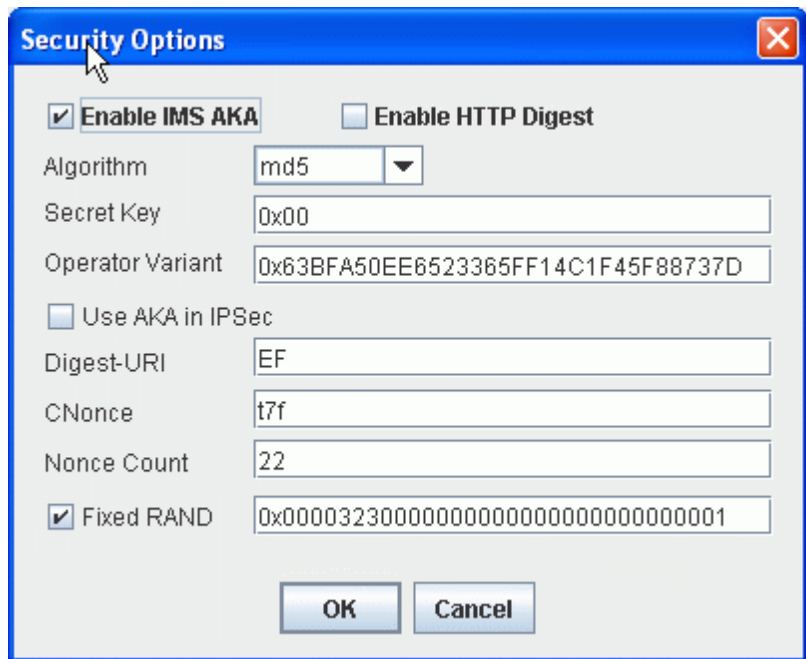
TOS: 0 TTL: 64 Protocol ID: 255 Segment Size (bytes): 1000

Apply DMF Initialization from Test Data File

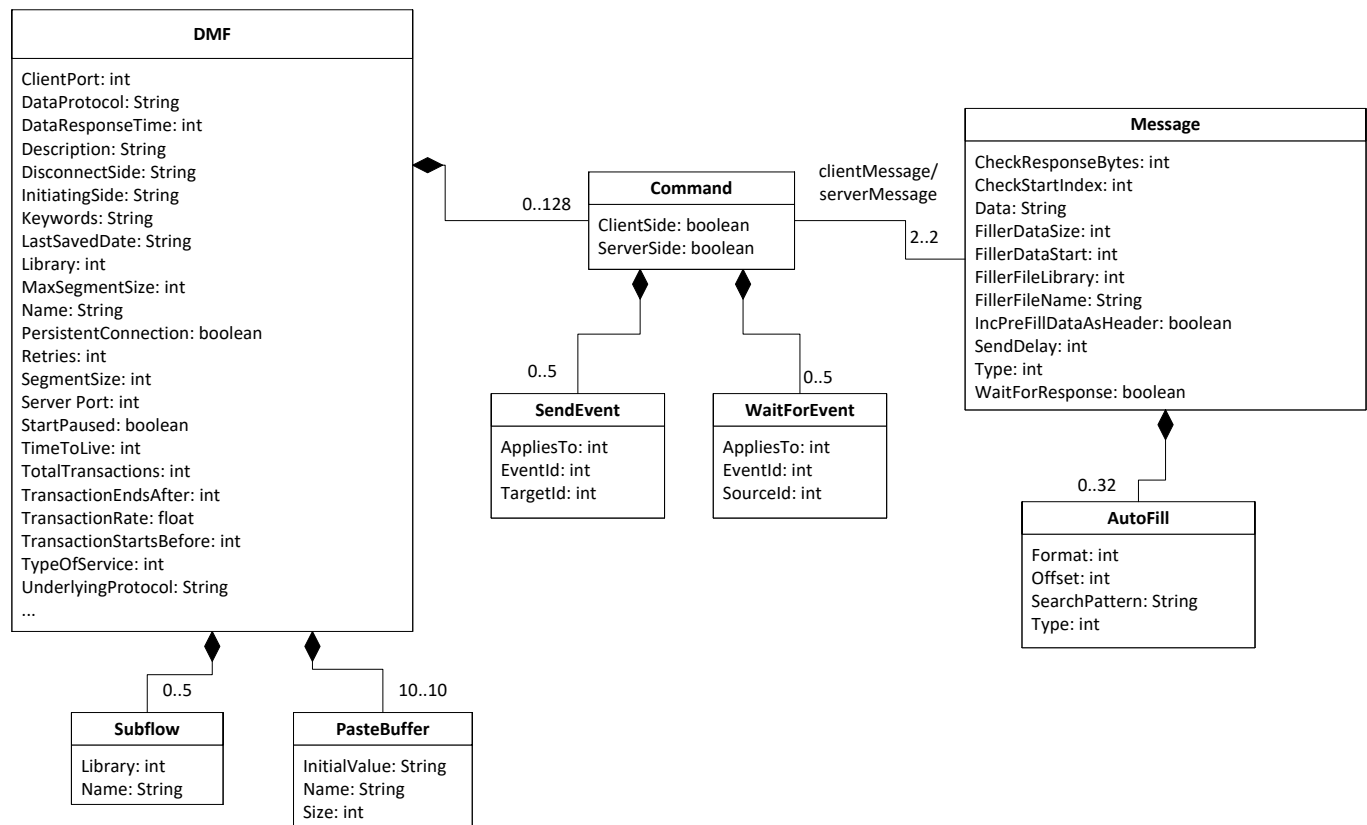
Import PDML Save Save and Close Close

Advanced DMF (aDMF)





Specific objects and attributes for Advanced DMFs:



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Tcl API Object and Perform Function Reference

Lite DMF (IDMF)

Lite Data Message Flow - <New>

General | Message Sequence | Paste Buffers

General

Transactions: Continuous 0 Transaction Rate (trans/s): 1.0

Throughput (bits/s): Calculate 0.0 Tx/Rx Ratio: NaN% Tx / NaN% Rx

Start Paused Total Retries: 5

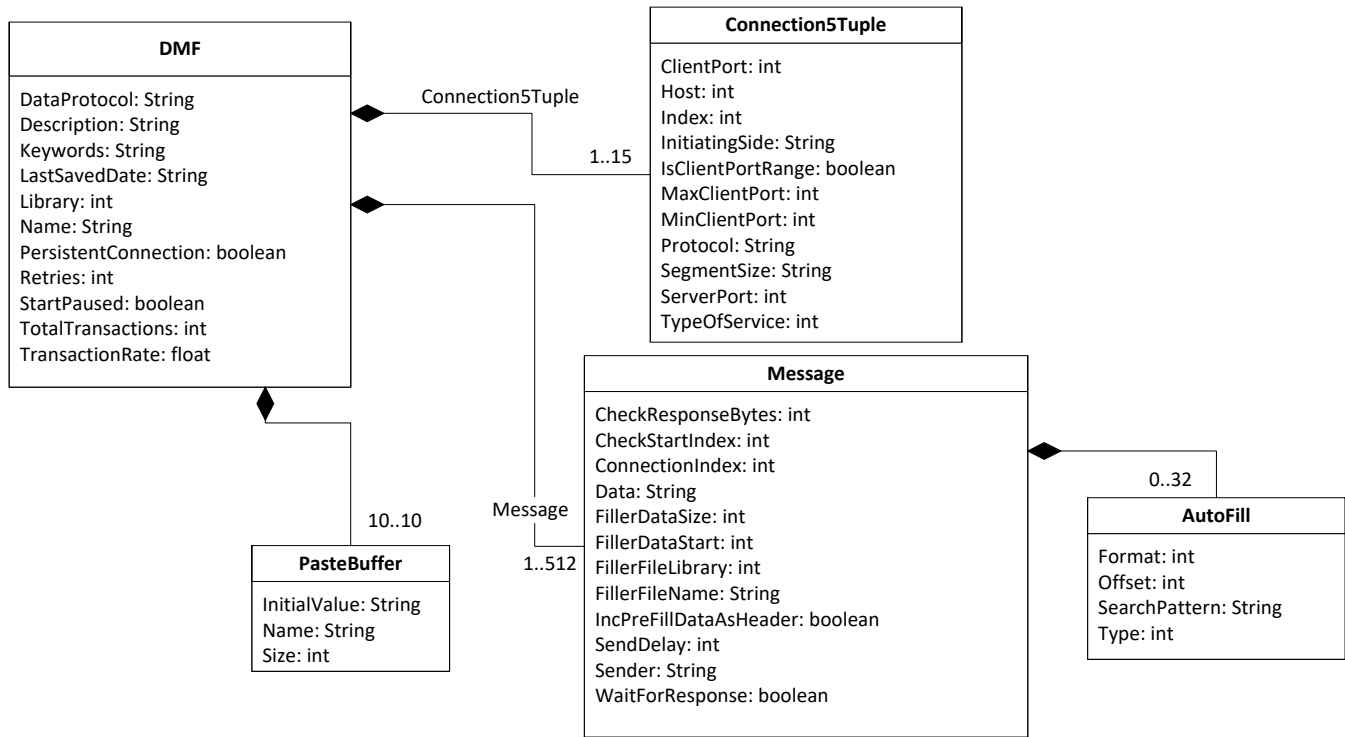
Connections/5-Tuples

Insert | Cut | Copy | Paste | Up | Down | Delete

#	Transport	Source Port	Dest Host	Dest Port	Initiator	TOS/DSCP	Segmen...
0	tcp	Random	0	8080	Client	0	1000
1	tcp	49152-65535 start@54555	1	80	Client	0	1000

Import Studio XML | Save | Save and Close | Close

Specific DMF objects and attributes for Lite DMFs:



Dmf

A Dmf is the top-level Data Message Flow object.

Writeable Attributes:

Writeable Attribute	Description																		
AdvancedRtd	<p>Applies only to Basic UDP/TCP and Fireball UDP/TCP When true, TS will run the improved RTD algorithm otherwise legacy RTD is used</p> <p>Type: Boolean Default: false</p>																		
BurstCount	<p>The number of transactions to execute as quickly as possibly consecutively. Applies only to Basic UDP DMF, DataProtocol==udp.</p> <p>Type: int Default: 1 Min: 1 Max: 20</p>																		
ClientPort	<p>The port or starting port in a range to use for the client-side connection. 0 indicates a random port should be generated.</p> <p>Type: int Default: 0</p>																		
ClnIgnoreAckIn3WayHsEn	<p>Applies only when TCP based Fireball Protocol, fb_tcp/fb_http/fb_https. When true, the client side will ignore the ACK in a 3-way handshake. This should be turned on when running Fireball in NAT environment.</p> <p>Type: Boolean Default: false</p>																		
DataProtocol	<p>The protocol for which this DMF provides a message.</p> <p>Type: Custom String Default: ping Possible Values: (License Limited)</p> <table border="1"> <thead> <tr> <th>Values</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>raw, ping, udp, tcp, sctp</td> <td>Basic Data Protocols</td> </tr> <tr> <td>http, https, http2, ftp, ftps, ftps_implicit, tftp, smtp, pop3, imap, rtcp, rtp, rtpfile, sip, mms, rtsp, wsp, wv, abr, mqtt, custom</td> <td>Advanced Data Protocols</td> </tr> <tr> <td>fb_udp, fb_tcp, fb_http, fb_https, fb_quic, fb_abr</td> <td>Fireball DMFs</td> </tr> <tr> <td>webauth, oauth, oidc</td> <td>Web Auth DMF</td> </tr> <tr> <td>lite</td> <td>Scenarios, Lite DMFs</td> </tr> <tr> <td>rtpvoice, rtpvideo, rtpfile</td> <td>VoLTE Specific DMFs</td> </tr> <tr> <td>dns</td> <td>DNS DMFs</td> </tr> <tr> <td>ulp</td> <td>ULP/SULP DMFs</td> </tr> </tbody> </table>	Values	Description	raw, ping, udp, tcp, sctp	Basic Data Protocols	http, https, http2, ftp, ftps, ftps_implicit, tftp, smtp, pop3, imap, rtcp, rtp, rtpfile, sip, mms, rtsp, wsp, wv, abr, mqtt, custom	Advanced Data Protocols	fb_udp, fb_tcp, fb_http, fb_https, fb_quic, fb_abr	Fireball DMFs	webauth, oauth, oidc	Web Auth DMF	lite	Scenarios, Lite DMFs	rtpvoice, rtpvideo, rtpfile	VoLTE Specific DMFs	dns	DNS DMFs	ulp	ULP/SULP DMFs
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ulp	ULP/SULP DMFs																		
DataResponseTime	<p>The number of milliseconds to wait for a response from the other end.</p> <p>Type: int Default: 3000 Min: 3000 Max: 2,000,000</p>																		
Description	<p>A description of the DMF.</p> <p>Type: String, up to 1024 ASCII characters. Default: ""</p>																		

DisconnectSide	<p>When you use an Advanced Data protocol that runs on top of TCP or SCTP, you can use the drop-down list to specify which entity tears down a TCP/SCTP connection.</p> <p>Type: Custom String Default: Client Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Client</td> <td>The Client initiates the connection or sends first message.</td> </tr> <tr> <td>Server</td> <td>The Server initiates the connection or sends first message.</td> </tr> </tbody> </table>	Value	Description	Client	The Client initiates the connection or sends first message.	Server	The Server initiates the connection or sends first message.
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Client	The Client initiates the connection or sends first message.						
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DnsAsyncMode	<p>Applies only when DataProtocol==dns. When true, this mode will keep a consistent Attempted Transaction Rate.</p> <p>Type: Boolean Default: false</p>						
DnsDomainName	<p>The Domain Name to query as part of the DNS Query feature.</p>						
DnsInPco	<p>Indicates if the DMF will use the DNS IP Address provided in PCO (when applicable).</p> <p>Type: Boolean Default: false</p>						
DnsIpv6AddrSynthesis	<p>Indicates if the DMF will use IPv6 Synthesis to generate IPv6 Addresses from IPv4, when provided with an IPv6 prefix from the DNS server.</p> <p>Type: Boolean Default: false</p>						
DnsServerIpv4Address	<p>The IPv4 Address of the DNS Server used for the DNS Query Feature.</p> <p>Type: String (Valid IPv4 Address) Default: ""</p>						
DnsServerIpv6Address	<p>The IPv6 Address of the DNS Server used for the DNS Query Feature.</p> <p>Type: String (Valid IPv6 Address) Default: ""</p>						
DnsUpdateEachTransaction	<p>Indicates if the DNS is required each time the DMF starts a new transaction.</p> <p>Type: Boolean Default: false</p>						
EstClockSkew	<p>When "ONCE" is selected, Landslide will calculate the first 1000 sample packets then no longer estimate S value anymore (that S value shall be accurate enough for RTT/OWD calculation). When "CONTINUOUS" is selected, Landslide will estimate the S value continuously until the test stops.</p> <p>Type: Int 0 : for "ONCE" 1 : for "CONTINUOUS" Default: 1</p>						
HeaderSize	<p>The number of bytes that will be in the IP Header for calculating throughputs and packet rates. This only affects the throughput calculators and traffic mixer in the GUI and has no effect on DMF execution.</p> <p>Type: int Default: 0 Min: 0</p>						

HttpRedirectEnabled	<p>Enables the HTTP Redirect feature when the DataProtocol is http. When enabled, HttpDnsEntry child list can be filled out.</p> <p>Type: Boolean Default: false</p>								
HttpRewordUrl	<p>Enables the Reword URL feature of HTTP Redirect.</p> <p>Type: Boolean Default: false</p>								
HostDataExpansionRatio	<p>The number of packets returned by the Network Host for basic data protocols. The Network Host responds with the number of packets that you define, and all packets carry the defined Packet Size. You can generate unidirectional traffic by setting the value to 0. In this case, the MN sends packets and the Network Host does not respond. For Fireball DMFs, fb_tcp/fb_udp, the value can be a float with 3 digit precision, 0.0 through 100.0. For all other Basic DMF protocols, the value must be integer.</p> <p>Type: int/float Default: 1 Min: 0 Max: 100</p>								
InitiatingSide	<p>For Basic Data Protocols, the side that sends a message first. For Advanced Data Protocols, with an underlying layer of TCP or SCTP, the side that initiates the connection. It is ignored for other protocols.</p> <p>Type: Custom String Default: Client Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Client</td> <td>The Client initiates the connection or sends first message.</td> </tr> <tr> <td>Server</td> <td>The Server initiates the connection or sends first message.</td> </tr> </tbody> </table>	Value	Description	Client	The Client initiates the connection or sends first message.	Server	The Server initiates the connection or sends first message.		
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InnerHeaderChecksumValidation	<p>Enables the validation of the inner IP stack's checksums. Only applies to the Fireball DMFs, fb_tcp/fb_udp.</p> <p>Type: Boolean Default: false</p>								
IntervalDeviation	<p>Either the Standard Deviation or Maximum Deviation for the transaction rate distribution, depending on the IntervalDistribution value.</p> <p>Type: int Default: 10 Min: 0 Max: 100</p>								
IntervalDistribution	<p>Distribution Model for Transaction Rate.</p> <p>Type: Custom String Default: Fixed Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Fixed</td> <td>The rate specified in the DMF is used throughout.</td> </tr> <tr> <td>Uniform</td> <td>The rate is evenly distributed between a minimum and maximum range. You set the width of this range as a percentage of the mean (the base rate or size that you defined) with the IntervalDeviation attribute.</td> </tr> <tr> <td>Normal</td> <td>The rate is randomly distributed in a bell-shaped fashion. You define the shape of the bell as a percentage of the mean (the base rate or size that you defined) by setting the standard deviation in the IntervalDeviation attribute. The width of the</td> </tr> </tbody> </table>	Value	Description	Fixed	The rate specified in the DMF is used throughout.	Uniform	The rate is evenly distributed between a minimum and maximum range. You set the width of this range as a percentage of the mean (the base rate or size that you defined) with the IntervalDeviation attribute.	Normal	The rate is randomly distributed in a bell-shaped fashion. You define the shape of the bell as a percentage of the mean (the base rate or size that you defined) by setting the standard deviation in the IntervalDeviation attribute. The width of the
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	<p>Poisson</p> <p>bell curve is 4 times the standard deviation. The rate is randomly distributed across a Poisson bell curve between a minimum and maximum range. You set the width of this range as a percentage of the mean (the base rate or size that you defined) with the IntervalDeviation attribute.</p>
IsClientPortRange	<p>Indicates if the client port is sequentially assigned by the test server within a range. When true, MinClientPort and MaxClientPort should be set, and ClientPort, if non-zero, represents the starting client port in the range.</p> <p>Type: Boolean Default: false</p>
Iterations	<p>The Number of Iterations/Loops the test will run.</p> <p>Type: int Default: 1</p>
Keywords	<p>Keywords that identify the DMF.</p> <p>Type: Custom String: words separated by spaces, words contain up to 32 letters and numbers. Example: keyword1 KEYWORD2</p>
Library	<p>The id of the library where the DMF is, or will be, stored on the TAS.</p> <p>Type: int Default: 0</p>
MaxClientPort	<p>The maximum port in the range to use for the client-side connection.</p> <p>Type: int Default: 65535</p>
MaxSegmentSize	<p>Maximum number of payload bytes allowed when determined by remote host.</p> <p>Type: int Default: 0 Min: 0 Max: 65535</p>
MaxPacketsToForceAck	<p>Maximum number of packets to receive before sending an ACK. When enabled, this will limit the Delayed ACK feature. When disabled (value=0), an ACK will not be sent until a data packet is sent or the ACK timeout occurs.</p> <p>Type: int Default: 0 Min: 0 Max: 255</p>
MinClientPort	<p>The minimum port in the range to use for the client-side connection.</p> <p>Type: int Default: 43211</p>
MinTcpHeaderSize	<p>The minimum size to pad the TCP header.</p> <p>Type: int Default: 20 Min: 20 Max: 60</p>
MultipathTcp	<p>Enables multiple TCP paths for a single TCP flow.</p> <p>Type: Boolean Default: false</p>
Name	<p>The Name of the DMF.</p> <p>Type: String (Valid Filename characters/format up to 64 characters) Default: ""</p>

PacketSize	<p>Number of payload bytes per transaction for Basic Data protocols.</p> <p>Type: int Default: 1000 Min: 64 Max: 2000000</p>
PersistentConnection	<p>When an Advanced Data protocol runs over TCP or SCTP and supports non-persistent connections and for Firebase® fb_http and fb_tcp protocols, this determines whether the connection is maintained for the duration of the message flow execution. For all protocols that do not support persistent connection, the value should be set to false.</p> <p>Type: Boolean Default: false</p>
ProtocolId	<p>The transport's protocol ID when data protocol custom and underlying layer raw are selected.</p> <p>Type: int Default: 0 Min: 0 Max: 255</p>
Retries	<p>The maximum number of attempts made by the client or server to send a request message after the Data Response Time has expired.</p> <p>Type: int Default: 0 Min: 0</p>
SamplePktEn	<p>Enables entry of UDP sample packet, only when Data Protocol is UDP</p> <p>Type: Boolean Default: false</p>
SamplePktRate	<p>Sample packet rate</p> <p>Type: int Default: 10 Min: 5 Max: 10</p>
SegmentSize	<p>Number of payload bytes per packet.</p> <p>Type: int Default: 1000 Min: 64 Max: 65535</p>
SeparateTgtRate	<p>Enables entry of Target Transaction Rate, for handovers to a target network. (limited support)</p> <p>Type: Boolean Default: false</p>
ServerPort	<p>The port to use for the server-side connection.</p> <p>Type: int Default: 0</p>
SizeDeviation	<p>Either the Standard Deviation or Maximum Deviation for the packet size distribution, depending on the SizeDistribution value.</p> <p>Type: int Default: 10 Min: 0 Max: 100</p>

<p>SizeDistribution</p>	<p>Distribution Model for Packet Size.</p> <p>Type: Custom String Default: Fixed Possible Values:</p> <table border="1"> <thead> <tr> <th data-bbox="516 386 727 415">Value</th> <th data-bbox="727 386 1502 415">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="516 415 727 445">Fixed</td> <td data-bbox="727 415 1502 445">The size specified in the DMF is used throughout.</td> </tr> <tr> <td data-bbox="516 445 727 569">Uniform</td> <td data-bbox="727 445 1502 569">The size is evenly distributed between a minimum and maximum range. You set the width of this range as a percentage of the mean (the base rate or size that you defined) with the SizeDeviation attribute.</td> </tr> <tr> <td data-bbox="516 569 727 720">Normal</td> <td data-bbox="727 569 1502 720">The size is randomly distributed in a bell-shaped fashion. You define the shape of the bell as a percentage of the mean (the base rate or size that you defined) by setting the standard deviation in the SizeDeviation attribute. The width of the bell curve is 4 times the standard deviation.</td> </tr> <tr> <td data-bbox="516 720 727 842">Poisson</td> <td data-bbox="727 720 1502 842">The size is randomly distributed across a Poisson bell curve between a minimum and maximum range. You set the width of this range as a percentage of the mean (the base rate or size that you defined) with the SizeDeviation attribute.</td> </tr> </tbody> </table>	Value	Description	Fixed	The size specified in the DMF is used throughout.	Uniform	The size is evenly distributed between a minimum and maximum range. You set the width of this range as a percentage of the mean (the base rate or size that you defined) with the SizeDeviation attribute.	Normal	The size is randomly distributed in a bell-shaped fashion. You define the shape of the bell as a percentage of the mean (the base rate or size that you defined) by setting the standard deviation in the SizeDeviation attribute. The width of the bell curve is 4 times the standard deviation.	Poisson	The size is randomly distributed across a Poisson bell curve between a minimum and maximum range. You set the width of this range as a percentage of the mean (the base rate or size that you defined) with the SizeDeviation attribute.
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<p>StartOnEvent</p>	<p>Determines if the DMF traffic will be started based on a test server event trigger, i.e. SMS. Applies to select mainflow DMFs only.</p> <p>Type: Boolean Default: false</p>										
<p>StartPaused</p>	<p>Determines if the DMF traffic will be running or paused when the test case starts. Applies to mainflow DMFs only.</p> <p>Type: Boolean Default: false</p>										
<p>TgtTransactionRate</p>	<p>If enabled by SeparateTgtRate, the number of times the test will attempt to execute the transaction every second in each of the MN sessions after handover to a target network (limited support).</p> <p>Type: float Default: 1.0 Min: >0 (~1.0E-323) Max: 1000</p>										
<p>TimeToLive</p>	<p>The Time To Live in the IP Headers</p> <p>Type: int Default: 64 Min: 1 Max: 255</p>										
<p>TotalTransactions</p>	<p>The number of times a transaction is executed after data traffic begins. 0 indicates continuous.</p> <p>Type: int Default: 0 Min: 0</p>										
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<p>TypeOfService</p>	<p>The type of service in the IP Headers.</p> <p>Type: int Default: 0 Min: 0 Max: 255</p>										

UnderlyingProtocol	<p>The optional transport protocol for certain data protocols.</p> <p>Type: Custom String Default: ping Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>tcp</td> <td>Valid for custom, dns, rtcp, sip, rtp, mqtt, ulp and rtsp</td> </tr> <tr> <td>sctp</td> <td>Valid for custom, rtcp, sip, rtp, and rtsp</td> </tr> <tr> <td>udp</td> <td>Valid for custom, dns, rtcp, sip, rtp, and rtsp</td> </tr> <tr> <td>raw</td> <td>Valid for custom</td> </tr> <tr> <td>wtp</td> <td>Valid for wv, wsp, and mms</td> </tr> <tr> <td>http</td> <td>Valid for webauth, wv and mms</td> </tr> <tr> <td>rdirect_to_https</td> <td>Valid for webauth</td> </tr> <tr> <td>enhanced_udp</td> <td>Valid for dns</td> </tr> <tr> <td>udptcp</td> <td>Valid for dns</td> </tr> <tr> <td>Tls</td> <td>Valid for http2, ulp, and custom</td> </tr> </tbody> </table>	Value	Description	tcp	Valid for custom, dns, rtcp, sip, rtp, mqtt, ulp and rtsp	sctp	Valid for custom, rtcp, sip, rtp, and rtsp	udp	Valid for custom, dns, rtcp, sip, rtp, and rtsp	raw	Valid for custom	wtp	Valid for wv, wsp, and mms	http	Valid for webauth, wv and mms	rdirect_to_https	Valid for webauth	enhanced_udp	Valid for dns	udptcp	Valid for dns	Tls	Valid for http2, ulp, and custom
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udptcp	Valid for dns																						
Tls	Valid for http2, ulp, and custom																						
Force3Way	<p>For TCP and SCTP protocols, controls whether the connection is considered to be established with the SNY/ACK or the confirming ACK.</p> <p>Type: Boolean Default: false</p>																						
TcpPush	<p>For TCP protocols, enables or disables the PUSH flag in the TCP header.</p> <p>Type: Boolean Default: false</p>																						
FixedRetryTime	<p>The TCP/SCTP retransmission timer indicator. Set to 0 to use dynamic algorithm, otherwise a value between 100 and 30000 for a fixed retry timer.</p> <p>Type: int Default: 0 Min: 100 Max: 30000</p>																						
WindowSize	<p>TCP/SCTP window size.</p> <p>Type: int Default: 2000 Min: 2000 Max: 65535 or greater</p>																						
WindowScaling	<p>The TCP/SCTP window scaling enabler and factor. Set to -1 to disable, otherwise a value between 0 and 14 determines the window scaling factor.</p> <p>Type: int Default: -1 Min: -1 Max: 14</p>																						
DisconnectType	<p>Whether the TCP/SCTP socket is torn down by sending a FIN and waiting for a FIN ACK or by sending an RST to the other TCP. Only valid for TCP and SCTP transported protocols.</p> <p>Type: Custom String Default: FIN Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>FIN</td> <td>Send a FIN and wait for FIN ACK.</td> </tr> <tr> <td>RST</td> <td>Send an RST.</td> </tr> </tbody> </table>	Value	Description	FIN	Send a FIN and wait for FIN ACK.	RST	Send an RST.																
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FIN	Send a FIN and wait for FIN ACK.																						
RST	Send an RST.																						
SlowStart	<p>Enables or disables Landslide’s implementation of slow start, congestion avoidance, and fast retransmit features, as specified in RFC 2581.</p> <p>Type: Boolean Default: false</p>																						

ConnectOnly	<p>Enables or disables option to open socket and close without traffic (TCP/SCTP only).</p> <p>Type: Boolean Default: false</p>						
VTagMask	<p>The VTAG Mask for the SCTP protocol</p> <p>Type: Hex String starting with 0x and up to 8 hex digits Default: 0x0 Max: 0xFFFFFFFF</p>						
VTagValue	<p>The VTAG Value for the SCTP protocol</p> <p>Type: Hex String starting with 0x and up to 8 hex digits Default: 0x0 Max: 0xFFFFFFFF</p>						
BillingIncludeSyn	<p>In TCP-based flows, the TCP control packets that are exchanged when the connection is established (SYN, SYN/ACK, and ACK) are included in the per-flow attribute values.</p> <p>Type: Boolean Default: false</p>						
BillingIncludeSubflow	<p>Subflow counts are included in the mainflow S-LDR.</p> <p>Type: Boolean Default: false</p>						
BillingRecordPerTransaction	<p>A separate S-LDR is generated for each DMF transaction.</p> <p>Type: Boolean Default: false</p>						
IncludeImAka	<p>Selects IMS AKA as the type of authentication that will be supported by the DMF. If this is true, IncludeHttpDigest must be false.</p> <p>Type: Boolean Default: false</p>						
IncludeHttpDigest	<p>Selects HTTP Digest as the type of authentication that will be supported by the DMF. If this is true, IncludeImAka must be false.</p> <p>Type: Boolean Default: false</p>						
Algorithm	<p>The algorithm used to calculate authentication credentials for IMS AKA or HTTP Digest.</p> <p>Type: Custom String Default: FIN Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>md5</td> <td>MD5</td> </tr> <tr> <td>md5-sess</td> <td>MD5 Session</td> </tr> </tbody> </table>	Value	Description	md5	MD5	md5-sess	MD5 Session
Value	Description						
md5	MD5						
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SecretKey	<p>The key associated with the MN's IMS private identity. The MN and the HSS both maintain this key and the HSS informs the S-CSCF of an MN's private key during the registration process.</p> <p>Type: Hex String starting with 0x and up to 32 hex digits Default: 0x0 Max: 0xFF</p>						

OpVar	<p>The 128-bit, operator-specific MILENAGE constant (OP) provisioned for the network.</p> <p>Type: Hex String starting with 0x and up to 32 hex digits Default: 0x63BFA50EE6523365FF14C1F45F88737D Max: 0xFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF</p>
UseAkaForIpSec	<p>If your test includes Data IPsec, the resulting AKA keying material will also be used for IPsec when this is enabled and IPsec is configured for Pre-Provisioned mode. Use an IPsec_TUNNEL_n_START event to begin SA establishment after AKA is complete.</p> <p>Type: Boolean Default: false</p>
DigestUri	<p>The URI of the authenticating server. The combination of URI and realm uniquely identifies the protected space and the database used for authentication. One server could be partitioned to support many realms.</p> <p>Type: String Default: ""</p>
CNonce	<p>The Client Nonce is transmitted in the client's authentication response and is used by both the client and server for mutual authentication and message integrity protection.</p> <p>Type: String Default: ""</p>
NonceCount	<p>The number of times the client has transmitted the same CNonce. The value is formatted as a string and will retain leading zeros. The server uses this value for replay protection and should reject responses with a duplicate Nonce Count.</p> <p>Type: Hex String starting with 0x and up to 16 hex digits OR up to 18 decimal digits Default: "" Max: 0xFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF or 9999999999999999</p>
FixedRandOrNonce	<p>On the server side, you can use this checkbox to define a static RAND or static Nonce that will be sent in every IMS AKA challenge or HTTP Digest challenge, respectfully.</p> <p>Type: Hex String starting with 0x and up to 32 hex digits Default: 0x00000000000000000000000000000001 Max: 0xFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF</p>
InitializationTdfLibrary	<p>The library ID of the test data file used to initialize this DMF's attributes.</p> <p>Type: int Default: 0</p>
InitializationTdfName	<p>The name of the Test Data File used to initialize this DMF's attributes.</p> <p>Type: String (Valid Filename characters/format) Default: ""</p>

StopOnError	<p>Direct the DMF to stop executing in any MN session when a transaction fails to complete due to a socket error.</p> <p>Type: Boolean Default: false</p>
TransactionStartsBefore	<p>Identifies the first command in a transaction loop.</p> <p>Type: int Default: 0 Min: 0 Max: {Number of commands – 1}</p>
TransactionEndsAfter	<p>Identifies the last command in a transaction loop. Must be set.</p> <p>Type: int Default: -1 Min: 1 Max: {Number of commands}</p>
SctpPayloadProtocolId	<p>The SCTP payload's protocol ID when data protocol custom and underlying layer sctp are selected.</p> <p>Type: int Default: 0 Min: 0 Max: 4294967295</p>
WaitForSubflows	<p>Directs the DMF to maintain its connection until all subflows complete. Only applicable to mainflow DMFs.</p> <p>Type: Boolean Default: false</p>
ClientIgnoreAckIn3WayHsEn	<p>When the Client Ignores ACK in 3-way Handshake flag is activated, the Client side will re-send the TCP sync when the ACK Message is lost from Server side. The Client Ignores ACK in 3-way Handshake flag is used to simulate the TCP 3-way handshake failure scenario. Available when DMF Protocol is fb_tcp, fb_http, fb_https. Can be used in both NAT and Non-NAT environments.</p> <p>Type: Boolean Default: false</p>

Read-only Attributes:

None

Children:

Child	Description
AbrMediaInfo	<p>ABR protocol specific information</p> <p>Type: AutoCreated Multiplicity: 1</p>
Command	<p>A command within an Advanced DMF sequence, specifies a client-server request-response pair of messages and events to wait or send. Only available if the DataProtocol is an Advanced DMF protocol (i.e. not enhanced, lite, udp, ping, raw).</p> <p>Type: UserCreated Multiplicity: 0-2048</p>

Connection5Tuple	<p>A TCP or UDP Connection within a Lite DMF. Only available if the DataProtocol is lite.</p> <p>Type: UserCreated Multiplicity: 0-128</p>
DnsInfo	<p>DNS protocol specific information</p> <p>Type: AutoCreated Multiplicity: 1</p>
HttpDnsEntry	<p>An HttpDnsEntry object within a HTTP Advanced DMF. Only available if the DataProtocol is http and the HTTP Redirect Feature is enabled (httpRedirectEnabled=true).</p> <p>Type: AutoCreated Multiplicity: 10</p>
LiteMessage	<p>A Message object within a Lite DMF. Only available if the DataProtocol is lite.</p> <p>Type: UserCreated Multiplicity: 0-2048 (maximum 1024 of Request and 1024 Response)</p>
LpplInfo	<p>LPP protocol specific information for ULP DMF.</p> <p>Type: AutoCreated Multiplicity: 1</p>
PasteBuffer	<p>PasteBuffer initialization information.</p> <p>Type: AutoCreated Multiplicity: 10</p>
SubFlow	<p>Identifies subflow DMFs used in this mainflow DMF. Only available if the DataProtocol is an Advanced DMF protocol (i.e. not enhanced, lite, udp, ping, raw).</p> <p>Type: UserCreated Multiplicity: 0-127</p>
RtpFileInfo	<p>RTP File protocol specific information</p> <p>Type: AutoCreated Multiplicity: 1</p>
RtpVideoInfo	<p>RTP Video protocol specific information</p> <p>Type: AutoCreated Multiplicity: 1</p>
RtpVoiceInfo	<p>RTP Voice protocol specific information</p> <p>Type: AutoCreated Multiplicity: 1</p>
TlsInfo	<p>The SSL/TLS specific information. Only available if the DataProtocol is https or the UnderlyingLayer is tls.</p> <p>Type: AutoCreated Multiplicity: 1</p>
UlpInfo	<p>The ULP protocol specific information.</p> <p>Type: AutoCreated Multiplicity: 1</p>

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Tcl API Object and Perform Function Reference

Subflow

Identifies a subflow DMF in a mainflow DMF.

Writeable Attributes:

Writeable Attribute	Description
Library	The ID of the library the Subflow DMF. Type: int Default: 0
Name	The Name of the Subflow DMF Type: String (Valid Filename characters/format up to 64 characters) Default: ""

Read-only Attributes:

None

Children:

None

PasteBuffer

This is a DMF paste buffer configuration.

Writeable Attributes:

Writeable Attribute	Description
InitialValue	The initial value of this paste buffer. Type: String Default: ""
Name	The name of this paste buffer. Type: String Default: "Buffer_[n]"
Size	The size of this paste buffer. Type: int Default: 0

Read-only Attributes:

None

Children:

None

Connection5Tuple

A Connection5Tuple represents the combination of a transport choice (udp/tcl), client IP address, client port, server IP address, and server port that identifies a communications connection between two devices, such as a TCP Socket. There can be up to 16 of these in a Lite DMF.

Writeable Attributes:

Writeable Attribute	Description
ClientPort	The port or starting port in a range to use for the client-side of this connection. 0 indicates a random port or random starting should be generated. Type: int Default: 0
DnsDomainName	The Domain Name to query as part of the DNS Query feature.
DnsServerIpv4Address	The IPv4 Address of the DNS Server used for the DNS Query Feature. Type: String (Valid IPv4 Address) Default: ""
DnsServerIpv6Address	The IPv6 Address of the DNS Server used for the DNS Query Feature. Type: String (Valid IPv6 Address) Default: ""
DnsUpdateEachTransaction	Indicates if the DNS is requeried each time the DMF starts a new transaction. Type: Boolean Default: false
Host	The 0-based index of the server or network host node Type: int Default: 0
IsClientPortRange	Indicates if the client port is sequentially assigned by the test server within a range. When true, MinClientPort and MaxClientPort should be set, and ClientPort, if non-zero, represents the starting client port in the range. Type: Boolean Default: false
MaxClientPort	The maximum port in the range to use for the client-side of this connection. Type: int Default: 65535
MinClientPort	The minimum port in the range to use for the client-side of this connection. Type: int Default: 43211
Protocol	The transport protocol for this connection Type: Custom String Default: tcp Possible Values: tcp, udp

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Tcl API Object and Perform Function Reference

SegmentSize	Number of payload bytes per packet in this connection. Type: int Default: 1000 Min: 64 Max: 65535
ServerPort	The port to use for the server-side of this connection. Type: int Default: 0
TypeOfService	The type of service in the IP Headers for this connection. Type: int Default: 0 Min: 0 Max: 255

Read-only Attributes:

Read-only Attribute	Description
Index	The 1-based index or ID of this connection within the DMF. Type: int Default: 1

Children:

None

Command

In its most common usage, this object defines/represents a client request message and a server response message. The command is “executed” after all WaitForEvents have occurred and sends all SendEvents after sending and/or receiving the response. There is no need to change the attributes of the Command object unless you are using this DMF in Landslide to generate the traffic from both the client and server side, AND the traffic that is being generated is also being modified by something in the network.

Writeable Attributes:

Writeable Attribute	Description
ClientSide	Whether this command applies to the client’s view of the DMF. If true, a test case that uses this DMF, and runs on the MN side, will process this command. This should rarely need to be used and should not be changed unless the DMF is being used by both sides and the data is altered after being sent. Type: Boolean Default: True
ServerSide	Whether this command applies to the server’s view of the DMF. If true, a test case that uses this DMF and runs on the Network-Host/Simulator side, will process this command. This should rarely need to be used and should not be changed unless the DMF is being used by both sides and the data is altered after being sent. Type: Boolean Default: True

Read-only Attributes:

None

Children:

Child	Description
ClientMessage	A Message object that represents the client-side message for this command. Type: AutoCreated Multiplicity: 1
SendEvent	Events that are sent after this command executes. Type: UserCreated Multiplicity: 0-3
ServerMessage	A Message object that represents the server-side message for this command. Type: AutoCreated Multiplicity: 1
WaitForEvent	Events that are waited for before executing this command. Type: UserCreated Multiplicity: 0-3

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Tcl API Object and Perform Function Reference

EventData	<p>Event Data that is sent with USER_DEFINED_EVENT to an External Entity.</p> <p>Type: AutoCreated (Tied to SendEvent count) Multiplicity: 0-3</p>
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WaitForEvent

An Event that is waited for, before executing a command in a DMF sequence.

Writeable Attributes:

Writeable Attribute	Description																																																				
AppliesTo	<p>The side(s) that will wait for this event. This should rarely need to be used and should not be changed unless the DMF is being used by both sides and the data is altered after being sent.</p> <p>Type: int Default: "" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Both Client and Server sides will wait for this event.</td> </tr> <tr> <td>1</td> <td>Applies only to the Client side execution.</td> </tr> <tr> <td>2</td> <td>Applies only to the Server side execution</td> </tr> </tbody> </table>	Value	Description	0	Both Client and Server sides will wait for this event.	1	Applies only to the Client side execution.	2	Applies only to the Server side execution																																												
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	26 27	Execute_AKA event Webauth_Logout event (only for webauth DMFs)								
SourceId	<p>The ID of the source of the event.</p> <p>Type: int Default: 0 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-2</td> <td>Source is external.</td> </tr> <tr> <td>-1</td> <td>Source is the mainflow.</td> </tr> <tr> <td>N >= 0</td> <td>Source is the subflow at index N.</td> </tr> </tbody> </table>		Value	Description	-2	Source is external.	-1	Source is the mainflow.	N >= 0	Source is the subflow at index N.
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-2	Source is external.									
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Read-only Attributes:

None

Children:

None

SendEvent

Event that is sent after a Command in a DMF sequence executes.

Writeable Attributes:

Writeable Attribute	Description																								
AppliesTo	<p>The side(s) that will send this event. This should rarely need to be used and should not be changed unless the DMF is being used by both sides and the data is altered after being sent.</p> <p>Type: int Default: "" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Both Client and Server sides will send this event.</td> </tr> <tr> <td>1</td> <td>Applies only to the Client side execution.</td> </tr> <tr> <td>2</td> <td>Applies only to the Server side execution</td> </tr> </tbody> </table>	Value	Description	0	Both Client and Server sides will send this event.	1	Applies only to the Client side execution.	2	Applies only to the Server side execution																
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	12 User_Defined_Event_7 event 13 User_Defined_Event_8 event 14 User_Defined_Event_9 event 15 User_Defined_Event_10 event 16 Socket_Open event 17 Goto_Command event 18 IPSec_Tunnel_1_Start event 19 IPSec_Tunnel_2_Start event 20 IPSec_Tunnel_3_Start event 21 IPSec_Tunnel_1_Start event 22 IPSec_Tunnel_1_Stop event 23 IPSec_Tunnel_2_Stop event 24 IPSec_Tunnel_3_Stop event 25 IPSec_Tunnel_4_Stop event 26 Execute_AKA event 27 Webauth_Logout event 28 Oauth_Network_Challenge event 29 MQTT_Control_Pkt_Event event								
TargetId	The ID of the target of the event. Type: int Default: 0 Possible Values: <table border="1" data-bbox="581 898 1490 1022"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-2</td> <td>Source is external.</td> </tr> <tr> <td>-1</td> <td>Source is the mainflow.</td> </tr> <tr> <td>N >= 0</td> <td>Source is the subflow at index N.</td> </tr> </tbody> </table>	Value	Description	-2	Source is external.	-1	Source is the mainflow.	N >= 0	Source is the subflow at index N.
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Read-only Attributes:

None

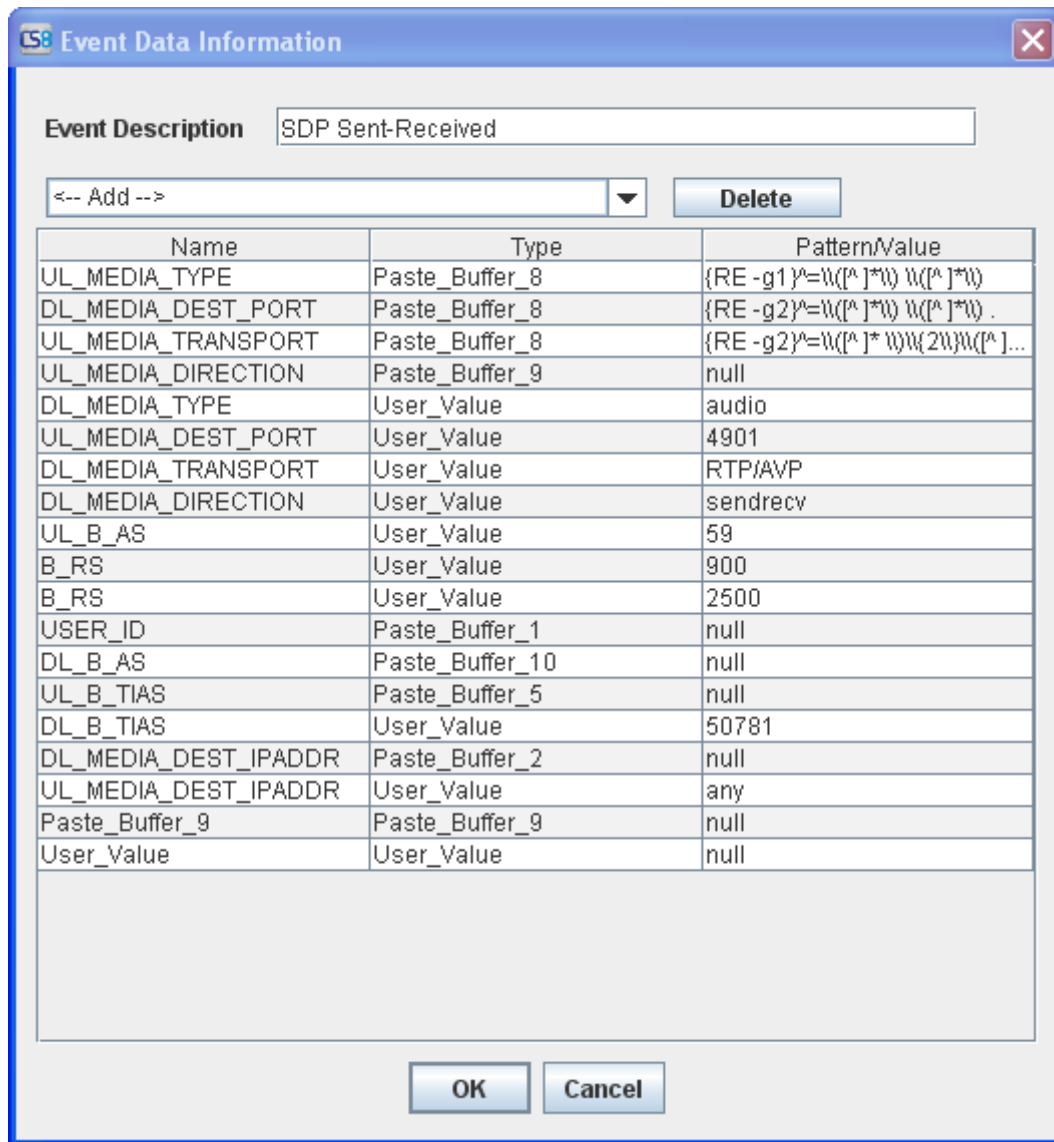
Children:

None

Event Data

The Event Data object represents the data the user configures to be sent with a USER_DEFINED_EVENT to External Entity

In the GUI, an Event Data object is primarily represented with this screen.



Writeable Attributes:

Writeable Attribute	Description
Description	Event Description sent in the EventData Type: String Default: ""

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Read-only Attributes:

None

Children:

Child	Description
EventArgument	Event Argument sent in the EventData. Type: UserCreated Multiplicity: 0-32

EventArgument

This specifies one event argument for the EventData.

Writeable Attributes:

Writeable Attribute	Description																								
Name	User defined name for the Paste-Buffer and User-Value type fields. Type: String Default: ""																								
Pattern/Value	Search Pattern for Paste-Buffer types Value for User-Value types Type: String Default: Paste_Buffer_X, User_Value																								
Type	The type of this AutoFill field. Type: int Default: 0 Possible Values: <table border="1"><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>10</td><td>Paste Buffer 1</td></tr><tr><td>12</td><td>Paste Buffer 2</td></tr><tr><td>14</td><td>Paste Buffer 3</td></tr><tr><td>16</td><td>Paste Buffer 4</td></tr><tr><td>65</td><td>Paste Buffer 5</td></tr><tr><td>67</td><td>Paste Buffer 6</td></tr><tr><td>69</td><td>Paste Buffer 7</td></tr><tr><td>71</td><td>Paste Buffer 8</td></tr><tr><td>73</td><td>Paste Buffer 9</td></tr><tr><td>75</td><td>Paste Buffer 10</td></tr><tr><td>92</td><td>User_Value</td></tr></tbody></table>	Value	Description	10	Paste Buffer 1	12	Paste Buffer 2	14	Paste Buffer 3	16	Paste Buffer 4	65	Paste Buffer 5	67	Paste Buffer 6	69	Paste Buffer 7	71	Paste Buffer 8	73	Paste Buffer 9	75	Paste Buffer 10	92	User_Value
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92	User_Value																								

Read-only Attributes:

None

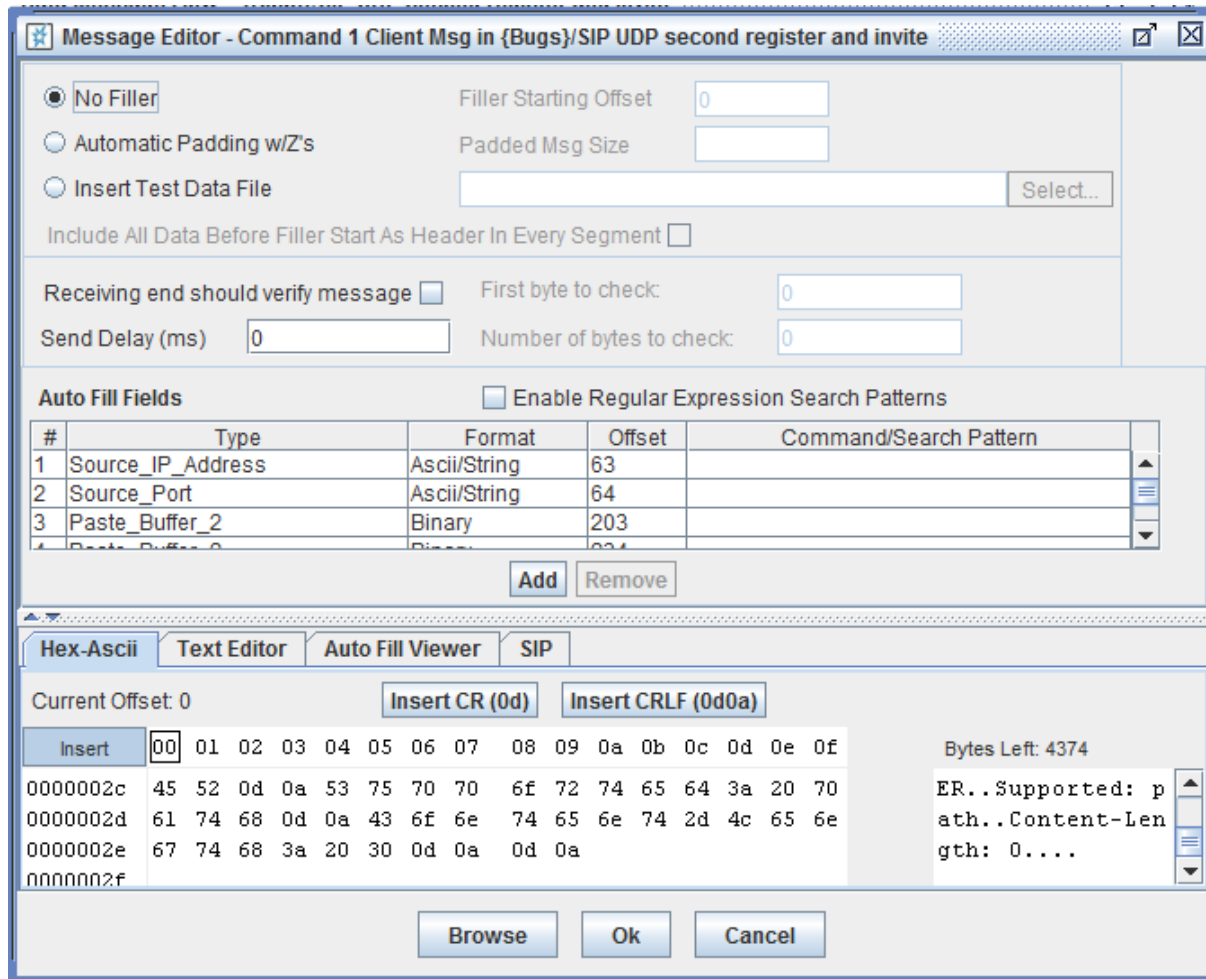
Children:

None

Message

A single message sent or received and all the associated auto-fill and validation information. There are two messages per Advanced DMF Command, one for client and one for server. A Lite DMF's LiteMessage is the same class.

In the GUI, a Message object is typically represented with this screen:



Writeable Attributes:

Writeable Attribute	Description						
CertificateFileFormat	<p>The file format for the Certificate File used in Encrypted Content.</p> <p>Type: Custom String Default: "RSA" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>RSA</td> <td>RSA Format</td> </tr> <tr> <td>EVP</td> <td>EVP Format</td> </tr> </tbody> </table>	Value	Description	RSA	RSA Format	EVP	EVP Format
Value	Description						
RSA	RSA Format						
EVP	EVP Format						
CertificateFileLibrary	<p>The library ID of the TDF used for Encrypted Content certificate. Setting NumCertificateEntries will enable Encrypted Content fill.</p> <p>Type: int Default: 0</p>						
CertificateFileName	<p>The name of the TDF used for Encrypted Content certificate. Setting NumCertificateEntries will enable Encrypted Content fill.</p> <p>Type: String Default: ""</p>						
CheckResponseBytes	<p>The number of bytes to verify in the message. Leave 0 (the default) to disable message verification.</p> <p>Type: int Default: 0</p>						
CheckStartIndex	<p>The starting offset for message verification. Leave 0 (the default) to disable message verification.</p> <p>Type: int Default: 0</p>						
ConnectionIndex	<p>The 0-based index of the Connection5Tuple within a Lite DMF that this message is sent over.</p> <p>Type: int Default: 0 Min: 0 Max: Last Connection5Tuple index (15)</p>						
Data	<p>The message data in hex. We use standard ASCII Hexadecimal format, based on the ISO-8859-15 character set. Two 4-bit hex values for each byte character. Support can provide Java code snippet.</p> <p>This converter might be helpful: https://www.binaryhexconverter.com/ascii-text-to-hex-converter</p> <p>Type: Hex String no leading 0x Default: ""</p>						
Dscp	<p>The Differentiated Services Code Point (DSCP) Marking value to assign to this message.</p> <p>Type: int Default: 0 Min: 0 Max: 255</p>						

EnableRegularExpressions	<p>Enables regular expression support in the AutoFill Search Pattern fields. Only applicable with license. See the GUI online Help for regular expression usage.</p> <p>Type: Boolean Default: False</p>
FillerDataSize	<p>The target size of the message for automatic message padding. Leave 0 (the default) to disable automatic message padding. Otherwise, the message will be filled with Z's until the message length equals this value. If the message is already this size, no automatic filling occurs.</p> <p>Type: int Default: 0</p>
FillerDataStart	<p>The starting offset of the automatic padding or test data file insertion.</p> <p>Type: int Default: 0</p>
FillerFileLibrary	<p>The library ID of the TDF used for content fill. Setting a valid FillerFile will enable TDF content fill.</p> <p>Type: int Default: 0</p>
FillerFileName	<p>The name of the TDF used for content fill. Setting a valid FillerFile will enable TDF content fill.</p> <p>Type: String Default: ""</p>
IncPreFillDataAsHeader	<p>When the message's total size is larger than the Segment Size defined for the DMF, the message will be sent using multiple packets. If you have defined header fields in message, this information will be included in every packet when you check Include All Data Before Content Start As Header In Every Segment.</p> <p>Type: Boolean Default: False</p>
NumCertificateEntries	<p>The number of certificate entries per UE in the Certificate File used for Encrypted Content. Setting this value > 0 is an indicator to try to use Encrypted Content. When set, PrivateKey, Certificate, EncryptedContentStart/End, must also be set.</p> <p>Type: Int Default: 0</p>
PrivateKeyFileLibrary	<p>The library ID of the TDF used for Encrypted Content private key. Setting NumCertificateEntries > 0, FillerFile -1/"" , and FillerDataSize==0, will enable Encrypted Content fill.</p> <p>Type: int Default: 0</p>

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PrivateKeyFileName	<p>The name of the TDF used for Encrypted Content private key. Setting NumCertificateEntries > 0, FillerFile -1/”, and FillerDataSize==0, will enable Encrypted Content fill.</p> <p>Type: String Default: “”</p>												
SendDelay	<p>The number of milliseconds (up to 2,000,000,000) to wait before sending the message with Send Delay.</p> <p>Type: Int Default: 0 Min: 0 Max: 2,000,000,000</p>												
Sender	<p>The side that sends the message for Lite DMFs.</p> <p>Type: Custom String Default: Client Possible Values: Client, Server</p>												
Type	<p>The message type for Advanced DMFs</p> <p>Type: Int Default: 0 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl Constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Is::DMF_MSG_TYPE_NONE</td> <td>NONE, no message</td> </tr> <tr> <td>1</td> <td>Is::DMF_MSG_TYPE_REQUEST</td> <td>REQUEST message</td> </tr> <tr> <td>2</td> <td>Is::DMF_MSG_TYPE_RESPONSE</td> <td>RESPONSE message</td> </tr> </tbody> </table>	Value	Tcl Constant	Description	0	Is::DMF_MSG_TYPE_NONE	NONE, no message	1	Is::DMF_MSG_TYPE_REQUEST	REQUEST message	2	Is::DMF_MSG_TYPE_RESPONSE	RESPONSE message
Value	Tcl Constant	Description											
0	Is::DMF_MSG_TYPE_NONE	NONE, no message											
1	Is::DMF_MSG_TYPE_REQUEST	REQUEST message											
2	Is::DMF_MSG_TYPE_RESPONSE	RESPONSE message											
WaitForResponse	<p>Whether to wait for the response or not.</p> <p>Type: Boolean Default: False</p>												

Read-only Attributes:

None

Children:

Child	Description
AutoFill	<p>An auto-fill field for the message.</p> <p>Type: UserCreated Multiplicity: 0-32</p>
DistTdf	<p>A distributed TDF filler. There must be at least two DistTdfs if the feature is enabled.</p> <p>Type: UserCreated Multiplicity: 0 or 2-32</p>

AutoFill

This specifies one auto-fill field for a Message.

Writeable Attributes:

Writeable Attribute	Description																																										
Format	<p>The format for this AutoFill field. The valid format values depend upon the auto-fill type.</p> <p>Type: int Default: 0 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>1</td><td>ASCII</td></tr> <tr><td>2</td><td>8-bit Binary</td></tr> <tr><td>3</td><td>16-bit Binary</td></tr> <tr><td>4</td><td>32-bit Binary</td></tr> <tr><td>5</td><td>64-bit Binary</td></tr> <tr><td>6</td><td>Binary</td></tr> <tr><td>7</td><td>96-bit Binary</td></tr> <tr><td>8</td><td>SIP:Record-Route</td></tr> <tr><td>9</td><td>SIP:Route</td></tr> <tr><td>10</td><td>SIP:Via</td></tr> <tr><td>11</td><td>NTP</td></tr> </tbody> </table>	Value	Description	1	ASCII	2	8-bit Binary	3	16-bit Binary	4	32-bit Binary	5	64-bit Binary	6	Binary	7	96-bit Binary	8	SIP:Record-Route	9	SIP:Route	10	SIP:Via	11	NTP																		
Value	Description																																										
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9	SIP:Route																																										
10	SIP:Via																																										
11	NTP																																										
Offset	<p>The offset where this AutoFill starts.</p> <p>Type: int Default: 0</p>																																										
SearchPattern	<p>The initial value of this paste buffer</p> <p>Type: String Default: ""</p>																																										
Type	<p>The type of this AutoFill field.</p> <p>Type: int Default: 0 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> <th>Valid Formats</th> </tr> </thead> <tbody> <tr><td>1</td><td>Source IP Address</td><td>ASCII and Binary</td></tr> <tr><td>2</td><td>Dest IP Address</td><td>ASCII and Binary</td></tr> <tr><td>3</td><td>Source Port</td><td>ASCII and 16-bit Binary</td></tr> <tr><td>4</td><td>Dest Port</td><td>ASCII and 16-bit Binary</td></tr> <tr><td>5</td><td>Session Offset</td><td>ASCII and 8 thru 64-bit Binary</td></tr> <tr><td>6</td><td>Transaction Count</td><td>ASCII and 8 thru 64-bit Binary</td></tr> <tr><td>7</td><td>Message Count</td><td>ASCII and 8 thru 64-bit Binary</td></tr> <tr><td>8</td><td>DMF Row Count</td><td>ASCII and 8 thru 64-bit Binary</td></tr> <tr><td>9</td><td>Copy Buffer 1</td><td>All except Binary and 96-bit Binary</td></tr> <tr><td>10</td><td>Paste Buffer 1</td><td>All binary formats</td></tr> <tr><td>11</td><td>Copy Buffer 2</td><td>All except Binary and 96-bit Binary</td></tr> <tr><td>12</td><td>Paste Buffer 2</td><td>All binary formats</td></tr> <tr><td>13</td><td>Copy Buffer 3</td><td>All except Binary and 96-bit Binary</td></tr> </tbody> </table>	Value	Description	Valid Formats	1	Source IP Address	ASCII and Binary	2	Dest IP Address	ASCII and Binary	3	Source Port	ASCII and 16-bit Binary	4	Dest Port	ASCII and 16-bit Binary	5	Session Offset	ASCII and 8 thru 64-bit Binary	6	Transaction Count	ASCII and 8 thru 64-bit Binary	7	Message Count	ASCII and 8 thru 64-bit Binary	8	DMF Row Count	ASCII and 8 thru 64-bit Binary	9	Copy Buffer 1	All except Binary and 96-bit Binary	10	Paste Buffer 1	All binary formats	11	Copy Buffer 2	All except Binary and 96-bit Binary	12	Paste Buffer 2	All binary formats	13	Copy Buffer 3	All except Binary and 96-bit Binary
Value	Description	Valid Formats																																									
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10	Paste Buffer 1	All binary formats																																									
11	Copy Buffer 2	All except Binary and 96-bit Binary																																									
12	Paste Buffer 2	All binary formats																																									
13	Copy Buffer 3	All except Binary and 96-bit Binary																																									

	14	Paste Buffer 3	All binary formats
	15	Copy Buffer 4	All except Binary and 96-bit Binary
	16	Paste Buffer 4	All binary formats
	17	Insert Subflow 1 Source Port	ASCII and 16-bit Binary
	18	Extract Subflow 1 Source Port	ASCII and 16-bit Binary
	19	Insert Subflow 1 Dest Port	ASCII and 16-bit Binary
	20	Extract Subflow 1 Dest Port	ASCII and 16-bit Binary
	21	Insert Subflow 2 Source Port	ASCII and 16-bit Binary
	22	Extract Subflow 2 Source Port	ASCII and 16-bit Binary
	23	Insert Subflow 2 Dest Port	ASCII and 16-bit Binary
	24	Extract Subflow 2 Dest Port	ASCII and 16-bit Binary
	25	Insert Subflow 3 Source Port	ASCII and 16-bit Binary
	26	Extract Subflow 3 Source Port	ASCII and 16-bit Binary
	27	Insert Subflow 3 Dest Port	ASCII and 16-bit Binary
	28	Extract Subflow 3 Dest Port	ASCII and 16-bit Binary
	29	Insert Local Time	ASCII and 8 thru 64-bit Binary
	30	Extract Remote Time	8 thru 64-bit Binary
	31	Extract Source Billing Ref.	ASCII and 8 thru 64-bit Binary
	32	Extract Dest Billing Ref.	ASCII and 8 thru 64-bit Binary
	33	Extract RAND	ASCII and 16-bit Binary
	34	Insert Digest	ASCII and 16-bit Binary
	35	Insert RAND	ASCII and 16-bit Binary
	36	Extract QOP	ASCII and 16-bit Binary
	37	Insert QOP	ASCII and 16-bit Binary
	38	Extract Source Method	ASCII and 16-bit Binary
	39	Extract Dest Method	ASCII and 16-bit Binary
	40	Insert Method	ASCII and 16-bit Binary
	41	Insert Digest URI	ASCII and 16-bit Binary
	42	Insert CNonce	ASCII and 16-bit Binary
	43	Insert Nonce Count	ASCII and 8 thru 64-bit Binary
	44	Extract Realm	ASCII and 16-bit Binary
	45	Insert Realm	ASCII and 16-bit Binary
	46	Extract Nonce	ASCII and 16-bit Binary
	47	Insert Nonce	ASCII and 16-bit Binary
	48	Extract Peer SPI 1	ASCII and 16-bit Binary
	49	Insert Peer SPI 1	ASCII and 16-bit Binary
	50	Extract Source SPI 1	ASCII and 16-bit Binary
	51	Insert Source SPI 1	ASCII and 16-bit Binary
	52	Extract Peer SPI 2	ASCII and 16-bit Binary
	53	Insert Peer SPI 2	ASCII and 16-bit Binary
	54	Extract Source SPI 2	ASCII and 16-bit Binary
	55	Insert Source SPI 2	ASCII and 16-bit Binary
	56	Extract Peer SPI 3	ASCII and 16-bit Binary
	57	Insert Peer SPI 3	ASCII and 16-bit Binary
	58	Extract Source SPI 3	ASCII and 16-bit Binary
	59	Insert Source SPI 3	ASCII and 16-bit Binary
	60	Extract Peer SPI 4	ASCII and 16-bit Binary
	61	Insert Peer SPI 4	ASCII and 16-bit Binary
	62	Extract Source SPI 4	ASCII and 16-bit Binary
	63	Insert Source SPI 4	ASCII and 16-bit Binary
	64	Copy Buffer 5	All except Binary and 96-bit Binary
	65	Paste Buffer 5	All binary formats
	66	Copy Buffer 6	All except Binary and 96-bit Binary

67	Paste Buffer 6	All binary formats
68	Copy Buffer 7	All except Binary and 96-bit Binary
69	Paste Buffer 7	All binary formats
70	Copy Buffer 8	All except Binary and 96-bit Binary
71	Paste Buffer 8	All binary formats
72	Copy Buffer 9	All except Binary and 96-bit Binary
73	Paste Buffer 9	All binary formats
74	Copy Buffer 10	All except Binary and 96-bit Binary
75	Paste Buffer 10	All binary formats
76	Extract Subflow 1 Dest IP	ASCII and Binary
77	Extract Subflow 2 Dest IP	ASCII and Binary
78	Extract Subflow 3 Dest IP	ASCII and Binary
79	Extract Subflow 4 Dest IP	ASCII and Binary
80	Insert Content Length	ASCII and 8 thru 64-bit Binary
81	Insert IK	ASCII and 16-bit Binary
82	Insert CK	ASCII and 16-bit Binary
83	Insert Subflow 4 Source Port	ASCII and 16-bit Binary
84	Extract Subflow 4 Source Port	ASCII and 16-bit Binary
85	Insert Subflow 4 Dest Port	ASCII and 16-bit Binary
86	Extract Subflow 4 Dest Port	ASCII and 16-bit Binary
87	Insert Subflow 4 Source Port	ASCII and 16-bit Binary
88	Extract Subflow 4 Source Port	ASCII and 16-bit Binary
89	Insert Subflow 4 Dest Port	ASCII and 16-bit Binary
90	Extract Subflow 4 Dest Port	ASCII and 16-bit Binary
91	Extract Subflow 5 Dest IP	ASCII and Binary
92	User Value	All formats
93	Extract CNonce	ASCII and 16-bit Binary
94	Extract Username	ASCII and 16-bit Binary
95	Insert Username	ASCII and 16-bit Binary
96	Extract Digest URI	ASCII and 16-bit Binary
97	Extract Nonce Count	ASCII and 8 thru 64-bit Binary
98	Tcl Command	ASCII
99	Certificate Insert	ASCII
100	Signed Content Starting Offset	ASCII
101	Signed Content Ending Offset	ASCII
102	URL Encode Starting Offset	ASCII
103	URL Encode Ending Offset	ASCII
104	Domain_Name	ASCII
105	FQDN	ASCII
106	MSISDN	ASCII

Read-only Attributes:

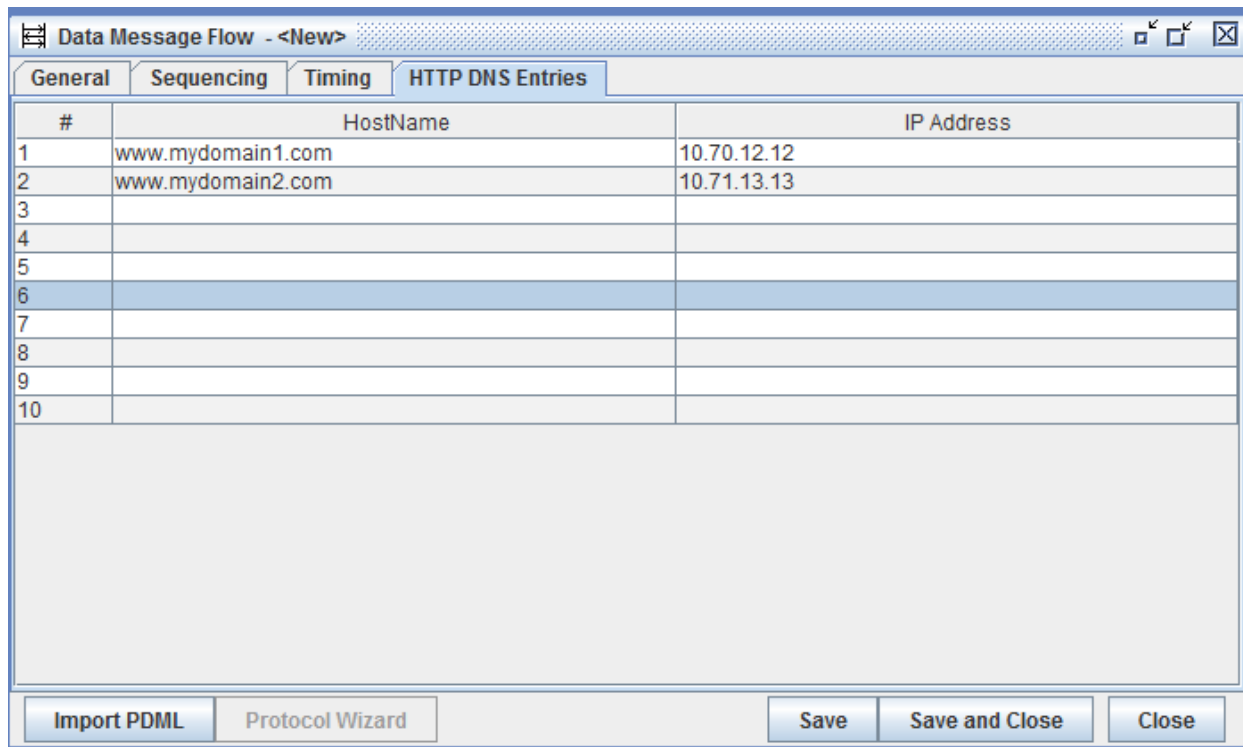
None

Children:

None

DistTdf

A single TDF Entry for the Distributed TDF filler feature. In the GUI, the DistTdf objects are represented with this screen:



Writeable Attributes:

Writeable Attribute	Description
Library	Sets the library ID for the TAS-installed TDF file to use. Type: int Default: -1
Filename	Sets the name of the TAS-installed TDF file to use. Type: String Default: ""
Pct	Sets the Percentage of the distribution this TDF is used. Total of all DistTdfs.Pct attributes must be 100. Type: int, Min: 1 Max: 100

Read-only Attributes:

None

Children:

None

Spirent Landslide

Tcl API Object and Perform Function Reference

TlsInfo

The SSL/TLS specific information. In the GUI, the TlsInfo object is represented on the *Client* and *Server* tabs of the DMF Editor.

General **TLS** Sequencing Timing

Server Name Indication

Auto Download Certificate

Certificate Test Data File

Private Key Test Data File

Performance Two-Armed Encryption Enable Pre-Shared Key Cipher Suites

SSL Version(s) SSLv3

TLSv1 TLSv1.1 TLSv1.2 TLSv1.3

Select Ciphers Select All Only Display Selected Ciphers

X	Cipher	X	Cipher
<input type="checkbox"/>	ADH-AES128-SHA	<input type="checkbox"/>	ADH-AES256-SHA
<input type="checkbox"/>	ADH-DES-CBC-SHA	<input type="checkbox"/>	ADH-DES-CBC3-SHA
<input type="checkbox"/>	ADH-RC4-MD5	<input type="checkbox"/>	AES128-SHA
<input type="checkbox"/>	AES256-SHA	<input type="checkbox"/>	DES-CBC-SHA
<input type="checkbox"/>	DES-CBC3-SHA	<input type="checkbox"/>	DHE-DSS-AES128-SHA
<input type="checkbox"/>	DHE-DSS-AES256-SHA	<input type="checkbox"/>	DHE-DSS-RC4-SHA
<input type="checkbox"/>	DHE-RSA-AES128-SHA	<input type="checkbox"/>	DHE-RSA-AES256-SHA
<input type="checkbox"/>	EDH-DSS-DES-CBC-SHA	<input type="checkbox"/>	EDH-DSS-DES-CBC3-SHA
<input type="checkbox"/>	EDH-RSA-DES-CBC-SHA	<input type="checkbox"/>	EDH-RSA-DES-CBC3-SHA
<input type="checkbox"/>	EXP-ADH-DES-CBC-SHA	<input type="checkbox"/>	EXP-ADH-RC4-MD5
<input type="checkbox"/>	EXP-DES-CBC-SHA	<input type="checkbox"/>	EXP-EDH-DSS-DES-CBC-SHA
<input type="checkbox"/>	EXP-EDH-DSS-RSA-CBC-SHA	<input type="checkbox"/>	EXP-RC2-CBC-MD5
<input type="checkbox"/>	EXP-RC4-MD5	<input checked="" type="checkbox"/>	EXP1024-DES-CBC-SHA
<input type="checkbox"/>	EXP1024-DHE-DSS-DES-CBC-SHA	<input type="checkbox"/>	EXP1024-DHE-DSS-RC4-SHA

Only applies for Traffic Start == 'When All Sessions Established'

Limit Connection Rate (flows/s) Send Data After All TLS Established

General **TLS** Sequencing Timing

Server Name Indication

Pre-Shared Key

PSK Identity

PSK Identity Hint (for Server)

Performance Two-Armed Encryption Enable Pre-Shared Key Cipher Suites

SSL Version(s) SSLv2 SSLv3

TLSv1 TLSv1.1 TLSv1.2 TLSv1.3

Select Ciphers Select All Only Display Selected Ciphers

X	Cipher	X	Cipher
<input type="checkbox"/>	DHE-PSK-AES128-GCM-SHA256	<input type="checkbox"/>	PSK-NUL-LSHA256

Only applies for Traffic Start == 'When All Sessions Established'

Limit Connection Rate (flows/s) Send Data After All TLS Established

Import PDML

Writeable Attributes:

Writeable Attribute	Description
AutoDownloadCert	<p>Optional for HTTPS protocol only. Will cause DMF to just download the certificate from the server and disable Private Key and X509 file selectors.</p> <p>Type: Boolean Default: False</p>
ConnectionRate	<p>Optional for HTTPS protocol only and only applies when used in a test case that sets TrafficStart = "When All Sessions Established". If set to > 0, the TS will limit the TLS socket connection rate to the value. Set to 0 to not limit at all.</p> <p>Type: int, Min: 0 Max: 2500</p>
Ciphers	<p>A comma separated list of ciphers to enable. Certain ciphers are only enabled based on the enabled SSL/TLS versions. The available ciphers are as follows:</p> <p>SSLv3:</p> <ul style="list-style-type: none"> ADH-DES-CBC-SHA ADH-DES-CBC3-SHA ADH-RC4-MD5 DES-CBC-SHA EDH-DSS-DES-CBC-SHA EDH-DSS-DES-CBC3-SHA EDH-RSA-DES-CBC-SHA EDH-RSA-DES-CBC3-SHA EXP-ADH-DES-CBC-SHA EXP-ADH-RC4-MD5 EXP-DES-CBC-SHA EXP-EDH-DSS-DES-CBC-SHA EXP-EDH-DSS-RSA-CBC-SHA EXP-RC2-CBC-MD5 EXP-RC4-MD5 IDEA-CBC-SHA NULL-MD5 NULL-SHA RC4-MD5 <p>TLSv1:</p> <ul style="list-style-type: none"> ADH-AES128-SHA ADH-AES256-SHA ADH-DES-CBC-SHA ADH-DES-CBC3-SHA ADH-RC4-MD5 AES128-SHA AES256-SHA DES-CBC-SHA DES-CBC3-SHA DHE-DSS-AES128-SHA

	<p>DHE-DSS-AES256-SHA DHE-DSS-RC4-SHA DHE-RSA-AES128-SHA DHE-RSA-AES256-SHA EDH-DSS-DES-CBC-SHA EDH-DSS-DES-CBC3-SHA EDH-RSA-DES-CBC-SHA EDH-RSA-DES-CBC3-SHA EXP-ADH-DES-CBC-SHA EXP-ADH-RC4-MD5 EXP-DES-CBC-SHA EXP-EDH-DSS-DES-CBC-SHA EXP-EDH-DSS-RSA-CBC-SHA EXP-RC2-CBC-MD5 EXP-RC4-MD5 EXP1024-DES-CBC-SHA EXP1024-DHE-DSS-DES-CBC-SHA EXP1024-DHE-DSS-RC4-SHA EXP1024-RC2-CBC-MD5 EXP1024-RC4-MD5 EXP1024-RC4-SHA IDEA-CBC-SHA NULL-MD5 NULL-SHA RC4-MD5 RC4-SHA</p> <p>TLSv1.1:</p> <p>NULL-MD5 NULL-SHA RC4-MD5 RC4-SHA IDEA-CBC-SHA EXP-DES-CBC-SHA DES-CBC-SHA DES-CBC3-SHA AES-128-SHA DHE-RSA-AES128-SHA AES-256-SHA DHE-RSA-AES256-SHA AES-128-SHA256 AES-256-SHA256 EXP1024-DES-CBC-SHA EXP1024-RC4-SHA DHE-RSA-AES128-SHA256 DHE-RSA-AES256-SHA256 ECDHE-RSA-NULL-SHA ECDHE-RSA-AES256-SHA</p> <p>TLSv1.2:</p>
--	---

	<p>AES-128-GCM-SHA256 AES-128-SHA256 AES-256-GCM-SHA384 AES-256-SHA256 DHE-RSA-AES128-GCM-SHA256 DHE-RSA-AES128-SHA256 DHE-RSA-AES256-GCM-SHA384 DHE-RSA-AES256-SHA256 ECDHE-RSA-AES128-GCM_SHA256 ECDHE-RSA-AES128-SHA256 ECDHE-RSA-AES256-GCM_SHA384 ECDHE-RSA-AES256-SHA384</p> <p>TLSv1.2 with Pre-Shared Key Cipher Suites DHE_PSK_AES128_GCM_SHA256 PSK_NULL_SHA256</p> <p>TLSv1.3:</p> <p>TLS_AES_256_GCM_SHA384 TLS_CHACHA20_POLY1305_SHA256 TLS_AES_128_GCM_SHA256 TLS_AES_128_CCM_8_SHA256 TLS_AES_128_CCM_SHA256</p> <p>Type: String, CSV values Default: "" Example: RC2-CBC-MD5, RC3-SHA</p>
PrivateKeyTdfLibrary	<p>Sets the library ID for the TAS-installed TDF file to use for the Private Key Certificate File.</p> <p>Type: int Default: -1</p>
PrivateKeyTdfName	<p>Sets the name of the TAS-installed TDF file to use for the Private Key Certificate File.</p> <p>Type: String Default: ""</p>
PseudoEncrypt	<p>Enables Pseudo Encryption. TLS is negotiated, but the data is not</p> <p>Type: Boolean Default: False</p>
PskCiphers	<p>Optional for TLSv1.2 only. Will enable the Pre-Shared Key Cipher Suites and disable Private Key and X509 file selectors.</p> <p>Type: Boolean Default: False</p>

PreSharedKey	Available for Pre-Shared Key Cipher Suites. One to 32 hex bytes, prefixed with "0x". Type: String Default: 0x0123456789ABCDEF01234567890ABCDEF01234567890ABCDE01234567890ABCD
PskId	Available for Pre-Shared Key Cipher Suites. One to 255 characters. Type: String Default: "PSK Identity"
PskIdHintEn	Available for Pre-Shared Key Cipher Suites. Type: Boolean Default: False
PskIdHint	Available for Pre-Shared Key Cipher Suites. One to 255 characters. Type: String Default: ""
SendHttpsAfterAllTlsEstablish	Optional for HTTPS protocol only and only applies when used in a test case that sets TrafficStart = "When All Sessions Established". If true, none of the DMF content will be sent until all TLS connections are established. Type: Boolean Default: False
ServerName	The name of the Server, valid hostname syntax, up to 128 characters. Can only be set when one of TLSv1, TLSv1_1, TLSv1_2, or TLSv1_3 is selected. Otherwise, must be empty string (disabled). Type: String Default: ""
SSLv2	Enables SSLv2 support Type: Boolean Default: False
SSLv3	Enables SSLv3 support Type: Boolean Default: False
TLSv1	Enables TLSv1 support Type: Boolean Default: False
TLSv1_1	Enables TLSv1.1 support Type: Boolean Default: False
TLSv1_2	Enables TLSv1.2 support Type: Boolean Default: False
TLSv1_3	Enables TLSv1.3 support Type: Boolean Default: False

Spirent Landslide

Tcl API Object and Perform Function Reference

X509TdfLibrary	Sets the library ID for the TAS-installed TDF file to use for the X509 Certificate File. Type: int Default: -1
X509TdfName	Sets the name of the TAS-installed TDF file to use for the X509 Certificate File. Type: String Default: ""

Read-only Attributes:

None

Children:

None

RtpFile

The rtpfile protocol specific information. In the GUI, the RtpFile object is represented on the *RTP File* tab of the DMF Editor.

The screenshot shows the DMF Editor GUI with the 'RTP File' tab selected. The 'General' tab is also visible. The 'RTP File' tab contains the following configuration options:

- RTP Version: 0
- RTP Payload Type: 0
- Streaming: Bi-Directional, Tx Only, Rx Only
- Use same settings in both directions
- Rx** sub-section:
 - Media TDF: dan/BingTac.zip (with a 'Select...' button)
 - Packet Size (bytes): 1024
 - Packet Interval (ms): 20

Writeable Attributes:

Writeable Attribute	Description								
Direction	<p>Sets the direction/mode for the RTP generated traffic.</p> <p>Type: int, Default: 2</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tx Only, Client-to-Server</td> </tr> <tr> <td>2</td> <td>Rx Only, Server-To-Client</td> </tr> <tr> <td>3</td> <td>Bi-Directional, Both</td> </tr> </tbody> </table>	Value	Description	1	Tx Only, Client-to-Server	2	Rx Only, Server-To-Client	3	Bi-Directional, Both
Value	Description								
1	Tx Only, Client-to-Server								
2	Rx Only, Server-To-Client								
3	Bi-Directional, Both								
PayloadType	<p>Sets the Payload Type</p> <p>Type: int Default: 0 Min: 0 Max: 255</p>								
RxInterval	<p>Sets the Rx Server-to-Client packet interval in milliseconds.</p> <p>Type: String Default: ""</p>								
RxSize	<p>Sets the size of each Rx Server-to-Client packet.</p> <p>Type: int Default: 1024 Min: 1 Max: 65535</p>								
RxTdfLibrary	<p>Sets the library ID for the TAS-installed TDF file to use for the Rx Server-to-Client media.</p> <p>Type: int Default: -1</p>								
RxTdfName	<p>Sets the name of the TAS-installed TDF file to use for the Rx Server-to-Client media.</p> <p>Type: String Default: ""</p>								
SameInBothDirections	<p>Sets whether or not to use the same file in both directions, when using Bi-Directional mode. When SameInBothDirections is true, use only the Tx attributes to define the flow.</p> <p>Type: Boolean Default: False</p>								
TxInterval	<p>Sets the Tx Client-to-Server packet interval in milliseconds.</p> <p>Type: String Default: ""</p>								
TxSize	<p>Sets the size of each Tx Client-to-Server packet.</p> <p>Type: int Default: 1024 Min: 1 Max: 65535</p>								
TxTdfLibrary	<p>Sets the library ID for the TAS-installed TDF file to use for the Tx Client-to-Server media.</p> <p>Type: int Default: -1</p>								

Spirent Landslide

Tcl API Object and Perform Function Reference

TxDfName	Sets the name of the TAS-installed TDF file to use for the Tx Client-to-Server media. Type: String Default: ""
Version	Sets the RTP Version. Type: int Default: 0 Min: 0 Max: 2

Read-only Attributes:

None

Children:

None

RtpVideo

The rtpvideo protocol specific information. In the GUI, the RtpVideo object is represented on the *RTP Video* tab of the DMF Editor. This protocol is only applicable to VoLTE RTP Media DMFs.

The screenshot displays the 'RTP Video' configuration window in the DMF Editor. It features several sections:

- General:** Includes radio buttons for 'Originating Streaming' and 'Terminating Streaming', each with options for 'Bi-Directional' (selected), 'Tx Only', and 'Rx Only'. A checkbox for 'Use same settings in both directions' is present.
- Jitter Buffer Size (ms):** A text input field containing '200'.
- Max Network Delay (ms):** A text input field containing '1500'.
- Codec Configuration:** A section with dropdown menus for 'Codec' (set to 'VP8'), 'Media Subtype' (set to 'VP8'), and a text input for 'Payload Type' (set to '96').
- Call Configuration (Only applies to L4-7 Data Traffic uses):** Includes text input fields for 'Call Hold Time (s)' (set to '20') and 'Call Pending Time (s)' (set to '10').
- Tx/Rx:** A section with 'Tx' and 'Rx' tabs.
- Media TDF:** A text input field for the Media TDF name, accompanied by a file selection icon.
- Packet Size (bytes):** A text input field containing '1024'.

Writeable Attributes:

Writeable Attribute	Description										
CallHoldTime	<p>Sets the Call Hold Time used when this RTP Voice DMF is executed from L4-7 Data Profile. VoLTE uses its own timers.</p> <p>Type: int Default: 20 Min: 0 Max: 65535</p>										
CallPendingTime	<p>Sets the Call Pending Time used when this RTP Voice DMF is executed from L4-7 Data Profile. VoLTE uses its own timers.</p> <p>Type: int Default: 10 Min: 0 Max: 65535</p>										
Codec	<p>Sets the Voice Codec to use.</p> <p>Type: Custom String Default: "H.264" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>H.265</td> <td>H.265</td> </tr> <tr> <td>H.264</td> <td>H.264</td> </tr> <tr> <td>H.263</td> <td>H.263</td> </tr> <tr> <td>VP8</td> <td>VP8</td> </tr> </tbody> </table>	Value	Description	H.265	H.265	H.264	H.264	H.263	H.263	VP8	VP8
Value	Description										
H.265	H.265										
H.264	H.264										
H.263	H.263										
VP8	VP8										
Direction	<p>Sets the direction/mode for the RTP generated traffic from the Originating Side.</p> <p>Type: int, Default: 2</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tx Only, Client-to-Server</td> </tr> <tr> <td>2</td> <td>Rx Only, Server-To-Client</td> </tr> <tr> <td>3</td> <td>Bi-Directional, Both</td> </tr> </tbody> </table>	Value	Description	1	Tx Only, Client-to-Server	2	Rx Only, Server-To-Client	3	Bi-Directional, Both		
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2	Rx Only, Server-To-Client										
3	Bi-Directional, Both										
DirectionTerminating	<p>Sets the direction/mode for the RTP generated traffic from the Terminating Side.</p> <p>Type: int, Default: 2</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tx Only, Client-to-Server</td> </tr> <tr> <td>2</td> <td>Rx Only, Server-to-Client</td> </tr> <tr> <td>3</td> <td>Bi-Directional, Both</td> </tr> </tbody> </table>	Value	Description	1	Tx Only, Client-to-Server	2	Rx Only, Server-to-Client	3	Bi-Directional, Both		
Value	Description										
1	Tx Only, Client-to-Server										
2	Rx Only, Server-to-Client										
3	Bi-Directional, Both										
JitterBufferSize	<p>Sets the Buffer Size for Jitter calculations.</p> <p>Type: int Default: 200 Min: 20 Max: 65515 (< MaxNetworkDelay-20)</p>										
MaxNetworkDelay	<p>Sets the Maximum Network Delay allowed in milliseconds.</p> <p>Type: int Default: 1500 Min: 40 Max: 65535 (< JitterBufferSize+20)</p>										
PayloadType	<p>Sets the Payload Type (H.263 v1 will always use 34)</p> <p>Type: int Default: 0 Min: 0 Max: 255</p>										

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RxSize	<p>Sets the size of each Rx Server-to-Client packet.</p> <p>Type: int Default: 1024 Min: 1 Max: 65535</p>
RxTdfLibrary	<p>Sets the library ID for the TAS-installed TDF file to use for the Rx Server-to-Client media.</p> <p>Type: int Default: -1</p>
RxTdfName	<p>Sets the name of the TAS-installed TDF file to use for the Rx Server-to-Client media.</p> <p>Type: String Default: ""</p>
SameInBothDirections	<p>Sets whether or not to use the same file in both directions, when using Bi-Directional mode. When SameInBothDirections is true, use only the Tx attributes to define the flow.</p> <p>Type: Boolean Default: False</p>
TxSize	<p>Sets the size of each Tx Client-to-Server packet.</p> <p>Type: int Default: 1024 Min: 1 Max: 65535</p>
TxTdfLibrary	<p>Sets the library ID for the TAS-installed TDF file to use for the Tx Client-to-Server media.</p> <p>Type: int Default: -1</p>
TxTdfName	<p>Sets the name of the TAS-installed TDF file to use for the Tx Client-to-Server media.</p> <p>Type: String Default: ""</p>

Read-only Attributes:

None

Children:

None

RtpVoice

The rtpvoice protocol specific information. In the GUI, the RtpVoice object is represented on the *RTP Voice* tab of the DMF Editor. This protocol is only applicable to VoLTE RTP Media DMFs.

The screenshot shows the 'General RTP Voice' configuration window. It includes sections for Originator and Terminator Modes (both set to Bi-Directional), Jitter Buffer Size (200 ms), and Max Network Delay (1500 ms). The Codec Configuration section is expanded, showing settings for EVS codec, Frame Interval (20 ms), Frames per RTP Packet (1), Min Rate (VBR/5.9), RTP Packet Payload Format (Header-Full), Media Subtype (EVS), Payload Type (96), Audio Bandwidth (Narrowband), Max Rate (VBR/5.9), and checkboxes for VAD/DTX and Dynamic Payload. The Call Configuration section shows Call Hold Time (20 s) and Call Pending Time (10 s). The RTP Packet Gap Detection section has an unchecked checkbox and thresholds of 300 ms (Short), 500 ms (Middle), and 1000 ms (Long). At the bottom, the Media TDF (.wav) field contains '[5G Compliance]/BrEnglish_NB_f1s4_f1s2_6s.wav'.

Writeable Attributes:

Writeable Attribute	Description												
AudioBandwidth	<p>Sets the Audio Bandwidth for the EVS and OPUS Codecs.</p> <p>Type: String Default: "nb" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>nb</td> <td>NarrowBand</td> </tr> <tr> <td>Mb</td> <td>MediumBand (OPUS ONLY)</td> </tr> <tr> <td>wb</td> <td>Wideband</td> </tr> <tr> <td>swb</td> <td>Superwideband</td> </tr> <tr> <td>fb</td> <td>Fullband</td> </tr> </tbody> </table>	Value	Description	nb	NarrowBand	Mb	MediumBand (OPUS ONLY)	wb	Wideband	swb	Superwideband	fb	Fullband
Value	Description												
nb	NarrowBand												
Mb	MediumBand (OPUS ONLY)												
wb	Wideband												
swb	Superwideband												
fb	Fullband												
CallHoldTime	<p>Sets the Call Hold Time used when this RTP Voice DMF is executed from L4-7 Data Profile. VoLTE uses its own timers.</p> <p>Type: int Default: 20 Min: 0 Max: 65535</p>												

CallPendingTime	<p>Sets the Call Pending Time used when this RTP Voice DMF is executed from L4-7 Data Profile. VoLTE uses its own timers.</p> <p>Type: int Default: 10 Min: 0 Max: 65535</p>																						
Codec	<p>Sets the Voice Codec to use.</p> <p>Type: String Default: "AMR" Possible Values:</p> <table border="1" data-bbox="683 506 1490 842"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>AMR</td> <td>AMR Codec</td> </tr> <tr> <td>AMR-WB</td> <td>AMR-WB Codec</td> </tr> <tr> <td>EVRC-B</td> <td>EVRC-B Codec</td> </tr> <tr> <td>EVS</td> <td>EVS Codec (requires license)</td> </tr> <tr> <td>G.711-muLaw</td> <td>G.711μ Codec</td> </tr> <tr> <td>G.711-ALaw</td> <td>G.711A Codec</td> </tr> <tr> <td>G.729AB</td> <td>G.729AB Codec</td> </tr> <tr> <td>G.729B</td> <td>G.729B Codec</td> </tr> <tr> <td>iLBC</td> <td>iLBC Codec</td> </tr> <tr> <td>OPUS</td> <td>OPUS Codec</td> </tr> </tbody> </table>	Value	Description	AMR	AMR Codec	AMR-WB	AMR-WB Codec	EVRC-B	EVRC-B Codec	EVS	EVS Codec (requires license)	G.711-muLaw	G.711μ Codec	G.711-ALaw	G.711A Codec	G.729AB	G.729AB Codec	G.729B	G.729B Codec	iLBC	iLBC Codec	OPUS	OPUS Codec
Value	Description																						
AMR	AMR Codec																						
AMR-WB	AMR-WB Codec																						
EVRC-B	EVRC-B Codec																						
EVS	EVS Codec (requires license)																						
G.711-muLaw	G.711μ Codec																						
G.711-ALaw	G.711A Codec																						
G.729AB	G.729AB Codec																						
G.729B	G.729B Codec																						
iLBC	iLBC Codec																						
OPUS	OPUS Codec																						
CodecBitRate	<p>Sets the Codec's bit rate to use. Also covers the Min Rate for EVS (AudioBandwidth dependent), EVRCB and EVRCB0, and the Rate for EVRCB1. Does not apply to G.711, G.729, or OPUS Codecs.</p> <p>Type: Custom String Default: <Depends upon Codec></p> <table border="1" data-bbox="683 1062 1490 1520"> <thead> <tr> <th>Codec</th> <th>Possible Values</th> </tr> </thead> <tbody> <tr> <td>AMR</td> <td>"4.75", "5.15", "5.90", "6.70", "7.40", "7.95", "10.20", "12.20"</td> </tr> <tr> <td>AMR-WB</td> <td>"6.60", "8.85", "12.65", "14.25", "15.85", "18.25", "19.85", "23.05", "23.85"</td> </tr> <tr> <td>EVRC-B</td> <td>"0.80", "2.0", "4.0", "8.55" (depends upon subtype CodecSdpName)</td> </tr> <tr> <td>EVS (Narrowband)</td> <td>"VBR/5.9", "7.2", "8", "9.6", "13.2", "16.4", "24.4"</td> </tr> <tr> <td>EVS (Wideband)</td> <td>"VBR/5.9", "7.2", "8", "9.6", "13.2", "16.4", "24.4", "32", "48", "64", "96", "128"</td> </tr> <tr> <td>EVS (Superwideband)</td> <td>"9.6", "13.2", "16.4", "24.4", "32", "48", "64", "96", "128"</td> </tr> <tr> <td>EVS (Fullband)</td> <td>"16.4", "24.4", "32", "48", "64", "96", "128"</td> </tr> <tr> <td>iLBC</td> <td>"13.3", "15.2"</td> </tr> </tbody> </table>	Codec	Possible Values	AMR	"4.75", "5.15", "5.90", "6.70", "7.40", "7.95", "10.20", "12.20"	AMR-WB	"6.60", "8.85", "12.65", "14.25", "15.85", "18.25", "19.85", "23.05", "23.85"	EVRC-B	"0.80", "2.0", "4.0", "8.55" (depends upon subtype CodecSdpName)	EVS (Narrowband)	"VBR/5.9", "7.2", "8", "9.6", "13.2", "16.4", "24.4"	EVS (Wideband)	"VBR/5.9", "7.2", "8", "9.6", "13.2", "16.4", "24.4", "32", "48", "64", "96", "128"	EVS (Superwideband)	"9.6", "13.2", "16.4", "24.4", "32", "48", "64", "96", "128"	EVS (Fullband)	"16.4", "24.4", "32", "48", "64", "96", "128"	iLBC	"13.3", "15.2"				
Codec	Possible Values																						
AMR	"4.75", "5.15", "5.90", "6.70", "7.40", "7.95", "10.20", "12.20"																						
AMR-WB	"6.60", "8.85", "12.65", "14.25", "15.85", "18.25", "19.85", "23.05", "23.85"																						
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EVS (Superwideband)	"9.6", "13.2", "16.4", "24.4", "32", "48", "64", "96", "128"																						
EVS (Fullband)	"16.4", "24.4", "32", "48", "64", "96", "128"																						
iLBC	"13.3", "15.2"																						
CodecSdpName	<p>Sets the Codec name to look for in the SDP. AKA Media Subtype.</p> <p>Type: String Default: ""</p>																						
DynamicPayloadEnabled	<p>When true, allows dynamic payloads otherwise must match PayloadType configured</p> <p>Type: Boolean Default: false</p>																						

FrameFormat	<p>Sets the Frame Format for AMR/AMR-WB Codecs.</p> <p>Type: int, Default: 1</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Bandwidth-Efficient (IF1)</td> </tr> <tr> <td>1</td> <td>Octet-Aligned (IF2)</td> </tr> </tbody> </table>	Value	Description	0	Bandwidth-Efficient (IF1)	1	Octet-Aligned (IF2)				
Value	Description										
0	Bandwidth-Efficient (IF1)										
1	Octet-Aligned (IF2)										
JitterBufferSize	<p>Sets the Buffer Size for Jitter calculations.</p> <p>Type: int Default: 200 Min: 20 Max: 65515 (< MaxNetworkDelay-80)</p>										
MaxBitRate	<p>Sets the Maximum Bit Rate for EVRC-B Codec, in bits/second; applies to EVRCB0 and EVRCB Media Subtypes, and EVS Codec</p> <p>Type: Custom String (double) Default: 8.55 Possible Values (EVS): "VBR/5.9", "7.2", "8", "9.6", "13.2", "16.4", "24.4", "32", "48", "64", "96", "128" Possible values also depend on AudioBandwith and CodecBitRate selection. Refer to the online Help or the GUI editor for exact rules. Possible Values (EVRC-B):</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0.80</td> <td>ER</td> </tr> <tr> <td>2.0</td> <td>QR Quarter Rate</td> </tr> <tr> <td>4.0</td> <td>HR Half Rate</td> </tr> <tr> <td>8.55</td> <td>FR Full Rate</td> </tr> </tbody> </table>	Value	Description	0.80	ER	2.0	QR Quarter Rate	4.0	HR Half Rate	8.55	FR Full Rate
Value	Description										
0.80	ER										
2.0	QR Quarter Rate										
4.0	HR Half Rate										
8.55	FR Full Rate										
MaxInterleave	<p>Sets the Maximum Interleave for certain EVRC-B Codec configurations.</p> <p>Type: int Default: 5 Min: 0 Max: 7</p>										
MaxNetworkDelay	<p>Sets the Maximum Network Delay allowed in milliseconds.</p> <p>Type: int Default: 1500 Min: 40 Max: 65535 (< JitterBufferSize+80)</p>										
Mode	<p>Sets the direction/mode for the RTP generated traffic on the Origination Side.</p> <p>Type: int, Default: 2</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tx Only, Client-to-Server</td> </tr> <tr> <td>2</td> <td>Rx Only, Server-To-Client</td> </tr> <tr> <td>3</td> <td>Bi-Directional, Both</td> </tr> <tr> <td>4</td> <td>Push-To-Talk</td> </tr> </tbody> </table>	Value	Description	1	Tx Only, Client-to-Server	2	Rx Only, Server-To-Client	3	Bi-Directional, Both	4	Push-To-Talk
Value	Description										
1	Tx Only, Client-to-Server										
2	Rx Only, Server-To-Client										
3	Bi-Directional, Both										
4	Push-To-Talk										
ModeTerm	<p>Sets the direction/mode for the RTP generated traffic on the Termination side.</p> <p>Type: int, Default: 2</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tx Only, Client-to-Server</td> </tr> <tr> <td>2</td> <td>Rx Only, Server-to-Client</td> </tr> <tr> <td>3</td> <td>Bi-Directional, Both</td> </tr> <tr> <td>4</td> <td>Push-to-Talk</td> </tr> </tbody> </table>	Value	Description	1	Tx Only, Client-to-Server	2	Rx Only, Server-to-Client	3	Bi-Directional, Both	4	Push-to-Talk
Value	Description										
1	Tx Only, Client-to-Server										
2	Rx Only, Server-to-Client										
3	Bi-Directional, Both										
4	Push-to-Talk										

PacketGapEnabled	<p>Sets whether or not the Packet Gap measurements are enabled.</p> <p>Type: Boolean Default: False</p>														
PacketGapLong	<p>Sets the Long Packet Gap threshold in milliseconds.</p> <p>Type: int Default: 1000 Min: Medium Gap + 1 Max: 65535</p>														
PacketGapMiddle	<p>Sets the Middle Packet Gap threshold in milliseconds.</p> <p>Type: int Default: 500 Min: Medium Gap + 1 Max: Long Gap - 1</p>														
PacketGapShort	<p>Sets the Short Packet Gap threshold in milliseconds.</p> <p>Type: int Default: 300 Min: 0 Max: Long Gap - 1</p>														
PacketPayloadFormat	<p>Sets the RTP Packet Payload Format for EVS and EVRC-B Codecs, in certain configurations.</p> <p>Type: Custom String Default:</p> <p>Possible Values (EVS):</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HeaderFul</td> <td>Header-Full</td> </tr> <tr> <td>Compact</td> <td>Compact</td> </tr> </tbody> </table> <p>Possible Values (EVRC-B):</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Bundled</td> <td>Interleaved/Bundled</td> </tr> <tr> <td>HeaderFree</td> <td>Header-Free</td> </tr> <tr> <td>Compact</td> <td>Compact (Header-Free)</td> </tr> </tbody> </table>	Value	Description	HeaderFul	Header-Full	Compact	Compact	Value	Description	Bundled	Interleaved/Bundled	HeaderFree	Header-Free	Compact	Compact (Header-Free)
Value	Description														
HeaderFul	Header-Full														
Compact	Compact														
Value	Description														
Bundled	Interleaved/Bundled														
HeaderFree	Header-Free														
Compact	Compact (Header-Free)														
PayloadType	<p>Sets the Payload Type. Only editable for AMR, AMR_WB, EVRC-B, G.711, G.729, iLBC, OPUS, and EVS Codecs. Fixed at 18 for G.711 Codecs.</p> <p>Type: int Default: 96 Min: 96 Max: 127</p>														
SamplesPerRtpPacket	<p>Sets the number of samples to include in each packet. Frames per RTP Packet.</p> <p>Type: int Default: 1 Min: 1 Max: 3</p>														

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SampleInterval	<p>The sample interval in milliseconds. Applies to G.711 and OPUS Codecs; all others should be set to 20.</p> <p>OPUS Codec: Type: Custom String Value Default: 2.5</p> <table border="1"><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>2.5</td><td>2.5ms</td></tr><tr><td>5</td><td>5ms</td></tr><tr><td>10</td><td>10ms</td></tr><tr><td>20</td><td>20ms</td></tr><tr><td>40</td><td>40ms</td></tr><tr><td>60</td><td>60ms</td></tr></tbody></table> <p>G.711 Codecs: Type: int Default: 20 Min: 1 Max: 180</p>	Value	Description	2.5	2.5ms	5	5ms	10	10ms	20	20ms	40	40ms	60	60ms
Value	Description														
2.5	2.5ms														
5	5ms														
10	10ms														
20	20ms														
40	40ms														
60	60ms														
TdfLibrary	<p>Sets the library ID for the TAS-installed TDF file to use for the RTP Voice media.</p> <p>Type: int Default: -1</p>														
TdfName	<p>Sets the name of the TAS-installed TDF file to use for the RTP Voice media.</p> <p>Type: String Default: ""</p>														
VadDtxEnabled	<p>Sets the VAD/DTX mode for the EVS Codec only. If EVS codec's rate is VBR/5.9 then the VadDtsEnabled option must be true/ON.</p> <p>Type: Boolean Default: False</p>														

Read-only Attributes:

None

Children:

None

UlpInfo

The ULP protocol specific information. In the GUI, the ULP object is represented on the *ULP* tab of the DMF Editor.

The screenshot shows the 'UlpInfo' configuration window with the following sections and settings:

- General** (selected tab):
 - ULP Version: 2.0.0
 - Initiated by Network
 - Start Time (s): 5
 - Start Rate (subscribers/s): 1.0
 - Starting SET IP Address: [Empty]
 - Include QoP
 - QoP**
 - Horizontal Accuracy: 0
 - Maximum Location Age: -1
 - Vertical Accuracy: -1
 - Delay: -1
- Client**
 - Starting IMSI: 440000000010102
 - UT1 Time (s): 11
 - UT2 Time (s): 11
 - UT3 Time (s): 10
 - POS Period (s): 0
 - LTE Serving Cell Info**
 - MCC: 000
 - MNC: 00
 - Cell ID: 0
 - Physical Cell ID: 0
 - TAC: 00000
 - RSRP Result: -1
 - RSRQ Result: -1
 - Timing Advance: -1
 - LTE Neighbor Cell Info**
 - Number of Neighbor Cells: 0
 - Table with columns: Physical Cell ID, RSRP Result, RSRQ Result
 - Pos Technology**
 - SET-assisted A-GPS
 - SET-based A-GPS
 - Autonomous GPS
 - AFLT
 - E-CID
 - E-OTD
 - OTDOA
 - Apply Test Data File to ULP Client: [Empty]
- Server**
 - Positioning Method: otdoa
 - E-SLP Address: FQDN | 911.landslide.spirent.com
 - ST1 Time (s): 10
 - ST2 Time (s): 10
 - Apply Test Data File to ULP Server: [Empty]

Writeable Attributes:

Writeable Attribute	Description
CellId	The Cell Identity Type: int Default: 0 Range: [0, 268435455]
ClnCfgFileEn	Apply Test Data File to ULP Client Type: boolean Default: false
ClnCfgFileLibrary	Sets the library ID for the TAS-installed TDF file to use for the ULP Client Type: int Default: -1
ClnCfgFileName	Sets the name of the TAS-installed TDF file to use for the ULP Client. Type: String Default: ""
Imsi	The Starting IMSI Type: String Default: "440000000010102" Restriction: Must be 15 decimal digits
MCC	The MCC for ULP Type: String Default: "000" Restriction: Must be 3 decimal digits
MNC	The MNC for ULP Type: String Default: "00" Restriction: Must be 2 or 3 decimal digits
NeighborPhysCellId_x	The Physical Id of x-th Neighbor Cell Type: int Default: 1 Range: [0, 503]
NeighborRsrpResult_x	The Rsrp Result of x-th Neighbor Cell Type: int Default: -1 Range: [0, 97] Note: -1 means not set
NeighborRsrqResult_x	The Rsrq Result of x-th Neighbor Cell Type: int Default: -1 Range: [0, 34] Note: -1 means not set

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NumNeighborCell	<p>Number of Neighbor Cells</p> <p>Type: int Default: 0 Range: [0, 8]</p>
PhysCellId	<p>Physical Cell Id</p> <p>Type: int Default: 0 Range: [0, 503]</p>
PosPeriod	<p>Pos Period</p> <p>Type: int Default: 0 Range: [0, 255]</p>
QopDelay	<p>Qop Delay</p> <p>Type: int Default: -1 Range: [0, 7] Note: -1 means not set</p>
QopEn	<p>Configure QoP</p> <p>Type: boolean Default: false</p>
QopHorAcc	<p>Qop Horizontal Accuracy</p> <p>Type: int Default: 0 Range: [0, 127]</p>
QopMaxLocAge	<p>Qop Maximum Location Age</p> <p>Type: int Default: -1 Range: [0, 655354] Note: -1 means not set</p>
QopVerAcc	<p>Qop Vertical Accuracy</p> <p>Type: int Default: -1 Range: [0, 127] Note: -1 means not set</p>
RsrpResult	<p>RSRP Result</p> <p>Type: int Default: -1 Range: [0, 97] Note: -1 means not set</p>
RsrqResult	<p>RSRQ Result</p> <p>Type: int Default: -1 Range: [0, 34] Note: -1 means not set</p>

SrvCfgFileEn	Apply Test Data File to ULP Server Type: boolean Default: false																																								
SrvCfgFileLibrary	Sets the library ID for the TAS-installed TDF file to use for the ULP Server Type: int Default: -1																																								
SrvCfgFileName	Sets the name of the TAS-installed TDF file to use for the ULP Server. Type: String Default: ""																																								
SrvPosMethod	Positioning Method Type: String Default: "otdoa" Possible Values: <table border="1" data-bbox="592 808 1502 1438"> <thead> <tr> <th>Value</th> <th>Comments</th> </tr> </thead> <tbody> <tr><td>agps_set_assisted</td><td></td></tr> <tr><td>agps_set_based</td><td></td></tr> <tr><td>agps_set_assisted_pref</td><td></td></tr> <tr><td>agps_set_based_pref</td><td></td></tr> <tr><td>autonomous_gps</td><td></td></tr> <tr><td>aflt</td><td></td></tr> <tr><td>eotd</td><td></td></tr> <tr><td>no_position</td><td></td></tr> <tr><td>historical_data_retrieval</td><td></td></tr> <tr><td>agnss_set_based</td><td></td></tr> <tr><td>agps_set_based</td><td></td></tr> <tr><td>agnss_set_assisted_pref</td><td></td></tr> <tr><td>agnss_set_based_pref</td><td></td></tr> <tr><td>autonomous_gnss</td><td></td></tr> <tr><td>session_info_query</td><td></td></tr> <tr><td>generic_set_assisted</td><td>Require UlpVersion is equal to 1</td></tr> <tr><td>generic_set_based</td><td>Require UlpVersion is equal to 1</td></tr> <tr><td>gss</td><td>Require UlpVersion is equal to 1</td></tr> <tr><td>other</td><td>Require UlpVersion is equal to 1</td></tr> </tbody> </table>	Value	Comments	agps_set_assisted		agps_set_based		agps_set_assisted_pref		agps_set_based_pref		autonomous_gps		aflt		eotd		no_position		historical_data_retrieval		agnss_set_based		agps_set_based		agnss_set_assisted_pref		agnss_set_based_pref		autonomous_gnss		session_info_query		generic_set_assisted	Require UlpVersion is equal to 1	generic_set_based	Require UlpVersion is equal to 1	gss	Require UlpVersion is equal to 1	other	Require UlpVersion is equal to 1
Value	Comments																																								
agps_set_assisted																																									
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agps_set_based_pref																																									
autonomous_gps																																									
aflt																																									
eotd																																									
no_position																																									
historical_data_retrieval																																									
agnss_set_based																																									
agps_set_based																																									
agnss_set_assisted_pref																																									
agnss_set_based_pref																																									
autonomous_gnss																																									
session_info_query																																									
generic_set_assisted	Require UlpVersion is equal to 1																																								
generic_set_based	Require UlpVersion is equal to 1																																								
gss	Require UlpVersion is equal to 1																																								
other	Require UlpVersion is equal to 1																																								
TA	Timing Advance Type: int Default: -1 Range: [0, 1282] Note: -1 means not set																																								
Tac	TAC Type: String Default: "00000" Restriction: Can only be 5 decimal digits Range: [00000 , 65535]																																								

Spirent Landslide

Tcl API Object and Perform Function Reference

Ut1Time	<p>UT1 Time</p> <p>Type: int Default: 11 Range: [0, 255]</p>
Ut2Time	<p>UT2 Time</p> <p>Type: int Default: 11 Range: [0, 255]</p>
Ut3Time	<p>UT3 Time</p> <p>Type: int Default: 11 Range: [0, 255]</p>
UlpInitByNtwkEn	<p>Initiated by Network</p> <p>Type: Boolean Default: false</p>
UlpPosTechSetAssistedAGps	<p>SET-assisted A-GPS</p> <p>Type: int Default: 1 Range: [0,1]</p>
UlpPosTechSetBasedAGps	<p>SET-based A-GPS</p> <p>Type: int Default: 0 Range: [0,1]</p>
UlpPosTechAutoGps	<p>Autonomous GPS</p> <p>Type: int Default: 0 Range: [0,1]</p>
UlpPosTechAflt	<p>AFLT</p> <p>Type:int Default: 0 Range: [0,1]</p>
UlpPosTechEcid	<p>E-CID</p> <p>Type: int Default: 1 Range: [0,1]</p>
UlpPosTechEotd	<p>E-OTD</p> <p>Type: int Default: 0 Range: [0,1]</p>

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Tcl API Object and Perform Function Reference

UlpPosTechOtdoa	<p>OTDOA</p> <p>Type: int Default: 1 Range: [0,1]</p>						
UlpEslpAddrEn	<p>E-SLP Address Enabler</p> <p>Type: Boolean Default: false</p>						
UlpEslpAddr	<p>E-SLP Address</p> <p>Type: String (Valid IP or FQDN) Default: e-slp.lte.911.landslide.spirent.com</p>						
UlpEslpAddrType	<p>E-SLP Address</p> <p>Type: int Default: 0 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>FQDN</td> </tr> <tr> <td>1</td> <td>IP</td> </tr> </tbody> </table>	Value	Description	0	FQDN	1	IP
Value	Description						
0	FQDN						
1	IP						
UlpStartTime	<p>Start Time (s)</p> <p>Type: int Default: 5 Range: [0, 65535]</p>						
UlpStartRate	<p>Start Rate (subscribers/s)</p> <p>Type: double Default: 1.0 Range: [0.001, 1000]</p>						
UlpSt1Time	<p>ST1 Time (s)</p> <p>Type: int Default: 10 Range: [0, 255]</p>						
UlpSt2Time	<p>ST2 Time (s)</p> <p>Type: int Default: 10 Range: [0, 255]</p>						

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Tcl API Object and Perform Function Reference

UlpVersion	ULP Version Type: String Default: "0" Possible Values: <table border="1"><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>0</td><td>2.0.0</td></tr><tr><td>1</td><td>3.0.0</td></tr></tbody></table>	Value	Description	0	2.0.0	1	3.0.0
Value	Description						
0	2.0.0						
1	3.0.0						
UlpSetIpAddrEn	Starting SET IP Address Enabler Type: Boolean Default: false						
UlpSetIpAddr	Starting SET IP Address Type: String (Valid IP value. Either IPv4 or IPv6.) Default: ""						

Read-only Attributes:

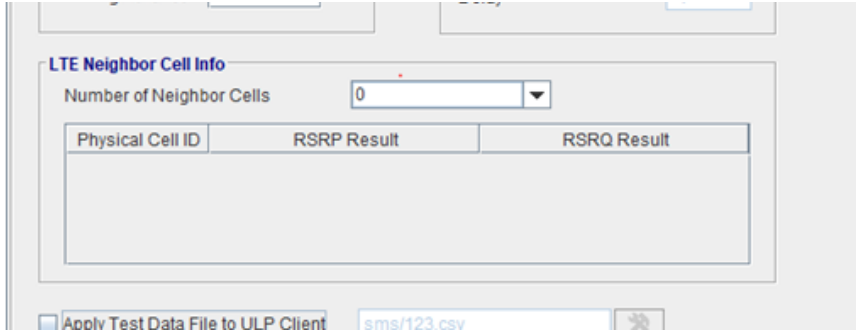
None

Children:

Child	Description
NeighborCell	A Neighbor Cell Type: UserCreated Multiplicity: 0-8

NeighborCell

The ULP protocol specific information includes a list of Neighbor Cells. In the GUI, the NeighborCell object is represented as a row in the LTE Neighbor Cell Info table.



Writeable Attributes:

Writeable Attribute	Description
NeighborPhysCellId	The Physical Id of x-th Neighbor Cell Type: int Default: 1 Range: [0, 503]
NeighborRsrpResult	The Rsrp Result of x-th Neighbor Cell Type: int Default: -1 Range: [0, 97] Note: -1 means not set
NeighborRsrqResult	The Rsrq Result of x-th Neighbor Cell Type: int Default: -1 Range: [0, 34] Note: -1 means not set
NeighborPhysCellId	The Physical Id of x-th Neighbor Cell Type: int Default: 1 Range: [0, 503]

Read-only Attributes:

None

Children:

None

LppInfo

The LPP protocol specific information. In the GUI, the LPP object is represented on the *LPP* tab of the DMF Editor.

This protocol is only applicable when ULP protocol is set as data protocol.

General
ULP
LPP

Client

Location Estimate

Location Estimate

Coordinate Type: Ellipsoid Point

Latitude Sign: north # Of Points: 3

#	Latitude Sign	Latitude Degree	Longitude Degree
1	north	0	0
2	north	0	0
3	north	0	0

Latitude Degree: 0

Longitude Degree: 0

Altitude Direction: height

Altitude (m): 0

Inner Radius: 0

Uncertainty: 0

Uncertainty Semi Major: 0

Uncertainty Semi Minor: 0

Uncertainty Altitude: 0

Uncertainty Radius: 0

Orientation Major Axis (°): 0

Offset Angle: 0

Included Angle: 0

Confidence (%): 0

Velocity Estimate

Velocity Estimate

Type: Horizontal Velocity

Bearing (°): 0 Uncertainty Speed (km/h): 0

Horizontal Speed (km/h): 0 Horizontal Uncertainty Speed (km/h): 0

Vertical Direction: upward Vertical Uncertainty Speed (km/h): 0

Vertical Speed (km/h): 0

Location Error

Location Error Failure Cause: Undefined

Message Payload

Provide Capabilities Payload: 0x Request Assistance Data Payload: 0x

Provide Location Info Payload: 0x

Apply Test Data File to LPP Client: ✖

Server

Message Payload

Request Capabilities Payload: 0x Provide Assistance Data Payload: 0x

Request Location Info Payload: 0x

Apply Test Data File to LPP Server: ✖

Writeable Attributes:

Writeable Attribute	Description
LppClnLocEstimate	Location Estimate Type: int Default: 0 Range: [0,1]
LppClnLocEstCoordinateType	Coordinate Type Type: int Default: 0 Range: [0,6]
LppClnLocEstLatitudeSign	Latitude Sign Type: int Default: 0 Range: [0,1]
LppClnLocEstLatitudeDegree	Latitude Degree Type: int Default: 0 Range: [0,8388607]
LppClnLocEstLongitudeDegree	Longitude Degree Type: int Default: 0 Range: [-8388608,8388607]
LppClnLocEstAltitudeDirection	Altitude Direction Type: int Default: 0 Range: [0,1]
LppClnLocEstAltitude	Altitude Type: int Default: 0 Range: [0,32767]
LppClnLocEstInnerRadius	Altitude Inner Radius Type: int Default: 0 Range: [0,65535]
LppClnLocEstUncertainty	Uncertainty Type: int Default: 0 Range: [0,127]

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Tcl API Object and Perform Function Reference

LppClnLocEstUncertaintySemiMajor	Uncertainty Semi Major Type: int Default: 0 Range: [0,127]
LppClnLocEstUncertaintySemiMinor	Uncertainty Semi Minor Type: int Default: 0 Range: [0,127]
LppClnLocEstUncertaintyAltitude	Uncertainty Altitude Type: int Default: 0 Range: [0,127]
LppClnLocEstUncertaintyRadius	Uncertainty Radius Type: int Default: 0 Range: [0,127]
LppClnLocEstOrientationMajorAxis	Orientation Major Axis Type: int Default: 0 Range: [0,179]
LppClnLocEstOffsetAngle	Offset Angle Type: int Default: 0 Range: [0,179]
LppClnLocEstIncludedAngle	Include Angle Type: int Default: 0 Range: [0,179]
LppClnLocEstConfidence	Confidence Type: int Default: 0 Range: [0,100]
LppClnLocEstPolygonPointNum	Number of Polygon Points Type: int Default: 3 Range: [3,15]
LppClnVelocityEstimate	Velocity Estimate Type: int Default: 0 Range: [0,1]

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Tcl API Object and Perform Function Reference

LppClnVelEstType	Type Type: int Default: 0 Range: [0,3]
LppClnVelEstBearing	Bearing Type: int Default: 0 Range: [0,359]
LppClnVelEstHorizontalSpeed	Horizontal Speed Type: int Default: 0 Range: [0,2047]
LppClnVelEstVerticalDirection	Vertical Direction Type: int Default: 0 Range: [0,1]
LppClnVelEstVerticalSpeed	Vertical Speed Type: int Default: 0 Range: [0,255]
LppClnVelEstUncertaintySpeed	Uncertainty Speed Type: int Default: 0 Range: [0,255]
LppClnVelEstHorizontalUncertaintySpeed	Horizontal Uncertainty Speed Type: int Default: 0 Range: [0,255]
LppClnVelEstVerticalUncertaintySpeed	Vertical Uncertainty Speed Type: int Default: 0 Range: [0,255]
LppClnLocError	Location Error Type: int Default: 0 Range: [0,1]
LppClnLocErrorFailureCause	Failure Cause Type: int Default: 0 Range: [0,3]

Spirent Landslide

Tcl API Object and Perform Function Reference

LppClnProvideCapPayloadEn	Enable Provide Capabilities Payload Type: boolean Default: false
LppClnProvideCapPayload	Provide Capabilities Payload Type: String, up to 4094 HEX digits starting with 0x Default: "0x"
LppClnReqAdPayloadEn	Enable Request Assistance Data Payload Type: boolean Default: false
LppClnReqAdPayload	Request Assistance Data Payload Type: String, up to 4094 HEX digits starting with 0x Default: "0x"
LppClnProvideLocInfoPayloadEn	Enable Provide Location Info Payload Type: boolean Default: false
LppClnProvideLocInfoPayload	Provide Location Info Payload Type: String, up to 4094 HEX digits starting with 0x Default: "0x"
ClnOriginHostCfgFileEn	Apply Test Data File to LPP Client Type: boolean Default: false
ClnOriginHostCfgFileLibrary	Sets the library ID for the TAS-installed TDF file to use for the LPP Client Type: int Default: -1
ClnOriginHostCfgFileName	Sets the name of the TAS-installed TDF file to use for the LPP Client. Type: String Default: ""
LppSrvProvideCapPayloadEn	Enable Request Capabilities Payload Type: boolean Default: false
LppSrvProvideCapPayload	Request Capabilities Payload Type: String, up to 4094 HEX digits starting with 0x Default: "0x"
LppSrvReqAdPayloadEn	Enable Provide Assistance Data Payload Type: boolean Default: false
LppSrvReqAdPayload	Provide Assistance Data Payload Type: String, up to 4094 HEX digits starting with 0x Default: "0x"

Spirent Landslide

Tcl API Object and Perform Function Reference

LppSrvProvideLocInfoPayloadEn	Enable Request Location Info Payload Type: boolean Default: false
LppSrvProvideLocInfoPayload	Request Location Info Payload Type: String, up to 4094 HEX digits starting with 0x Default: "0x"
SrvOriginHostCfgFileEn	Apply Test Data File To LPP Server Type: boolean Default: false
SrvOriginHostCfgFileLibrary	Sets the name of the TAS-installed TDF file to use for the LPP Server. Type: String Default: ""

Read-only Attributes:

None

Children:

Child	Description
PolyPoint	A Polygon Point Type: UserCreated Multiplicity: 3-15

PolyPoint

The LPP protocol specific information includes a list of Polygon Points. In the GUI, the Polygon object is represented as a row in the Polygon Point table.

# Of Points			
		15	▼
#	Latitude Sign	Latitude Degree	Longitude Degree
1	north	0	0
2	north	0	0
3	north	0	0
4	north	0	0
5	north	0	0
6	north	0	0
7	north	0	0
8	north	0	0
9	north	0	0
10	north	0	0
11	north	0	0
12	north	0	0
13	north	0	0
14	north	0	0
15	north	0	0

Writeable Attributes:

Writeable Attribute	Description
LatitudeSign	The Latitude Degree of x-th Polygon point Type: int Default: 0 Range: [0, 1]
LatitudeDegree	The Latitude Degree of x-th Polygon point Type: int Default: 0 Range: [0, 8388607]
LongitudeDegree	The Longitude Degree of x-th Polygon point Type: int Default: 0 Range: [-8388608, 8388607]

Read-only Attributes:

None

Children:

None

LppeInfo

The LPPe protocol specific information. In the GUI, the LPPe object is represented on the *LPPe* tab of the DMF Editor.

This protocol is only applicable when ULP protocol is set as data protocol

The screenshot shows the DMF Editor GUI with the 'LPPe' tab selected. The interface is divided into two main sections: 'Client' and 'Server'. Each section contains an 'Enable LPPe' checkbox, which is currently unchecked. Below each checkbox are two text input fields with browse buttons (represented by a folder icon). The Client section fields are labeled 'LPPe Node Test Data File' and 'LPPe Session Test Data File'. The Server section fields are labeled 'LPPe Node Test Data File' and 'LPPe Sess Test Data File'.

Writeable Attributes:

Writeable Attribute	Description
LppClnLppeEn	Enable Client LPPe Type: Boolean Default: false
LppSrvLppeEn	Enable Server LPPe Type: Boolean Default: false
LppClnLppeNodeCfgFileLibrary	Sets the library ID for the TAS-installed TDF file to use for the LPPe Client Type: int Default: -1
LppClnLppeNodeCfgFileName	Sets the name of the TAS-installed TDF file to use for the LPPe Client. Type: String Default: ""

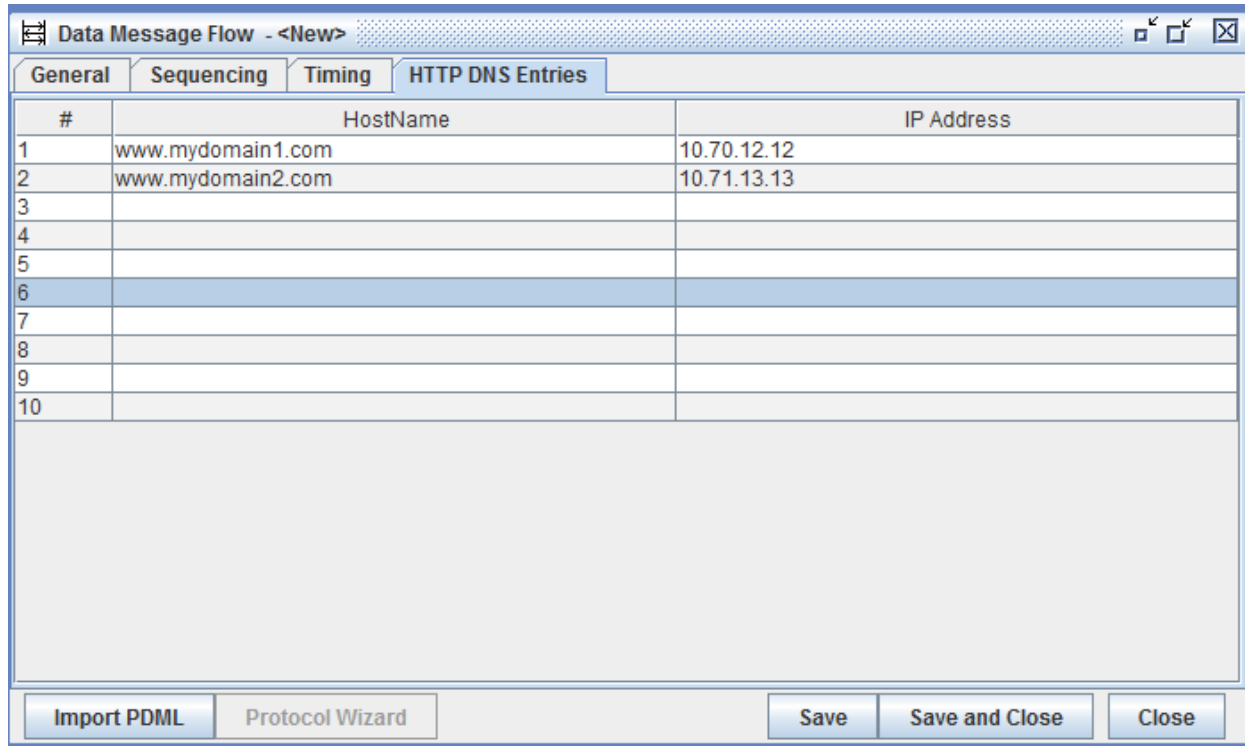
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Tcl API Object and Perform Function Reference

LppClnLppeSessionCfgFileLibrary	Sets the library ID for the TAS-installed TDF file to use for the LPPe Client Session Type: int Default: -1
LppClnLppeSessionCfgFileName	Sets the name of the TAS-installed TDF file to use for the LPPe Session Client. Type: String Default: ""
LppSrvLppeNodeCfgFileLibrary	Sets the library ID for the TAS-installed TDF file to use for the LPPe Server Node Type: int Default: -1
LppSrvLppeNodeCfgFileName	Sets the name of the TAS-installed TDF file to use for the LPPe Server Node. Type: String Default: ""
LppSrvLppeSessionCfgFileLibrary	Sets the library ID for the TAS-installed TDF file to use for the LPPe Server Session Type: int Default: -1
LppSrvLppeSessionCfgFileName	Sets the name of the TAS-installed TDF file to use for the LPPe Server Session. Type: String Default: ""

HttpDnsEntry

A single DNS Entry for the Advanced DMF, HTTP Redirect feature. In the GUI, the HttpDnsEntry objects are represented with this screen:



Writeable Attributes:

Writeable Attribute	Description
HostName	The Hostname of the server Type: String Default: ""
IpAddress	The IP Address of the server Type: String Default: ""

Read-only Attributes:

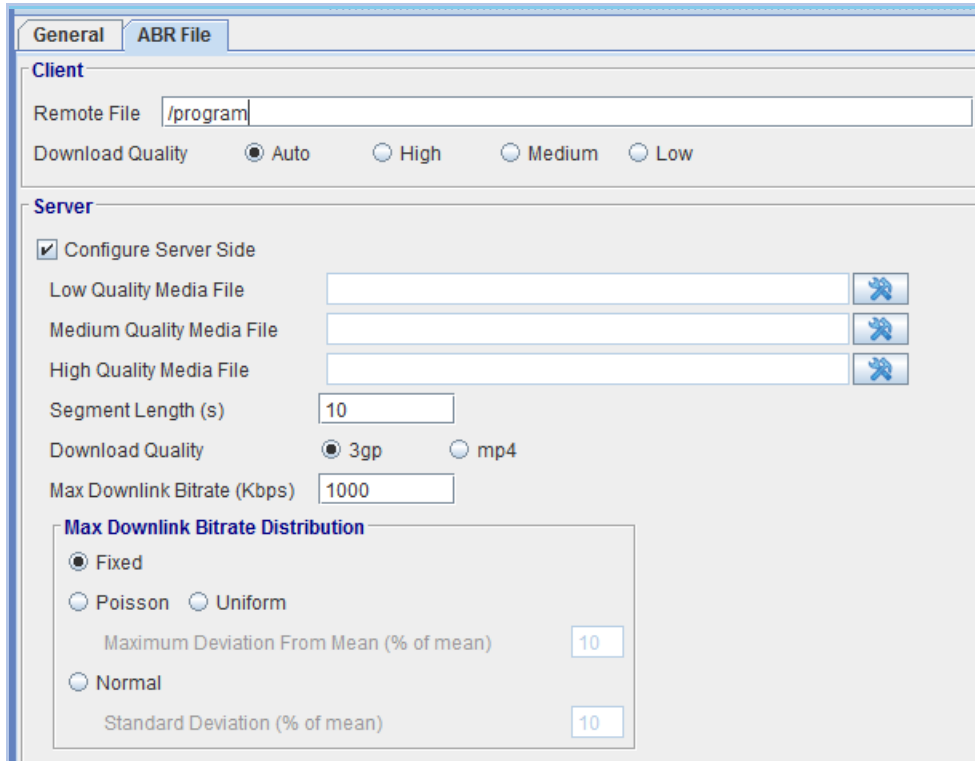
None

Children:

None

AbrMediaInfo

The ABR protocol specific information. In the GUI, the AbrMedia object is represented on the *ABR File* tab of the DMF Editor.



Writeable Attributes:

Writeable Attribute	Description
ClnDownloadQual	Sets Client Download Quality. Type: Custom String Default: auto Possible Values: auto, high, med, low
ClnManifestComp	Sets whether or not the client expects the manifest to be compressed. Type: Boolean Default: False
ClnRemoteFile	Sets the path to the remote file that the client will use. Type: String Default: ""
ConfigSvr	Sets whether or not to configure/enable the server side. If false, no "Srv" attributes are used. Type: Boolean Default: False

SvrCompManifest	<p>Sets whether or not the server compresses the manifest.</p> <p>Type: Boolean Default: False</p>								
SvrDwnlinkMbr	<p>Sets the Max Downlink Bitrate in Kbps.</p> <p>Type: int Default: 1000 Min: 1 Max: 10000</p>								
SvrDwnlinkMbrShape	<p>Sets the Distribution Type.</p> <p>Type: Custom String Default: Fixed Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Fixed</td> <td>The rate specified in the DMF is used throughout.</td> </tr> <tr> <td>Uniform</td> <td>The rate is evenly distributed between a minimum and maximum range. You set the width of this range as a percentage of the mean (the base rate or size that you defined) with the IntervalDeviation attribute.</td> </tr> <tr> <td>Normal</td> <td>The rate is randomly distributed in a bell-shaped fashion. You define the shape of the bell as a percentage of the mean (the base rate or size that you defined) by setting the standard deviation in the IntervalDeviation attribute. The width of the bell curve is 4 times the standard deviation.</td> </tr> </tbody> </table>	Value	Description	Fixed	The rate specified in the DMF is used throughout.	Uniform	The rate is evenly distributed between a minimum and maximum range. You set the width of this range as a percentage of the mean (the base rate or size that you defined) with the IntervalDeviation attribute.	Normal	The rate is randomly distributed in a bell-shaped fashion. You define the shape of the bell as a percentage of the mean (the base rate or size that you defined) by setting the standard deviation in the IntervalDeviation attribute. The width of the bell curve is 4 times the standard deviation.
Value	Description								
Fixed	The rate specified in the DMF is used throughout.								
Uniform	The rate is evenly distributed between a minimum and maximum range. You set the width of this range as a percentage of the mean (the base rate or size that you defined) with the IntervalDeviation attribute.								
Normal	The rate is randomly distributed in a bell-shaped fashion. You define the shape of the bell as a percentage of the mean (the base rate or size that you defined) by setting the standard deviation in the IntervalDeviation attribute. The width of the bell curve is 4 times the standard deviation.								
SvrDwnlinkMbrDev	<p>Either the Standard Deviation or Maximum Deviation for the packet size distribution, depending on the SizeDistribution value.</p> <p>Type: int Default: 10 Min: 0 Max: 100</p>								
SvrHiQTdfLibrary	<p>Sets the library ID for the TAS-installed TDF file to use for the High Quality File</p> <p>Type: int Default: -1</p>								
SvrHiQTdfName	<p>Sets the name of the TAS-installed TDF file to use for the High Quality File</p> <p>Type: String Default: ""</p>								
SvrLoQTdfLibrary	<p>Sets the library ID for the TAS-installed TDF file to use for the Low Quality File</p> <p>Type: int Default: -1</p>								
SvrLoQTdfName	<p>Sets the name of the TAS-installed TDF file to use for the Low Quality File</p> <p>Type: String Default: ""</p>								
SvrManifestType	<p>Sets the manifest type.</p> <p>Type: Custom String Default: dynamic Possible Values: dynamic, static</p>								

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Tcl API Object and Perform Function Reference

SvrMedQTdfLibrary	Sets the library ID for the TAS-installed TDF file to use for the Medium Quality File Type: int Default: -1
SvrMedQTdfName	Sets the name of the TAS-installed TDF file to use for the Medium Quality File Type: String Default: ""
SvrSegLen	Sets the Segment Length in seconds. Type: int Default: 10 Min: 1 Max: 60
SvrSegType	Sets the Segment Type. Type: Custom String Default: 3gp Possible Values: 3gp, mp4

Read-only Attributes:

None

Children:

None

DnsInfo

The DNS protocol specific information. In the GUI, the DnsInfo object is represented on the *DNS* tab of the DMF Editor.

The screenshot shows a GUI window with two tabs: 'General' and 'DNS'. The 'DNS' tab is active. Under 'Query Settings', there is a checked checkbox for 'Auto-Incremental Query Name'. Below it is a control with a plus icon, a minus icon, a text box containing '1', and a dropdown arrow. A table below contains one row with columns '#', 'Type', 'Class', and 'Name'. The row contains the values '0', 'A', 'IN', and 'ASDF'. Under 'NAT Settings', there is an unchecked checkbox for 'Enable NAT'. Below it are four input fields: 'NAT Ratio' (1000), 'Starting NAT IP Address' (1.1.1.1), 'Starting Port' (1000), and 'Port Chunk Size' (1). A note at the bottom states: 'NOTE: DNS NAT settings from the first DMF in a test case apply to all DNS DMFs in the test case'.

Writeable Attributes:

Writeable Attribute	Description
DnsAutoInc	Sets whether to auto increase number at the beginning of the query name each time sending a DNS request Type: Boolean Default: False
NatEnable	Sets whether to configure/enable the NAT Settings. If false, no other “Nat” attributes are used. Type: Boolean Default: False
NatPortChunkSize	Sets the NAT Port Chunk Size Type: int Default: 1 Min: 1 Max: 65535

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Tcl API Object and Perform Function Reference

NatRatio	Sets the NAT Ratio Type: int Default: 1000 Min: 1 Max: 65535
NatStIpAddr	Sets the NAT Starting IP Address Type: String Default: ""
NatStPort	Sets the NAT Starting Port Type: int Default: 1000 Min: 1 Max: 65535

Children:

Child	Description
QueryInfo	Event Argument sent in the eventData. Type: UserCreated Multiplicity: 1-100

QueryInfo

The DNS protocol specific Query information. In the GUI, the QueryInfo objects are represented as a row in the Query Settings table.

Writeable Attributes:

Writeable Attribute	Description																										
QueryInfoClass	<p>Sets the Query class</p> <p>Type: Custom String Default: 0x01 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0x01</td> <td>IN</td> </tr> <tr> <td>0x03</td> <td>CH</td> </tr> <tr> <td>0x04</td> <td>HS.</td> </tr> </tbody> </table>	Value	Description	0x01	IN	0x03	CH	0x04	HS.																		
Value	Description																										
0x01	IN																										
0x03	CH																										
0x04	HS.																										
QueryInfoType	<p>Sets the Query type</p> <p>Type: Custom String Default: 0x01 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0x01</td> <td>A</td> </tr> <tr> <td>0x02</td> <td>NS</td> </tr> <tr> <td>0x05</td> <td>CNAME</td> </tr> <tr> <td>0x06</td> <td>SOA</td> </tr> <tr> <td>0x0c</td> <td>PTR</td> </tr> <tr> <td>0x0d</td> <td>HINFO</td> </tr> <tr> <td>0x0e</td> <td>MINFO</td> </tr> <tr> <td>0x0f</td> <td>MX</td> </tr> <tr> <td>0x10</td> <td>TXT</td> </tr> <tr> <td>0x1c</td> <td>AAAA</td> </tr> <tr> <td>0x23</td> <td>NAPTR</td> </tr> <tr> <td>0x21</td> <td>SRV</td> </tr> </tbody> </table>	Value	Description	0x01	A	0x02	NS	0x05	CNAME	0x06	SOA	0x0c	PTR	0x0d	HINFO	0x0e	MINFO	0x0f	MX	0x10	TXT	0x1c	AAAA	0x23	NAPTR	0x21	SRV
Value	Description																										
0x01	A																										
0x02	NS																										
0x05	CNAME																										
0x06	SOA																										
0x0c	PTR																										
0x0d	HINFO																										
0x0e	MINFO																										
0x0f	MX																										
0x10	TXT																										
0x1c	AAAA																										
0x23	NAPTR																										
0x21	SRV																										
QueryInfoName	<p>Sets the Query name</p> <p>Type: String Default: ""</p>																										

Read-only Attributes:

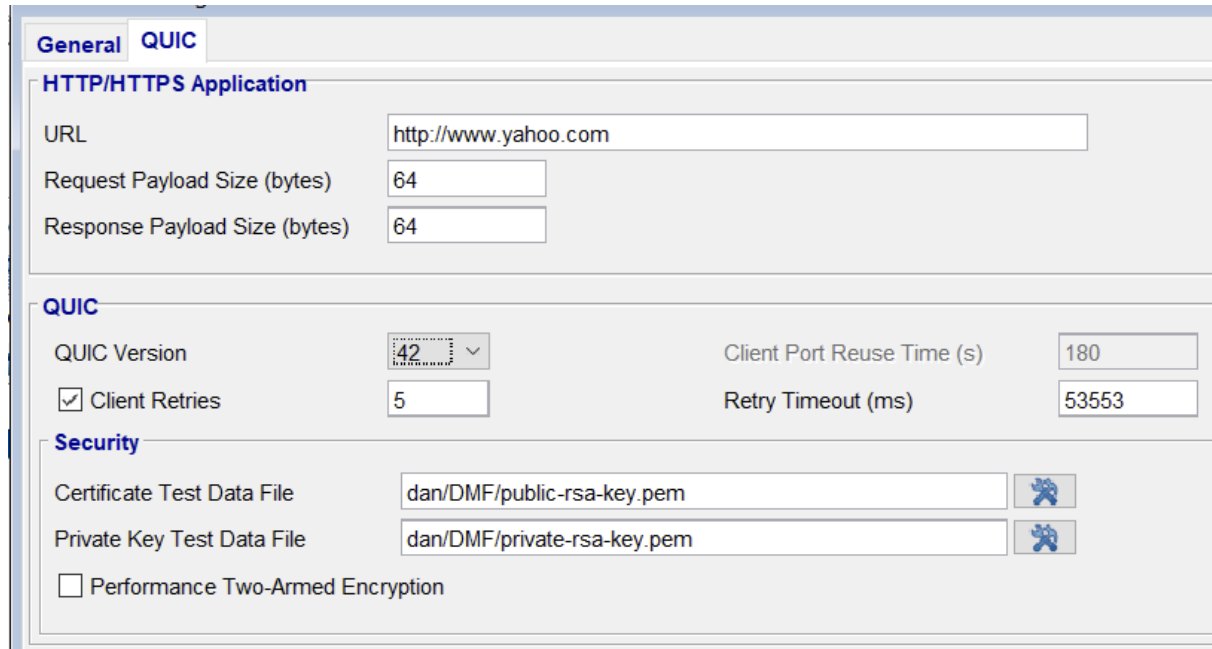
None

Children:

None

QuicInfo

The fb_quic protocol specific information. In the GUI, the QuicInfo objects are represented as a tab in the DMF Editor.



Writeable Attributes:

Writeable Attribute	Description
ClientRetries	Sets the number of client side retries. Type: int Default: 0 Min: 0 Max: 10
ClientRetryTimeout	Sets the timeout for each retry. Type: int Default: 500 Min: 1 Max: 65535
PacketSize	Sets the size of each QUIC packet. Type: int Default: 1350 Min: 1200 Max: 1350
PrivateKeyTdfLibrary	Sets the library ID for the TAS-installed TDF file to use for the Private Key. Type: int Default: -1
PrivateKeyTdfName	Sets the name of the TAS-installed TDF file to use for the Private Key. Type: String Default: ""
PsuedoEncrypt	Sets whether to use Psuedo Encryption (Performance Two-Armed Encryption). Only available when QUIC version is less than 50. Type: Boolean Default: False

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Tcl API Object and Perform Function Reference

RequestSize	Sets the size in bytes for each request message. Type: int Default: 64 Min: 1 Max: 65535						
ResponseSize	Sets the size in bytes for each response message. Type: int Default: 64 Min: 1 Max: 100000000						
StreamsPerConn	Sets the number of streams on each connection. Applies to version 50 only. Type: int Default: 1 Min: 1 Max: 10						
Url	Sets the URL to request. Type: String, valid URL. Default: ""						
Version	Sets the QUIC version to support. Type: Custom String Default: 50 Possible Values: <table border="1"><thead><tr><th>Value</th></tr></thead><tbody><tr><td>60</td></tr><tr><td>50</td></tr><tr><td>43</td></tr><tr><td>42</td></tr><tr><td>39</td></tr></tbody></table>	Value	60	50	43	42	39
Value							
60							
50							
43							
42							
39							
X509TdfLibrary	Sets the library ID for the TAS-installed TDF file to use for the X509 Certificate. Type: int Default: -1						
X509TdfName	Sets the name of the TAS-installed TDF file to use for the X509 Certificate. Type: String Default: ""						
QueryInfoName	Sets the Query name Type: String Default: ""						

Read-only Attributes:

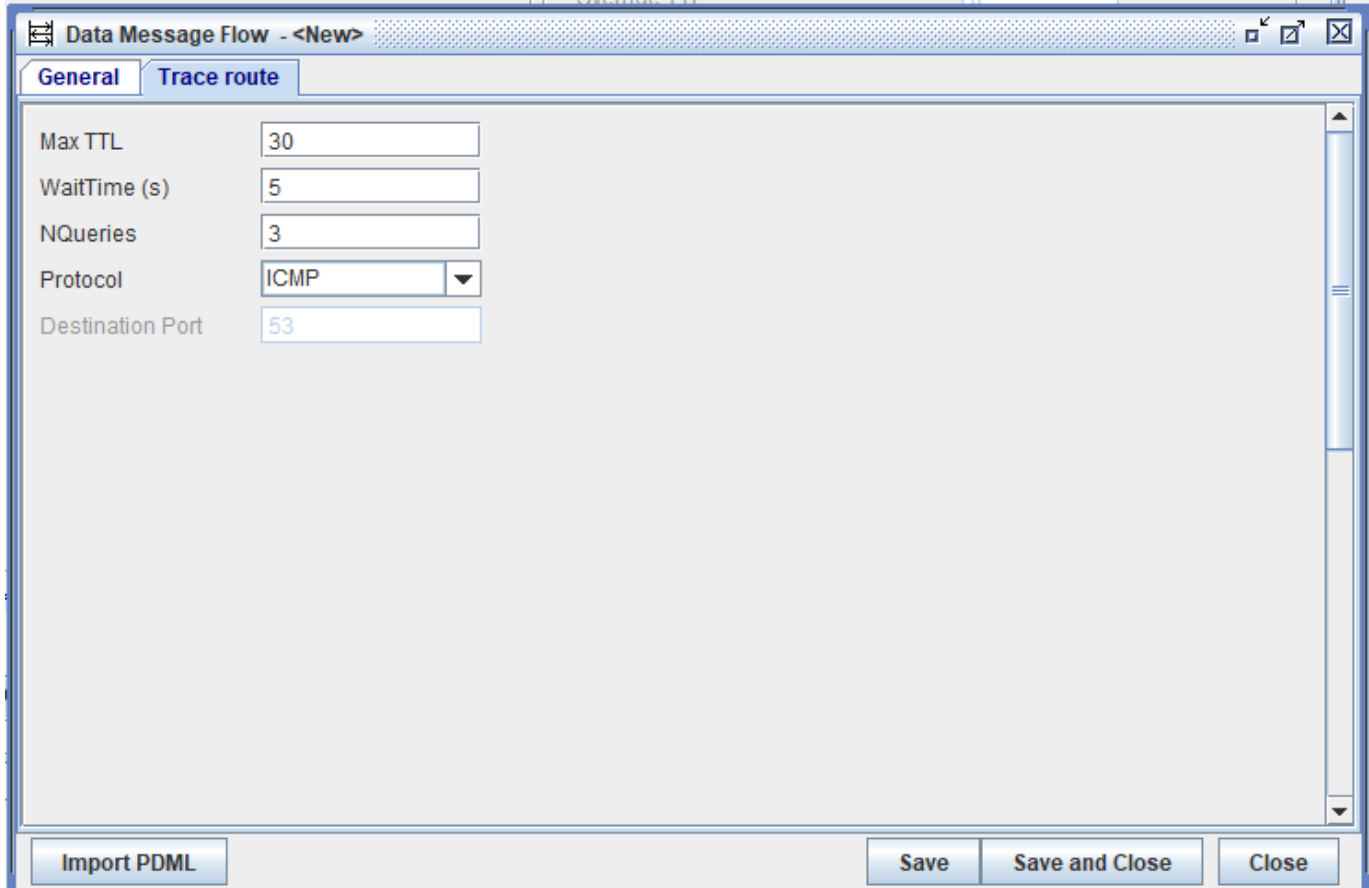
None

Children:

None

Traceroute Info

The tracert protocol specific information. In the GUI, the Traceroute objects are represented as Trace route Tab on the DMF Editor.



Writeable Attributes:

Writeable Attribute	Description
TracerouteTTL	Set the TTL for Traceroute Protocol Type: int Default: 30 Min: 1 Max: 255
TracerouteWaitTime	Sets the Wait Time (s) for Traceroute Protocol . Type: int Default: 5 Min: 1 Max: 10
TracerouteNQueries	Set N Query for Traceroute Type: int Default: 3 Min: 1 Max: 10

Spirent Landslide

Tcl API Object and Perform Function Reference

TracerouteProtocol	<p>Set the Protocol for Traceroute.</p> <p>Type: String Default: ICMP Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ICMP</td> <td>ICMP Protocol</td> </tr> <tr> <td>UDP</td> <td>UDP Protocol</td> </tr> </tbody> </table>	Value	Description	ICMP	ICMP Protocol	UDP	UDP Protocol
Value	Description						
ICMP	ICMP Protocol						
UDP	UDP Protocol						
TracerouteDestPort	<p>Sets the Destination Port of Traceroute.</p> <p>Type: int Default: 53 Min: 1 Max:65535</p>						

Read-only Attributes:

None

Children:

None

AppAttributesInfo

In the GUI, AppAttributesInfo objects are represented as a tab in the DMF Editor. This information is only used for specific test case features as documented in Online Help. Data Protocols that will show Application Attributes are tcp, sctp, ping, raw, udp, cust, http, https, http2, ftp, tftp, smtp, pop3, imap, rtcp, rtp, sip, mms, rtsp, wsp, wv, and mqtt.

Writeable Attributes:

Writeable Attribute	Description
OsIdEnabled	<p>Enables provisioning of OS ID</p> <p>Type: Boolean Default: false</p>
OsId	<p>Operating System ID, 16 byte value. Only applicable if OsIdEnabled is true</p> <p>Type: String, exactly 32 hex characters</p>

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Tcl API Object and Perform Function Reference

OsAppld	Operating System Application ID Type: String Default: blank, will allow up to 128 characters
Fqdn	Fully Qualified Domain Name Type: String Default: blank, will allow up to 128 characters
Dnn	Data Network Name Type: String Default: blank, will allow up to 128 characters
ConCapImsEnabled	Connection Capability - IMS Type: Boolean Default: false
ConCapMmsEnabled	Connection Capability - MMS Type: Boolean Default: false
ConCapSuplEnabled	Connection Capability - SUPL Type: Boolean Default: false
ConCapInetEnabled	Connection Capability - Internet Type: Boolean Default: false

Read-only Attributes:

None

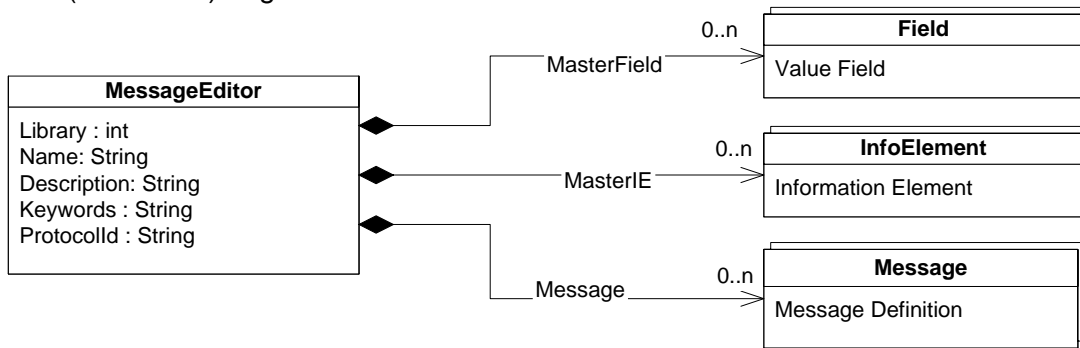
Children:

None

Message Editor

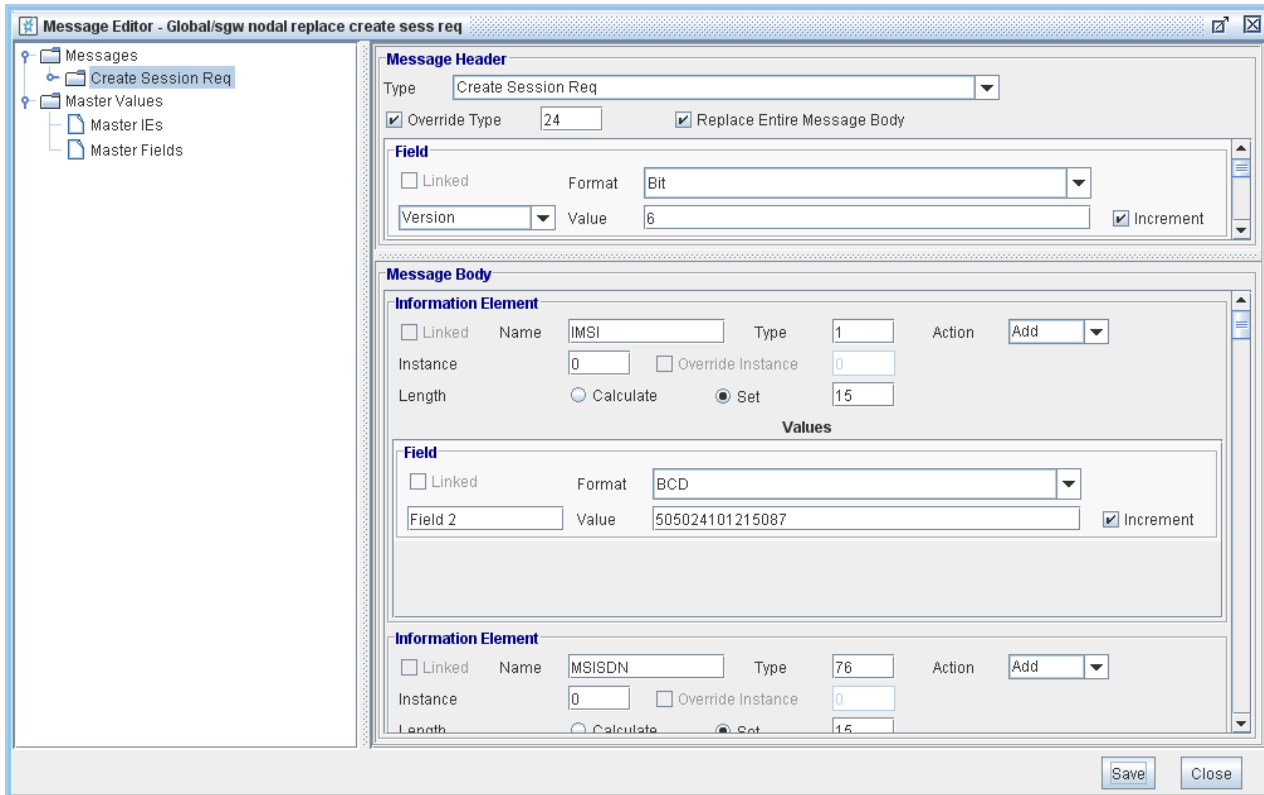
Overview

The MessageEditor object (ME) encapsulates the message definition and definition elements that can be applied to a control plane protocol message in a test case. As with many other objects, the best way to learn how to configure a MessageEditor in the Tcl API is to create one in the GUI and use the Save-As-Tcl function (Shift-Alt-A) to generate a Tcl file.



MessageEditor

In the GUI, a MessageEditor object is represented with the Message Editor screens:



Spirent Landslide

Tcl API Object and Perform Function Reference

New MEs can be created in the Landslide Tcl API using the `ls::create MessageEditor` command. This command will return a handle to a new ME object. MEs can be retrieved from the TAS using the `ls::retrieve MessageEditor` command. MEs are not required to contain any children; however, an ME without at least one Message will have no effect on the test case. MasterField, MasterIE, and Message objects can be added with the `ls::create TYPE –under ME_HANDLE` command or with the `ls::config ME_HANDLE –children CHILD_HANDLE` command.

Writeable Attributes:

Writeable Attribute	Description																												
CounterMode	<p>For GTPv2 Protocol Message Editors only; the way in which the Instance Counter is counted.</p> <p>Type: Custom String (int) Default: 0 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Instances are counted for each UE-Default-Bearer.</td> </tr> <tr> <td>1</td> <td>Instances are counted for each UE.</td> </tr> </tbody> </table>	Value	Description	0	Instances are counted for each UE-Default-Bearer.	1	Instances are counted for each UE.																						
Value	Description																												
0	Instances are counted for each UE-Default-Bearer.																												
1	Instances are counted for each UE.																												
Description	<p>A description of the ME.</p> <p>Type: String, up to 1024 ASCII characters. Default: ""</p>																												
Keywords	<p>Keywords that identify the ME.</p> <p>Type: Custom String: words separated by spaces, words contain up to 32 letters and numbers. Example: keyword1 KEYWORD2</p>																												
Library	<p>The ID of the library the ME is, or will be, stored in on the TAS.</p> <p>Type: Int Default: 0</p>																												
Name	<p>The name of the ME.</p> <p>Type: String (Valid Filename characters/format up to 64 characters) Default: ""</p>																												
ProtocolId	<p>The protocol for which this ME defines messages.</p> <p>Type: Custom String Default: "" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>GTP0</td> <td>GTPv0 protocol</td> </tr> <tr> <td>GTP1</td> <td>GTPv1 protocol</td> </tr> <tr> <td>GTP2</td> <td>GTPv2 protocol</td> </tr> <tr> <td>S1ap</td> <td>S1-AP protocol</td> </tr> <tr> <td>CapWap</td> <td>CAPWAP protocol</td> </tr> <tr> <td>PMIPv6</td> <td>PMIPv6 protocol</td> </tr> <tr> <td>PFCP</td> <td>Sxa, Sxb protocols</td> </tr> <tr> <td>5G SM</td> <td>5G SM protocol</td> </tr> <tr> <td>5G MM</td> <td>5G MM protocol</td> </tr> <tr> <td>NGAP</td> <td>NGAP protocol</td> </tr> <tr> <td>5G PFCP</td> <td>N4 Protocols</td> </tr> <tr> <td>S1apMme</td> <td>S1-AP protocol on MME Node</td> </tr> <tr> <td>NasMme</td> <td>NAS protocol on MME Node</td> </tr> </tbody> </table>	Value	Description	GTP0	GTPv0 protocol	GTP1	GTPv1 protocol	GTP2	GTPv2 protocol	S1ap	S1-AP protocol	CapWap	CAPWAP protocol	PMIPv6	PMIPv6 protocol	PFCP	Sxa, Sxb protocols	5G SM	5G SM protocol	5G MM	5G MM protocol	NGAP	NGAP protocol	5G PFCP	N4 Protocols	S1apMme	S1-AP protocol on MME Node	NasMme	NAS protocol on MME Node
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NasMme	NAS protocol on MME Node																												

Read-only Attributes:

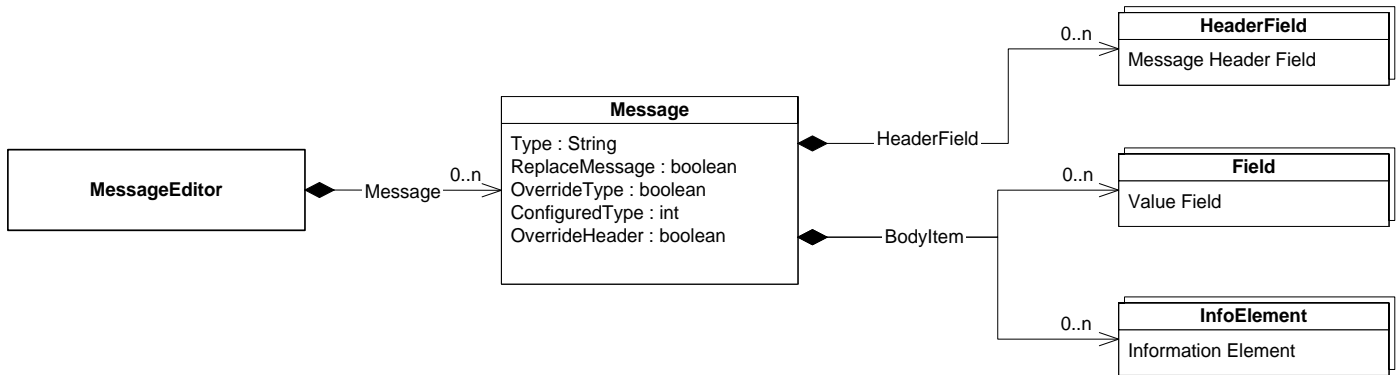
Read-only Attribute	Description
LastSavedDate	The date the ME was last saved. Type: Formatted String Example: Wed Dec 31 19:00:00 EST 1969

Children:

Child	Description
Message	A Message object that represents a defined message. Type: UserCreated Multiplicity: 0-n
MasterIE	An InfoElement object that can be used as a Message BodyItem or as a ContentItem in another Master IE or InfoElement (limited by protocol rules). Type: UserCreated Multiplicity: 0-n
MasterField	A Field object that can be used as a ContentItem in a MasterIE, as InfoElements within Messages, or as a Message BodyItem (limited by protocol rules). Type: UserCreated Multiplicity: 0-n

Message

The default composition of control plane messages is based on the parameters configured in the test case. The Message object represents the definition or partial definition of a single control plane message. In its most common usage, the Message object contains only the elements that are used to alter the default message. A message may also be fully defined, in which case it entirely replaces the type and/or content of the message that would normally be sent by the test case.



A message definition can contain HeaderField objects that are used to override the values of certain message header fields and BodyItems that alter or define the message body. HeaderFields and BodyItems can be added to a message with the `ls::create TYPE -under MSG_HANDLE` command or with the `ls::config MSG_HANDLE -children CHILD_HANDLE` command.

Writeable Attributes:

Writeable Attribute	Description																												
Type	<p>Identifies the default control plane message that will be overridden or replaced. The type of the default message as defined by the applicable standards document.</p> <p>Type: Custom String Default: "" Possible Values for GTPv2:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>1</td><td>Echo Req</td></tr> <tr><td>2</td><td>Echo Rsp</td></tr> <tr><td>32</td><td>Create Session Req</td></tr> <tr><td>33</td><td>Create Session Rsp</td></tr> <tr><td>34</td><td>Update User Plane Req (2008-12)/ Modify Bearer Req (2009-03)</td></tr> <tr><td>35</td><td>Update User Plane Rsp (2008-12)/ Modify Bearer Rsp (2009-03)</td></tr> <tr><td>36</td><td>Modify Bearer Req (2008-12)/ Delete Session Req (2009-03)</td></tr> <tr><td>37</td><td>Modify Bearer Rsp (2008-12)/ Delete Session Rsp (2009-03)</td></tr> <tr><td>38</td><td>Delete Session Req (2008-12)</td></tr> <tr><td>39</td><td>Delete Session Rsp (2008-12)</td></tr> <tr><td>64</td><td>Modify Bearer Cmd</td></tr> <tr><td>66</td><td>Delete Bearer Cmd</td></tr> <tr><td>68</td><td>Bearer Resource Cmd</td></tr> </tbody> </table>	Value	Description	1	Echo Req	2	Echo Rsp	32	Create Session Req	33	Create Session Rsp	34	Update User Plane Req (2008-12)/ Modify Bearer Req (2009-03)	35	Update User Plane Rsp (2008-12)/ Modify Bearer Rsp (2009-03)	36	Modify Bearer Req (2008-12)/ Delete Session Req (2009-03)	37	Modify Bearer Rsp (2008-12)/ Delete Session Rsp (2009-03)	38	Delete Session Req (2008-12)	39	Delete Session Rsp (2008-12)	64	Modify Bearer Cmd	66	Delete Bearer Cmd	68	Bearer Resource Cmd
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68	Bearer Resource Cmd																												

95	Create Bearer Req
96	Create Bearer Rsp
97	Update Bearer Req
98	Update Bearer Rsp
99	Delete Bearer Req
100	Delete Bearer Rsp
170	Release Access Bearers Req (2009-03)
171	Release Access Bearers Rsp (2009-03)
176	Downlink Data Notif
177	Downlink Data Notif Ack
Possible Values for GTPv1:	
Value	Description
1	Echo Req
2	Echo Rsp
16	Create PDP Context Req
17	Create PDP Context Rsp
18	Update PDP Context Req
19	Update PDP Context Rsp
20	Delete PDP Context Req
21	Delete PDP Context Rsp
Possible Values for GTPv0:	
Value	Description
1	Echo Req
2	Echo Rsp
16	Create PDP Context Req
17	Create PDP Context Rsp
18	Update PDP Context Req
19	Update PDP Context Rsp
20	Delete PDP Context Req
21	Delete PDP Context Rsp
22	Initiate PDP Context Act Req
23	Initiate PDP Context Act Rsp
Possible Values for S1-AP:	
Value	Description
5	E-RAB Setup Response
6	E-RAB Modify Response
7	E-RAB Release Response
8	E-RAB Release Indication
21	UE Context Modification Response
18	UE Context Release Request
23	UE Context Release Complete
17	S1 Setup Request
12	Initial UE Message
9	Initial Context Setup Response
13	Uplink NAS Transport
0	Handover Required
1	Handover Request Acknowledgement
2	Handover Notify
3	Path Switch Message
20	Uplink S1 CDMA 2000 Tunneling

Possible Values for CAP-WAP:	
Value	Description
1	Discovery Request
3	Join Request
5	Configuration Status Request
8	Configuration Update Response
9	WTP Event Request
11	Change State Event Request
13	Echo Request
26	Station Configuration Response
3398914	802.11 WLAN Configuration Response
Possible Values for PMIPv6:	
Value	Description
0	All procedure
1	Initial Attach
2	Refresh
3	Handover
4	Detach
Possible Values for PFCP:	
Value	Description
1	Heartbeat Request
2	Heartbeat Response
5	Association Setup Request
6	Association Setup Response
7	Association Update Request
8	Association Update Response
9	Association Release Request
10	Association Release Response
11	Version Not Supported Response
50	Session Establishment Request
51	Session Establishment Response
52	Session Modification Request
53	Session Modification Response
54	Session Deletion Request
55	Session Deletion Response
56	Session Report Request
57	Session Report Response
Possible Values for 5G SM:	
Value	Description
193	PDU Session Establishment Request
194	PDU Session Establishment Accept
201	PDU Session Modification Request
202	PDU Session Modification Reject
203	PDU Session Modification Command
204	PDU Session Modification Complete
205	PDU Session Modification Command Reject
209	PDU Session Release Request
211	PDU Session Release Command
212	PDU Session Release Complete

Possible Values for 5G MM:

Value	Description
65	Registration Request
66	Registration Accept
67	Registration Complete
69	Deregistration Request (UE originating)
70	Deregistration Accept (UE originating)
71	Deregistration Request (UE terminated)
72	Deregistration Accept (UE terminated)
76	Service Request
78	Service Accept
86	Authentication Request
87	Authentication Response
88	Authentication Reject
89	Authentication Failure
91	Identity Request
92	Identity Response
93	Security Mode Command
94	Security Mode Complete
95	Security Mode Reject
103	UL NAS Transport
104	DL NAS Transport

Possible Values for NGAP:

Value	Description
1	AMFConfigurationUpdate
2	AMFConfigurationUpdateAcknowledge
3	AMFConfigurationUpdateFailure
1025	DownlinkNASTransport
3585	InitialContextSetupRequest
3586	InitialContextSetupResponse
3587	InitialContextSetupFailure
3841	InitialUEMessage
5377	NGSetupRequest
5378	NGSetupResponse
5379	NGSetupFailure
5633	Paging
6145	PDUSessionResourceModifyRequest
6146	PDUSessionResourceModifyResponse
6913	PDUSessionResourceSetupRequest
6914	PDUSessionResourceSetupResponse
8449	RANConfigurationUpdate
8450	RANConfigurationUpdateAcknowledge
8451	RANConfigurationUpdateFailure
9473	UECapabilityInfoIndication
9985	UEContextReleaseCommand
9986	UEContextReleaseComplete
10241	UEContextReleaseRequest
10497	UERadioCapabilityCheckRequest
10498	UERadioCapabilityCheckRequest
11009	UplinkNASTransport

	<p>Possible Values for 5G PFCP:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>1</td><td>Heartbeat Request</td></tr> <tr><td>2</td><td>Heartbeat Response</td></tr> <tr><td>5</td><td>Association Setup Request</td></tr> <tr><td>6</td><td>Association Setup Response</td></tr> <tr><td>7</td><td>Association Update Request</td></tr> <tr><td>8</td><td>Association Update Response</td></tr> <tr><td>9</td><td>Association Release Request</td></tr> <tr><td>10</td><td>Association Release Response</td></tr> <tr><td>11</td><td>Version Not Supported Response</td></tr> <tr><td>50</td><td>Session Establishment Request</td></tr> <tr><td>51</td><td>Session Establishment Response</td></tr> <tr><td>52</td><td>Session Modification Request</td></tr> <tr><td>53</td><td>Session Modification Response</td></tr> <tr><td>54</td><td>Session Deletion Request</td></tr> <tr><td>55</td><td>Session Deletion Response</td></tr> <tr><td>56</td><td>Session Report Request</td></tr> <tr><td>57</td><td>Session Report Response</td></tr> </tbody> </table>	Value	Description	1	Heartbeat Request	2	Heartbeat Response	5	Association Setup Request	6	Association Setup Response	7	Association Update Request	8	Association Update Response	9	Association Release Request	10	Association Release Response	11	Version Not Supported Response	50	Session Establishment Request	51	Session Establishment Response	52	Session Modification Request	53	Session Modification Response	54	Session Deletion Request	55	Session Deletion Response	56	Session Report Request	57	Session Report Response
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ReplaceMessage	<p>Whether the entire default message's body should be replaced by the defined BodyItems.</p> <p>Type: Boolean Example: False</p>																																				
OverrideType	<p>Whether the default message's type is overridden. If ConfiguredType is set, OverrideType will be set automatically.</p> <p>Type: Boolean Default: False</p>																																				
ConfiguredType	<p>The value that will override the default message's type. Values considered invalid for the protocol are acceptable.</p> <p>Type: Int Default: 0 Min: 0 Max: 255 (for GTPv2 and S1-AP), 4294967295 (for CAPWAP)</p>																																				
Instance	<p>Identifies the instance, or occurrence, of the default message to be modified. The instance counter is incremented whenever the message is generated for the subject object. For example, 5 would identify the 5th instance of a message regarding a particular node or bearer.</p> <p>Type: Int Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>0</td><td>All instances</td></tr> <tr><td>1-255</td><td>The <i>n</i>th instance</td></tr> </tbody> </table>	Value	Description	0	All instances	1-255	The <i>n</i> th instance																														
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MsgProcedureType	<p>Only valid for PMIPv6 Message Editors. Identifies the message procedure that the message applies to.</p> <p>Type: Int Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>All Procedures</td> </tr> <tr> <td>1</td> <td>Initial Attach</td> </tr> <tr> <td>2</td> <td>Refresh</td> </tr> <tr> <td>3</td> <td>Handover</td> </tr> <tr> <td>4</td> <td>Detach</td> </tr> </tbody> </table>	Value	Description	0	All Procedures	1	Initial Attach	2	Refresh	3	Handover	4	Detach
Value	Description												
0	All Procedures												
1	Initial Attach												
2	Refresh												
3	Handover												
4	Detach												
OverrideHeader	<p>Whether default message's header field values are overridden. If a HeaderField child is created or configured, OverrideHeader will be set automatically.</p> <p>Type: Boolean Default: False</p>												
PduIndex	<p>Only valid for 5G SM, 5G MM, and NGAP message editor types.</p> <p>Type: Int Default: 0 Min: 0 Max: 11</p>												
StackSwap	<p>Only valid for GTPv2. It will be visible in all GTPv2 message editors, but it is only supported by SGW Nodal. When in a Dual Stack test configuration, if this checkbox is selected, it will trigger the GTP Control Plane to swap between the active IPv4/v6 node to the inactive IPv6/v4 node.</p> <p>Type: Boolean Default: False</p>												

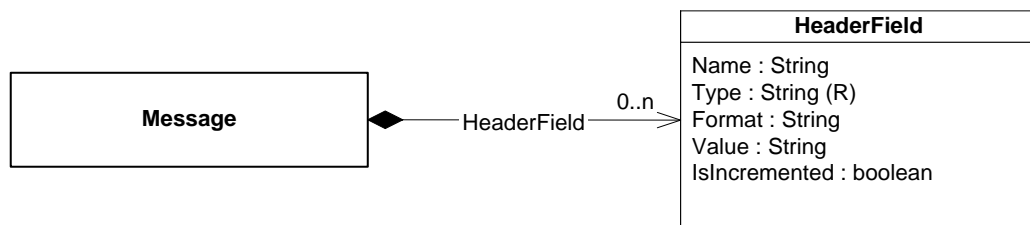
Read-only Attributes:

None

Children:

Child	Description
HeaderField	<p>A HeaderField that will be applied to the default message.</p> <p>Type: UserCreated Multiplicity: 0-n</p>
BodyItem InfoElement	<p>An InfoElement object contained in the message body (limited by protocol rules).</p> <p>Type: UserCreated Multiplicity: 0-n</p>
BodyItem Field	<p>A Field object contained in the message body (limited by protocol rules).</p> <p>Type: UserCreated Multiplicity: 0-n</p>

HeaderField



This object alters the value of the corresponding field in the default message’s header.

Writeable Attributes:

Writeable Attribute	Description																																																						
Name	<p>Identifies which default header field is to be overridden. Values may vary by protocol.</p> <p>Type: Custom String Default: Version</p> <p>Possible Values for CAP-WAP:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Preamble Version</td> <td>CAPWAP version</td> </tr> <tr> <td>Preamble Type</td> <td>Payload Type</td> </tr> <tr> <td>HLEN</td> <td>Length of CAPWAP Transport Header</td> </tr> <tr> <td>RID</td> <td>Radio ID Number of the Packet</td> </tr> <tr> <td>WBID</td> <td>Wireless Binding Identifier associated with the radio</td> </tr> <tr> <td>T Flag</td> <td>Type Flag</td> </tr> <tr> <td>F Flag</td> <td>Fragment Flag</td> </tr> <tr> <td>L Flag</td> <td>Last Fragment Flag</td> </tr> <tr> <td>W Flag</td> <td>Wireless flag indicating the presence of the optional Wireless Specific Information field in the Header</td> </tr> <tr> <td>M Flag</td> <td>Radio MAC flag indicating the presence of the optional Radio MAC Address field in the Header</td> </tr> <tr> <td>K Flag</td> <td>Keep-Alive flag indicating that the packet is a Data Channel Keep-Alive packet</td> </tr> <tr> <td>Flags</td> <td>Reserved</td> </tr> <tr> <td>Fragment ID</td> <td>Fragment ID</td> </tr> <tr> <td>Fragment Offset</td> <td>Fragment Offset</td> </tr> <tr> <td>Radio MAC Len</td> <td>Length of the MAC Address field</td> </tr> <tr> <td>Radio MAC</td> <td>MAC Address of the radio receiving the packet</td> </tr> <tr> <td>Wireless Info Len</td> <td>Length of the Wireless Specific Information</td> </tr> <tr> <td>Wireless Info</td> <td>Wireless Specific Information</td> </tr> <tr> <td>Cntrl Msg Seq</td> <td>Identifier used to match Request and Response packets</td> </tr> <tr> <td>Cntrl Msg Len</td> <td>Indicates the number of bytes following the Sequence Number field</td> </tr> <tr> <td>Cntrl Msg Flags</td> <td>Flags</td> </tr> </tbody> </table> <p>Possible Values for GTPv2:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Version</td> <td>Protocol version</td> </tr> <tr> <td>Piggyback Flag</td> <td>P flag</td> </tr> <tr> <td>TEID Flag</td> <td>T flag</td> </tr> <tr> <td>TEID</td> <td>TEID</td> </tr> </tbody> </table>	Value	Description	Preamble Version	CAPWAP version	Preamble Type	Payload Type	HLEN	Length of CAPWAP Transport Header	RID	Radio ID Number of the Packet	WBID	Wireless Binding Identifier associated with the radio	T Flag	Type Flag	F Flag	Fragment Flag	L Flag	Last Fragment Flag	W Flag	Wireless flag indicating the presence of the optional Wireless Specific Information field in the Header	M Flag	Radio MAC flag indicating the presence of the optional Radio MAC Address field in the Header	K Flag	Keep-Alive flag indicating that the packet is a Data Channel Keep-Alive packet	Flags	Reserved	Fragment ID	Fragment ID	Fragment Offset	Fragment Offset	Radio MAC Len	Length of the MAC Address field	Radio MAC	MAC Address of the radio receiving the packet	Wireless Info Len	Length of the Wireless Specific Information	Wireless Info	Wireless Specific Information	Cntrl Msg Seq	Identifier used to match Request and Response packets	Cntrl Msg Len	Indicates the number of bytes following the Sequence Number field	Cntrl Msg Flags	Flags	Value	Description	Version	Protocol version	Piggyback Flag	P flag	TEID Flag	T flag	TEID	TEID
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RID	Radio ID Number of the Packet																																																						
WBID	Wireless Binding Identifier associated with the radio																																																						
T Flag	Type Flag																																																						
F Flag	Fragment Flag																																																						
L Flag	Last Fragment Flag																																																						
W Flag	Wireless flag indicating the presence of the optional Wireless Specific Information field in the Header																																																						
M Flag	Radio MAC flag indicating the presence of the optional Radio MAC Address field in the Header																																																						
K Flag	Keep-Alive flag indicating that the packet is a Data Channel Keep-Alive packet																																																						
Flags	Reserved																																																						
Fragment ID	Fragment ID																																																						
Fragment Offset	Fragment Offset																																																						
Radio MAC Len	Length of the MAC Address field																																																						
Radio MAC	MAC Address of the radio receiving the packet																																																						
Wireless Info Len	Length of the Wireless Specific Information																																																						
Wireless Info	Wireless Specific Information																																																						
Cntrl Msg Seq	Identifier used to match Request and Response packets																																																						
Cntrl Msg Len	Indicates the number of bytes following the Sequence Number field																																																						
Cntrl Msg Flags	Flags																																																						
Value	Description																																																						
Version	Protocol version																																																						
Piggyback Flag	P flag																																																						
TEID Flag	T flag																																																						
TEID	TEID																																																						

	<p>Seq Number Sequence number</p> <p>Possible Values for PFCP and 5G PFCP:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Version</td> </tr> <tr> <td>1</td> <td>MP Flag</td> </tr> <tr> <td>2</td> <td>SEID Flag</td> </tr> <tr> <td>3</td> <td>SEID</td> </tr> <tr> <td>4</td> <td>Seq Number</td> </tr> </tbody> </table>	Value	Description	0	Version	1	MP Flag	2	SEID Flag	3	SEID	4	Seq Number
Value	Description												
0	Version												
1	MP Flag												
2	SEID Flag												
3	SEID												
4	Seq Number												
Format	<p>The type of Value provisioned. Format dictates how the value can be incremented and determines the field size (except for the ASCII String and BCD formats).</p> <p>Type: String Default: 11 Possible Values: (see Field)</p>												
Value	<p>The header field value.</p> <p>Type: String Default: ""</p>												
IsIncremented	<p>Whether the Value will be incremented.</p> <p>Type: Boolean Default: False</p>												

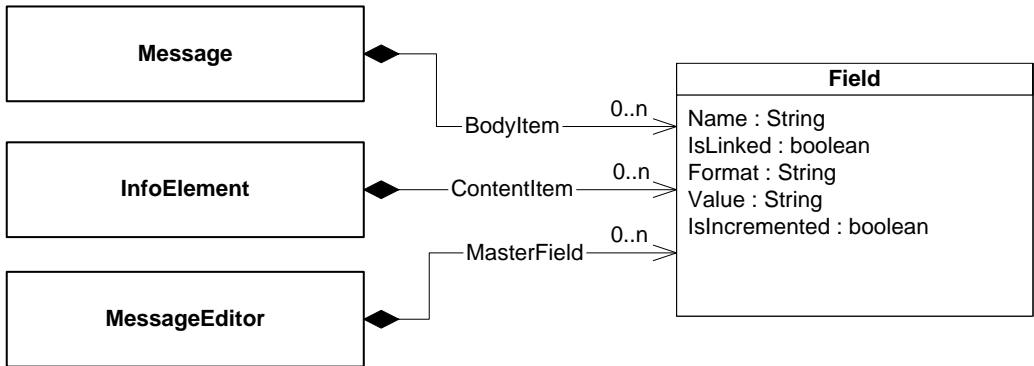
Read-only Attributes:

Read-only Attribute	Description
Type	The type corresponding to the Name.

Children:

None

Field



Field objects provision the value portion of a Message when used as BodyItems (if the protocol allows fields in a message body) or of an InfoElement when used as ContentItems. A Field created under the ME itself becomes a MasterField. Replicas of MasterFields can be used as BodyItems or ContentItems and will reflect any change made to their respective MasterFields.

Writeable Attributes:

Writeable Attribute	Description																				
Name	Identifies MasterFields, Fields, and MasterField replicas. MasterField names must be unique within an ME and replica names must match that of the MasterField. Type: String Default: ""																				
IsLinked	Identifies a replica Field. When this flag is set, the only writeable attributes are Name and IsLinked. Type: Boolean Default: False																				
Format	The type of Value provisioned. Format dictates how the value can be incremented and determines the field size (except for the ASCII String and BCD formats). Type: Custom String Default: 11 Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>11</td> <td>UINT8</td> </tr> <tr> <td>7</td> <td>UINT16</td> </tr> <tr> <td>0</td> <td>UINT32</td> </tr> <tr> <td>1</td> <td>ASCII String</td> </tr> <tr> <td>2</td> <td>Hex String</td> </tr> <tr> <td>4</td> <td>IPv4 Address</td> </tr> <tr> <td>5</td> <td>IPv6 Address</td> </tr> <tr> <td>10</td> <td>BCD</td> </tr> <tr> <td>12</td> <td>Bit</td> </tr> </tbody> </table>	Value	Description	11	UINT8	7	UINT16	0	UINT32	1	ASCII String	2	Hex String	4	IPv4 Address	5	IPv6 Address	10	BCD	12	Bit
Value	Description																				
11	UINT8																				
7	UINT16																				
0	UINT32																				
1	ASCII String																				
2	Hex String																				
4	IPv4 Address																				
5	IPv6 Address																				
10	BCD																				
12	Bit																				

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Value	The Field's value. Type: String Default: ""
IsIncremented	Whether the Value will be incremented. Type: Boolean Default: False

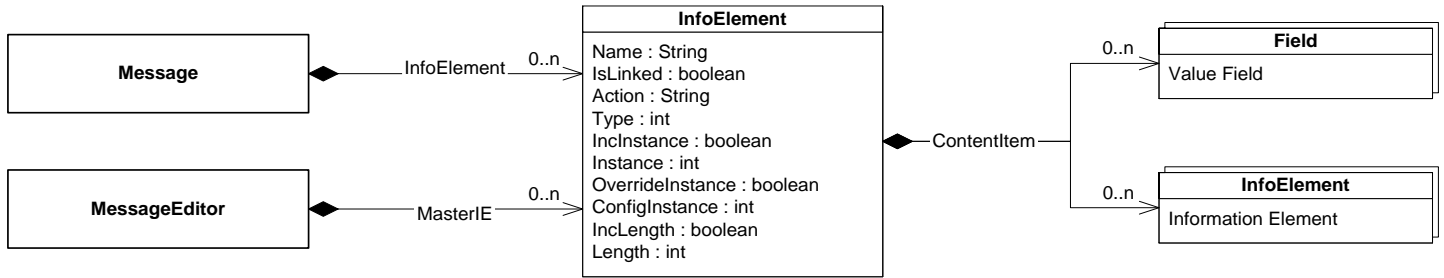
Read-only Attributes:

None

Children:

None

InfoElement



The InfoElement object represents an Information Element that some protocols use to group information in the body of a message or within another Information Element. Fields and nested InfoElements can be added to an InfoElement with the Is::create TYPE –under IE_HANDLE command or with the Is::config IE_HANDLE –children CHILD_HANDLE command.

Writable Attributes:

Writable Attribute	Description																		
Action	The alteration that will be made to the default message with respect to the InfoElement. When it becomes necessary to match an InfoElement to an IE in the default message, the Type and Instance (if the protocol uses Instance) of the InfoElement must match the IE. Type: Custom String Default: Add Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Add</td> <td>The InfoElement is added to the message body.</td> </tr> <tr> <td>Override</td> <td>The matching IE in the message body is replaced with the InfoElement.</td> </tr> <tr> <td>Remove</td> <td>The matching IE is removed from the message body.</td> </tr> </tbody> </table>	Value	Description	Add	The InfoElement is added to the message body.	Override	The matching IE in the message body is replaced with the InfoElement.	Remove	The matching IE is removed from the message body.										
Value	Description																		
Add	The InfoElement is added to the message body.																		
Override	The matching IE in the message body is replaced with the InfoElement.																		
Remove	The matching IE is removed from the message body.																		
Choice	NGAP only. The overriding Instance value. Type: Int Default: 0 Min: 0 Max: 255																		
ConfigInstance	The overriding Instance value. Type: Int Default: 0 Min: 0 Max: 255																		
Format	5G SM/MM Only. The IE Format. Type: Int Default: 6 Min: 1 Max: 8 Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>T</td> </tr> <tr> <td>2</td> <td>V_1/2</td> </tr> <tr> <td>3</td> <td>V</td> </tr> <tr> <td>4</td> <td>TV</td> </tr> <tr> <td>5</td> <td>LV</td> </tr> <tr> <td>6</td> <td>TLV</td> </tr> <tr> <td>7</td> <td>LV-E</td> </tr> <tr> <td>8</td> <td>TLV-E</td> </tr> </tbody> </table>	Value	Description	1	T	2	V_1/2	3	V	4	TV	5	LV	6	TLV	7	LV-E	8	TLV-E
Value	Description																		
1	T																		
2	V_1/2																		
3	V																		
4	TV																		
5	LV																		
6	TLV																		
7	LV-E																		
8	TLV-E																		

InclInstance	Whether Instance is used in the IE header. If Instance is configured, InclInstance will be set automatically. Type: Boolean Default: False						
InclLength	Whether Length is used in the IE header. If Length is configured, InclLength will be set automatically. Type: Boolean Default: False						
Instance	The instance of the InfoElement within a message body. Type: Int Default: 0 Min: 0 Max: 255						
IsLinked	Identifies a replica InfoElement. When this flag is set, the only writeable attributes are Name and IsLinked. Type: Boolean Example: False						
Length	The length, in octets, of the InfoElement. Type: Int Default: -1 Possible Values: <table border="1" data-bbox="592 934 1490 1060"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>The correct length will be calculated.</td> </tr> <tr> <td>0-65535</td> <td>Provisions the Length field in the IE header regardless of the InfoElement's actual length.</td> </tr> </tbody> </table>	Value	Description	-1	The correct length will be calculated.	0-65535	Provisions the Length field in the IE header regardless of the InfoElement's actual length.
Value	Description						
-1	The correct length will be calculated.						
0-65535	Provisions the Length field in the IE header regardless of the InfoElement's actual length.						
Name	Identifies MasterIEs, InfoElements, and MasterIE replicas. MasterIE names must be unique within an ME and replica names must match that of the MasterIE. Type: String Default: ""						
Occurrence	PFCEP and 5G PFCEP only, available when Action is Override. Type: Int Default: 0 Min: 0 Max: 255						
OverrideInstance	Whether the Instance of the default IE is to be overridden. If ConfigInstance is configured, OverrideInstance will be set automatically. Type: Boolean Default: False						
PresenceMandatory	5G MM/SM, and NGAP only. If IE must be present. Type: Boolean Default: False						
Position	5G MM/SM, and NGAP only. The position of the IE. Type: Int Default: 0 Min: 5 (for 5G MM/SM), 0 (for NGAP) Max: 255 (for 5G MM/SM), 65535 (for NGAP)						

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Type	The type of IE as defined by the applicable standards document. Type: Int Default: 0 Min: 0 Max: 255 (for GTPv2 and S1-AP), 2047 (for CAPWAP)
------	---

Read-only Attributes:

None

Children:

Child	Description
ContentItem Field	A Field object contained in the IE contents. Fields must always be positioned before the first nested IE. Type: UserCreated Multiplicity: 0-n
ContentItem InfoElement	If the protocol supports nested IEs, the contents of an InfoElement can contain other InfoElements. Up to one level of nesting is allowed. Type: UserCreated Multiplicity: 0-n

Test Server

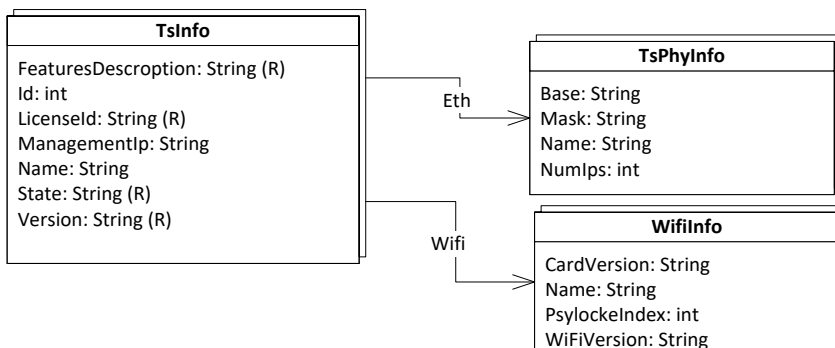
Overview

In most cases, test servers (TSs) are identified by id. You can determine test server id from a name using `ls::query TsId`, and you can determine test server name from an id using `ls::query TsName`. To actually determine all the test server information visible on the *Test Server Administration* window in the GUI, you need to retrieve a `TsInfo` object using `ls::retrieve TsInfo`. Here is an example of the way to determine test server Ethernet port information based on a TS id:

```
% ls::query TsName 1
Testserver1
% set ts [ls::retrieve TsInfo -id 1]
java0xf
% set phys [ls::get $ts -children-Eth]
{Eth0 java0x15} {Eth1 java0x16}
% ls::get [lindex [lindex $phys 1] 1]
{Name lo} {Base 199.248.0.1} {Mask /25} {NumIps 100}
% ls::get [lindex [lindex $phys 0] 1]
{Name eth1} {Base 10.2.2.57} {Mask 255.255.255.0} {NumIps 10}
%
```

Note that with `{ Eth0 java0x15 }`, `Eth0` is not the name, it just indicates the first `Eth` object in the list; the `Eth0` object actually contains the “lo” Ethernet port.

To administer test servers, you use the `ls::perform` functions, `AddTs`, `ModifyTs`, and `DeleteTs`. As from *Test Server Administration* window, you can only modify the management ip.



This is an example of the way you could add, then modify, and then delete, a test server.

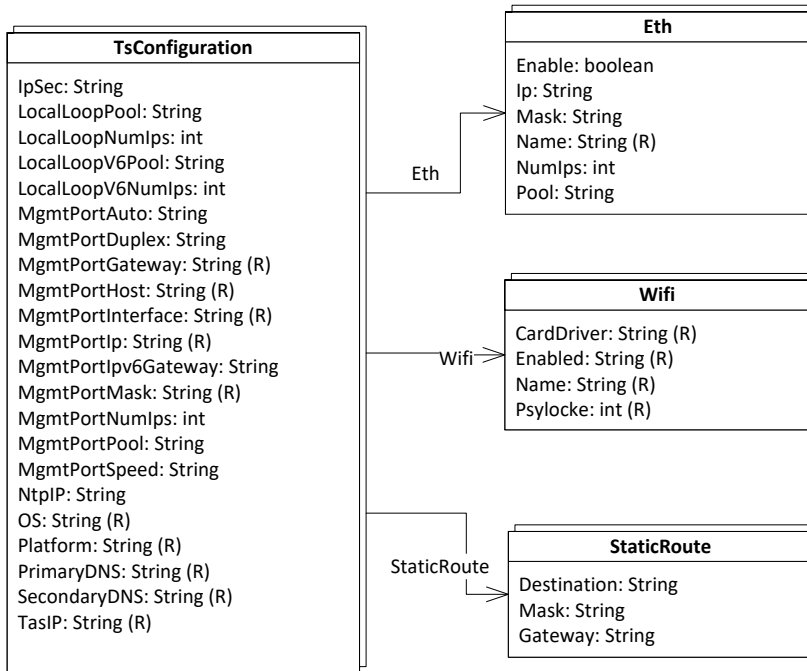
```
% set ts_id [ls::perform AddTs -Name "TestServer2" -ip "10.2.2.1"]
8
% set ts [ls::retrieve TsInfo -Name "TestServer2"]
java0xf
% ls::config $ts -ManagementIp "10.3.3.1"
% ls::perform ModifyTs $ts
```

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```
% ls::perform DeleteTs $ts
%
```

To configure the test servers, you use the `ls::perform` functions, `RetrieveTsConfiguration` and `ApplyTsConfiguration`. These functions correlate to using the *TS Configuration* window in the GUI, accessible via the **Configure** button on the *Test Server Administration* window. The objects involved are `TsConfiguration`, `Eth`, and `StaticRoute`.



The following is an example of the way you could configure a test server. The only change is the number of addresses in the local loopback pool to 400,000.

```
% set tsc [ls::perform RetrieveTsConfiguration -Name "TestServer2"]
java0x5
% ls::get $tsc
{EthDriver USER} {LocalLoopPool 44.0.0.1} {LocalLoopNumIps 400000}
{LocalLoopV6Pool 2005:4445::44:1} {LocalLoopV6NumIps 200000} {MgmtPortAuto
true} {MgmtPortDuplex {}} {MgmtPortGateway 10.71.30.1} {MgmtPortHost Coast44}
{MgmtPortInterface eth0} {MgmtPortIp 10.71.30.44} {MgmtPortIpv6Gateway {}}
{MgmtPortMask 255.255.255.0} {MgmtPortNumIps {}} {MgmtPortPool {}}
{MgmtPortSpeed {}} {NtpIP 10.71.30.120} {OS RH} {Platform 2500} {PrimaryDNS
192.168.1.254} {SecondaryDNS 192.168.1.254} {TasIP 10.71.30.120} {children
{{Eth0 java0x12} {Eth1 java0x13} {Eth2 java0x14} {Eth3 java0x15}
{StaticRoute0 java0x16} {StaticRoute1 java0x17}}}}
% ls::config $tsc -LocalLoopNumIps 400000
% ls::perform ApplyTsConfiguration $tsc
%
```

TsInfo

Writeable Attributes:

Writeable Attribute	Description								
ForceNumProcesses	<p>Flag to force the test server to use fewer processes than the assigned license. For the C100-M2 with an 8 process license, the value can be 0, 1, or 4. For all others, the value can only be 0 or 1. This supersedes and deprecates the ForceOnceProcess attribute.</p> <p>Type: int Default: 0 Example Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Use Default Number of Processes</td> </tr> <tr> <td>1</td> <td>Force test server to have one process</td> </tr> <tr> <td>4</td> <td>Force test server to have 4 processes when licensed for 8</td> </tr> </tbody> </table>	Value	Description	0	Use Default Number of Processes	1	Force test server to have one process	4	Force test server to have 4 processes when licensed for 8
Value	Description								
0	Use Default Number of Processes								
1	Force test server to have one process								
4	Force test server to have 4 processes when licensed for 8								
Id	<p>The ID of this test server in the TAS database. Writeable attribute for creating new test servers and querying. You cannot change a test server ID.</p> <p>Type: int Default: 0</p>								
ManagementIp	<p>The IP address used for management.</p> <p>Type: String Default: ""</p>								
Name	<p>The name of the test server. Writable attribute for creating new test servers and for querying. You cannot change a test server name.</p> <p>Type: String Default: ""</p>								
PrivateUserGroup	<p>The ID of the User Group this TS should belong to. 0 indicates a public Test Server.</p> <p>Type: int Default: 0</p>								
RequestControlAccelerator	<p>Only available if the TS-License includes the Control Plane Accelerator feature, and if MaxControlCores > 1. Set to true to turn on the CPA feature. To confirm the feature is enabled, see that NumControlCores == MaxControlCores or at least > 1.</p> <p>Type: Boolean</p>								
RequestedLicense	<p>The ID of the license requested for this test server. Contact Customer Support for your specific License ID, or you can assign it from the GUI, and then query via the Tcl API to see the License ID.</p> <p>Type: int Default: 0 Example Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Standard/Base License</td> </tr> <tr> <td>-1</td> <td>Legacy Data Accelerator</td> </tr> </tbody> </table>	Value	Description	0	Standard/Base License	-1	Legacy Data Accelerator		
Value	Description								
0	Standard/Base License								
-1	Legacy Data Accelerator								

	<p>-2 Legacy Performance Accelerator 1 Legacy Extreme 5 C100 Performance 4 C100 Extreme 32 C100 S2 Base 35 C100 S2 Performance 38 C100 S2 Extreme 21 C50 Base 43 Virtual Small 45 Virtual Medium 48 Virtual Large 2 Mx 3 Mxp</p>																																																				
SnapshotMask	<p>The bitmask value for the Trace Snapshot function on the TS. This will be 0 or not reported when not enabled, otherwise it will be a bitmask based on same bits used for normal trace function. Instead of providing named levels, you just get the mask.</p> <p>Here is a reference for the bits, the bit value and what the total bit mask value will be if all lower bits are set true.</p> <table border="1"> <thead> <tr> <th></th> <th>Function</th> <th>Debug</th> <th>Database</th> <th>Message</th> <th>State</th> </tr> </thead> <tbody> <tr> <td>Bit</td> <td>10</td> <td>9</td> <td>8</td> <td>7</td> <td>6</td> </tr> <tr> <td>Bit Value</td> <td>1024</td> <td>512</td> <td>256</td> <td>128</td> <td>64</td> </tr> <tr> <td>Total</td> <td>2047</td> <td>1023</td> <td>511</td> <td>255</td> <td>127</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th></th> <th>Info</th> <th>Warning</th> <th>Minor</th> <th>Major</th> <th>Critical</th> <th>Assert</th> </tr> </thead> <tbody> <tr> <td>Bit</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> <td>0</td> </tr> <tr> <td>Bit Value</td> <td>32</td> <td>16</td> <td>8</td> <td>4</td> <td>2</td> <td>1</td> </tr> <tr> <td>Total</td> <td>65</td> <td>31</td> <td>15</td> <td>7</td> <td>3</td> <td>1</td> </tr> </tbody> </table> <p>Type: int Default: 0</p>		Function	Debug	Database	Message	State	Bit	10	9	8	7	6	Bit Value	1024	512	256	128	64	Total	2047	1023	511	255	127		Info	Warning	Minor	Major	Critical	Assert	Bit	5	4	3	2	1	0	Bit Value	32	16	8	4	2	1	Total	65	31	15	7	3	1
	Function	Debug	Database	Message	State																																																
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	Info	Warning	Minor	Major	Critical	Assert																																															
Bit	5	4	3	2	1	0																																															
Bit Value	32	16	8	4	2	1																																															
Total	65	31	15	7	3	1																																															
SshAddress	<p>Set the forced SSH address. Set this to a specific IP Address or FQDN to reach the TS using SSH. Leave it empty string to use standard rules for determining the SSH address. Specifically added for when TS has separate path through network for SSH.</p> <p>Type: String Default: ""</p>																																																				
SshPort	<p>The TCP port to use for connecting to the TS for SSH. This can be changed if the TS is behind a NAT/Firewall where the public port has been changed.</p> <p>Type: int Default: 22</p>																																																				
UeTeamViewerAnyAccess	<p>Only available if teamviewer_for_all is not ON. Set to true to allow all users to access Team Viewer</p> <p>Type: Boolean</p>																																																				

Read-only Attributes:

Read-only Attribute	Description						
Architecture	The test server architecture (32 or 64 bit) as reported by the test server. Type: String						
BufferPcts	The listing of the message buffer utilization for the test server. The format will be CSV with named pairs. <P0>-Name1:Value1,Name2:Value2;<P1>-Name1:Value1.... Example: % ls::get \$ts -BufferPcts 0-Jumbo:0,Large:0,2k:0,Medium:1,Small:0;1-Jumbo:0,Large:0,2k:0,Medium:1,Small:0 Type: String						
CpuPcts	The listing of the CPU utilization for the test server. The format will be CSV with named pairs. <P0>-Name1:ID1:Value1,Name2:ID2:Value2;<P1>-Name1:ID1:Value1.... Example: % ls::get \$ts -CpuPcts 0-Control:0:35,User0:0:35;1- Control:0:35,User0:0:35 Type: String						
DataGenPerformance	Indicates which threading mode the test server is running. Currently there are two modes, Legacy and Max Data Gen Performance. In Legacy mode there is a balance of allocated processor resources between data and control plane processes. In Max mode there is an allocation bias toward data plane processes with increased isolation between data and control plane processes. Type: Custom String Default: Legacy Possible Values: <table border="1" data-bbox="600 1423 1490 1556"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Legacy</td> <td>Balanced processor resource allocation</td> </tr> <tr> <td>Max</td> <td>Resource allocation biased toward data plan process</td> </tr> </tbody> </table>	Value	Description	Legacy	Balanced processor resource allocation	Max	Resource allocation biased toward data plan process
Value	Description						
Legacy	Balanced processor resource allocation						
Max	Resource allocation biased toward data plan process						
DebugMode	Indicates if the test server is running in debug mode. When calling ls::get to list all the attributes, the DebugMode attribute will only be listed when its value is true. Type: Boolean						
IpSecAccelerator	Indicates the version of the IPsec Accelerator card installed in the test server. Type: String						

LimitEthMtuTo2k	<p>Indicates if the TS will limit MTU to 2000k when possible. This flag will be false, unless the TS supports this feature.</p> <p>Type: Boolean Default: False</p>
MaxControlCores	<p>Only reported if licensed for the Control Plane Accelerator feature. Indicates the maximum number of cores available for Control Plane Accelerator.</p> <p>Type: int</p>
Memory	<p>The test server memory as reported by the test server.</p> <p>Type: String</p>
NumControlCores	<p>Only reported if licensed for the Control Plane Accelerator feature. Indicates the current number of cores in use for Control Plane Accelerator, as reported by the TS.</p> <p>Type: int</p>
OS	<p>The test server operating system as reported by the test server.</p> <p>Type: String</p>
Platform	<p>The test server hardware platform as reported by the test server.</p> <p>Type: String</p>
ProcessMinutes	<p>Number of TS Process Minutes used by this TS today. Reset at midnight.</p> <p>Type: int</p>
ProxiedRealAddr	<p>The real/direct TS IP address reported by the TAS-TS Proxy, used for accessing TS via SSH or other protocols. Only reported if the TAS-TS Proxy is in use.</p> <p>Type: String Default: ""</p>
RequestedControlCores	<p>Only reported if licensed for the Control Plane Accelerator feature. Indicates the number of cores requested by the TAS based on the selected TS-License. If RequestedControlCores != NumControlCores, check for Warning messages.</p> <p>Type: int</p>
Remaining Memory	<p>The remaining memory in MB available on the test server as reported by the test server.</p> <p>Type: int (MB)</p>
ReservingDspResources	<p>Indicates if the test server is reserving resources for DTMF measurements.</p> <p>Type: Boolean</p>

ReservingExtAppResources	<p>Indicates if the test server is reserving resources (cores) for External Apps processing.</p> <p>Type: int (0-4)</p>
ReservingQosResources	<p>Indicates if the test server is reserving resources for POLQA or PEVQ measurements.</p> <p>Type: Boolean</p>
RunningLicense	<p>The license that is currently applied and running on the test server. This can be different than the RequestedLicense, if the TS does not support the RequestedLicense</p> <p>Type: Custom String</p>
State	<p>The state/status of the test server.</p> <p>Type: Formatted String Format: STATE [#RUNNING_TESTS] #AVAIL_PROCESSES/#USED Example: RUNNING [1] 2/3</p>
TraceLevel	<p>Indicates the debug trace bitmask value that the test server is running. When calling ls::get to list all the attributes, for current Test Servers, the TraceLevel attribute will only be listed when its value is other than the default value of 31.</p> <p>Type: int Min: 1 Max: 256</p>
TraceMode	<p>Indicates the debug trace mode that the test server is running. Indicates which trace components are enabled. When calling ls::get to list all the attributes, the TraceMode attribute will only be listed when its value is not "Assert Critical Major Minor Warning".</p> <p>Type: Custom String, Comma Separated List of Values Default: "Assert Critical Major Minor Warning" Possible Values: Assert, Critical, Major, Minor, Warning, Info, State, Message, Database, Debug, Function.</p>
TsDay	<p>Indicates if the test server has reached and counted its TS-Day. Only applicable for TS-Day/Consumption based license.</p> <p>Type: Boolean</p>
UeInfoLevel	<p>The UE Info reporting level.</p> <p>Type: int Min: 1 Max: 10</p>
UpgradeProgress	<p>Reported only when upgrade is started/active, provides indication of the progress.</p> <p>Type: String</p>

Version	The version of the test server software. Type: String
VpnToTasEnabled	Indicates if the test server is communicating to the TAS over the TAS VPN. Will be true if TS reports a VpnPublicIpAddress. Type: Boolean
VpnPublicIpAddress	The public IP Address of the TS, when using the VPN to connect to the TAS. Type: String
vTsMaxCores	On Virtual Test Servers, indicates the maximum number of cores available to run test server processes. Type: int
vTsCurCores	On Virtual Test Servers, indicates the current number of cores that a TS-Process is configured to use. Type: int

Children:

Child	Description
EthInfo	The Ethernet interface information. Type: AutoCreated Multiplicity: 0-n
UeInfo	The real UE over USB information. Type: AutoCreated Multiplicity: 0-n
WifiInfo	The Wi-Fi interface information. Type: AutoCreated Multiplicity: 0-n
WwanInfo	The LTE WWAN interface information. Type: AutoCreated Multiplicity: 0-n

EthInfo

The EthInfo object encapsulates an Ethernet interface. It is the TsPhyInfo type/class. The TsPhyInfo class is also used by the PhySubnet objects. Changing the attributes as an EthInfo object has no effect. In order to change a test server's interfaces, you must use the TsConfiguration and its sub-objects.

Writeable Attributes:

Writeable Attribute	Description
Base	The Base IP Address. Type: String Default: ""
Mask	The Mask. Type: String Default: ""
Name	The interface name. Type: String Default: ""
NumIps	The number of addresses in the pool. Type: int Default: 0

Read-only Attributes:

Read-only Attribute	Description
DisableRteAdvert	Indicates if the IPv6 Route Advertisement is being disabled for this port. This flag will be false, unless the TS/Port both support this feature and the feature is enabled (i.e. to disable the advertisement) Type: Boolean Default: False
Driver	The ETH Port Driver Type: String Default: ""
Hybrid	Indicates if the port is being used in Hybrid user/kernel mode. This flag will be false, unless the TS/Port both support this feature (Virtual Xen system) and the feature is enabled. Type: Boolean Default: False
Promiscuous	Indicates if the port is being used in Promiscuous mode. This flag will be false, unless the TS/Port both support this feature and the feature is enabled. Type: Boolean Default: False
Reserved	Indicates if the port is being used in reserved mode by a running test. Type: Boolean Default: False

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RunIds	<p>The list of RUN IDs of Test Sessions that are using this port. If they have reserved ports it will be one RUN ID, if they have not, it will be a list of all RUN IDs running on the TS.</p> <p>Type: String Default: ""</p>
Speed	<p>The ETH Port Speed, e.g. 10G, 1G.</p> <p>Type: String Default: ""</p>
VlanIds	<p>The list of VLAN IDs, if VLANs were provisioned as part of the TS configuration. This will be an empty string, unless the TS/Port both support this feature and the feature is enabled. The value will be a comma separated list of VLAN IDs or ID ranges, e.g. 100,300-400,450...</p> <p>Type: String Default: ""</p>

Children:

None

WifiInfo

The WifiInfo object encapsulates a Wi-Fi radio or wlan interface. It is the TsWifiInfo type/class. The TsWifiInfo class is read-only inside TsInfo objects.

Writeable Attributes:

None

Read-only Attributes:

Read-only Attribute	Description
CardIndex	The 1-based index of the Spirent Wi-Fi card where the radio is located, or 0 if it is a generic standalone Wi-Fi card. Type: int Default: 0
CardVersion	The Chipset/Driver for the radio. Type: String Default: ""
Mimo	Indicates if MIMO is supported. Type: String Default: ""
Name	The interface name. Type: String Default: ""
RadiolIndex	The 1-based index of the Spirent WIFI card where the radio is located, or 0 if a generic standalone WIFI card. If set to 0, it will not show up in the default no-argument ls::get that lists all attributes. Type: int Default: 0
RunIds	The list of RUN IDs of Test Sessions that are using this port. If they have reserved ports, it will be one RUN ID; if they have not, it will be a list of all RUN IDs running on the TS. Type: String Default: ""
WiFiVersion	The latest 802.11 Wi-Fi version supported by the card. Type: String Default: ""

Children:

None

WwanInfo

The WwanInfo object encapsulates an LTE radio or WWAN interface. It is the TsWwanInfo type/class. The TsWwanInfo class is read-only inside TsInfo objects.

Writeable Attributes:

None

Read-only Attributes:

Read-only Attribute	Description
Driver	The name/version of the driver of the WWAN Card. Type: String
Firmware	The name/version of the U1 firmware. Type: String
LteOffset	The 0-based index to indicate a specific LTE network interface; the valid values are 0 and 1. 0 is used to test latency; 1 is for VoLte. Type: int Default: 0
Name	The interface name. Type: String Default: ""
Port	The USB port number at the back of the E10. The valid values are 1-4 Type: int Default: 1
SimAdapterStatus	Indicates if the WWAN supports vSIMs from a SIM Server. Type: String
Technology	The Technology supported by the card. Type: String

Children:

None

UeInfo

The UeInfo object encapsulates a real UE connected over USB. It is the TsUeInfo type/class. The TsUeInfo class is read-only inside TsInfo objects.

General	Ethernet	Wi-Fi	Certificate Files	UE	Meta Data	Errors
<input type="button" value="Scan"/>						
SN#	MEID	State	USB Slot#	Manufacturer	Product/Device	Test RID
R[b7f5f4ba]		scan	3-3	samsung	SM-G930P/heroqltespr	67
98897a325a324a5959	35772108188267	scan	3-2	samsung	SM-G950U/dreamqltesq	

Writeable Attributes:

None

Read-only Attributes:

Read-only Attribute	Description
AppVersion	The version of the Landslide Application running on the UE. Type: String
BatteryLevel	The % level of the battery on the UE Type: String
Device	The name of the Device for the UE. Type: String
DiskFree	Number of GB free on disk Type: String
Manufacturer	The name of the Manufacturer of the UE. Type: String
Mdn	The Mobile Directory Number of the UE. Type: String
Meid	The Mobile Equipment ID of the UE. Type: String
Product	The official Product name of the UE. Type: String
ReservedRid	The RUN ID of the Test Session using the UE, if any. Only shown in default get if > 0. Type: int Default: 0
SerialNum	The Serial Number of the UE. Type: String

SetupBitmask	<p>The integer bitmask value for the results of the current or previous handset_setup.py setup of the UE.</p> <p>Type: int Possible Values:</p> <table border="1" data-bbox="592 352 1446 506"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Successful</td> </tr> <tr> <td>-1</td> <td>In Progress</td> </tr> <tr> <td>>1</td> <td>Up to 64-bit value, see list below or refer to the GUI/online Help.</td> </tr> </tbody> </table> <p>Bits:</p> <table border="1" data-bbox="592 537 1487 1375"> <tbody> <tr><td>1</td><td>Change lock method</td></tr> <tr><td>2</td><td>Disable always on display</td></tr> <tr><td>3</td><td>Enable location services with battery saving</td></tr> <tr><td>4</td><td>Disable Bluetooth services</td></tr> <tr><td>5</td><td>Disable WIFI services</td></tr> <tr><td>6</td><td>Change auto rotate to portrait mode</td></tr> <tr><td>7</td><td>Disable sound mode</td></tr> <tr><td>8</td><td>Disable ringtone and media volume</td></tr> <tr><td>9</td><td>Disable vibration</td></tr> <tr><td>10</td><td>Disable battery optimization and app power monitor</td></tr> <tr><td>12</td><td>Disable navigation bar hide feature</td></tr> <tr><td>13</td><td>Set screen timeout to 10 minutes</td></tr> <tr><td>14</td><td>Set in-call volume</td></tr> <tr><td>15</td><td>Disable auto-answering</td></tr> <tr><td>16</td><td>Turn on volte</td></tr> <tr><td>17</td><td>Set brightness to 10%</td></tr> <tr><td>18</td><td>Disable NFC/android beam</td></tr> <tr><td>19</td><td>Disable Print Service</td></tr> <tr><td>20</td><td>Close all running apps</td></tr> <tr><td>21</td><td>Update profile</td></tr> <tr><td>22</td><td>Allow less secure apps to access gmail</td></tr> <tr><td>23</td><td>Turn on vo-wifi</td></tr> <tr><td>63</td><td>Disable Keep Wi-Fi on during sleep</td></tr> <tr><td>64</td><td>Handset Initial Setup (Customized firmware only)</td></tr> </tbody> </table>	Value	Description	0	Successful	-1	In Progress	>1	Up to 64-bit value, see list below or refer to the GUI/online Help.	1	Change lock method	2	Disable always on display	3	Enable location services with battery saving	4	Disable Bluetooth services	5	Disable WIFI services	6	Change auto rotate to portrait mode	7	Disable sound mode	8	Disable ringtone and media volume	9	Disable vibration	10	Disable battery optimization and app power monitor	12	Disable navigation bar hide feature	13	Set screen timeout to 10 minutes	14	Set in-call volume	15	Disable auto-answering	16	Turn on volte	17	Set brightness to 10%	18	Disable NFC/android beam	19	Disable Print Service	20	Close all running apps	21	Update profile	22	Allow less secure apps to access gmail	23	Turn on vo-wifi	63	Disable Keep Wi-Fi on during sleep	64	Handset Initial Setup (Customized firmware only)
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State	<p>The authentication or scan state of the UE.</p> <p>Type: String</p>																																																								
SystemAvailMemory	<p>The available memory of the UE in MB.</p> <p>Type: String</p>																																																								
Temperature	<p>Temperature of the UE in Fahrenheit (F).</p> <p>Type: String</p>																																																								
QcatVersion	<p>The version number of the QCAT software on the UE.</p> <p>Type: String</p>																																																								
UsbSlotId	<p>The ID of the USB Slot that the UE is connected to.</p> <p>Type: int</p>																																																								
WatchdogAppVersion	<p>The version number of the WatchDog application on the UE.</p> <p>Type: String</p>																																																								

Children:

None

TsConfiguration

Writeable Attributes:

Writeable Attribute	Description
CountryCode	<p>The Country Code for WLAN Radio. (Only applicable on test servers with WLANs)</p> <p>Type: Custom String Default: "" Possible Values: 00, AD, AE, AL, AM, AN, AR, AT, AU, AW, AZ, BA, BB, BD, BE, BG, BH, BL, BN, BO, BR, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CX, CY, CZ, DE, DK, DO, DZ, EC, EE, EG, ES, FI, FR, GE, GB, GD, GR, GL, GT, GU, HN, HK, HR, HT, HU, ID, IE, IL, IN, IS, IR, IT, JM, JP, JO, KE, KH, KP, KR, KW, KZ, LB, LI, LK, LT, LU, LV, MC, MA, MO, MK, MT, MY, MX, NG, NI, NL, NO, NP, NZ, OM, PA, PE, PG, PH, PK, PL, PT, PR, QA, RO, RS, RU, RW, SA, SE, SG, SI, SK, SV, SY, TH, TT, TN, TR, TW, TZ, UA, UG, US, UY, UZ, VE, VN, VU, WF, WS, YE, ZA, ZW</p>
IpSec	<p>The IP address version used for management. (Only applicable on certain test servers).</p> <p>Type: String Default: ""</p>
LimitEthMtu2k	<p>Indicates if the TS will limit the MTU size to 2000 bytes for all ETH ports. Will be blank for TSs that do not support the feature.</p> <p>Type: Boolean (Empty String when not supported) Default: True</p>
LimitLogins	<p>Indicates if the TS is in the limited login configuration (Half-way Advanced Security), disabling the standard logins for extra OS accounts.</p> <p>Type: Boolean Default: false</p>
LocalLoopPool	<p>The starting address of the local loopback IPv4 addresses pool.</p> <p>Type: IP Address string Default: ""</p>
LocalLoopNumIps	<p>The number of addresses in the local loopback IPv4 addresses pool.</p> <p>Type: int Default: ""</p>
LocalLoopV6Pool	<p>The starting address of the local loopback IPv6 addresses pool.</p> <p>Type: IPv6 Address string Default: ""</p>

LocalLoopV6NumIps	<p>The number of addresses in the local loopback IPv6 addresses pool.</p> <p>Type: int Default: ""</p>															
MgmtPortAuto	<p>The autonegotiation flag for the management interface. If true, Speed and Duplex should be set or left blank.</p> <p>Type: Boolean Default: True</p>															
MgmtPortDuplex	<p>The duplex setting for the management interface. Should only be set when Auto is not true.</p> <p>Type: Custom String Default: "" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl Constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>""</td> <td>Is::ETH_DUPLEX_NONE</td> <td>Blank used when Auto is true</td> </tr> <tr> <td>Full</td> <td>Is::ETH_DUPLEX_FULL</td> <td>Full duplex</td> </tr> <tr> <td>Half</td> <td>Is::ETH_DUPLEX_HALF</td> <td>Half duplex</td> </tr> </tbody> </table>	Value	Tcl Constant	Description	""	Is::ETH_DUPLEX_NONE	Blank used when Auto is true	Full	Is::ETH_DUPLEX_FULL	Full duplex	Half	Is::ETH_DUPLEX_HALF	Half duplex			
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Half	Is::ETH_DUPLEX_HALF	Half duplex														
MgmtPortIpV6Gateway	<p>The Ipv6 gateway for the management interface.</p> <p>Type: IPv6 Address string Default: ""</p>															
MgmtPortNumIps	<p>The number of addresses in the management port addresses pool. Must be set if MgmtPortPool has a value and vice versa.</p> <p>Type: int Default: ""</p>															
MgmtPortPool	<p>The starting address in the management interface's address pool. Must be set if MgmtPortNumIps has a value and vice versa.</p> <p>Type: IP Address string Default: ""</p>															
MgmtPortSpeed	<p>The speed of the management interface. Should only be set when Auto is not true.</p> <p>Type: Custom String Default: "" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Tcl Constant</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>""</td> <td>Is::ETH_SPEED_NONE</td> <td>Blank used when Auto is true</td> </tr> <tr> <td>10</td> <td>Is::ETH_SPEED_10</td> <td>10 Mbps</td> </tr> <tr> <td>100</td> <td>Is::ETH_SPEED_100</td> <td>100 Mbps</td> </tr> <tr> <td>1000</td> <td>Is::ETH_SPEED_1000</td> <td>1000 Mbps</td> </tr> </tbody> </table>	Value	Tcl Constant	Description	""	Is::ETH_SPEED_NONE	Blank used when Auto is true	10	Is::ETH_SPEED_10	10 Mbps	100	Is::ETH_SPEED_100	100 Mbps	1000	Is::ETH_SPEED_1000	1000 Mbps
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1000	Is::ETH_SPEED_1000	1000 Mbps														
NtpIP	<p>The NTP server IP address.</p> <p>Type: IP Address string Default: ""</p>															
NtpIP2	<p>The second NTP server IP address. Only available if the TS supports multiple NTP Servers.</p> <p>Type: IP Address string Default: ""</p>															

NtpIP3	<p>The third NTP server IP address. Only available if the TS supports multiple NTP Servers.</p> <p>Type: IP Address string Default: ""</p>
PtpIpMode	<p>Flag to enable or disable PTP IP Mode. This attribute is only available/enabled if PtpTransportMode is available and set to "ipv4".</p> <p>Type: Custom String Default: "multicast" Possible Values: "", "multicast", "unicast", "hybrid"</p>
PtpMasterIp	<p>PTP Server Master IP Address. This attribute is only available/enabled if PtpIpMode is available and set to "unicast".</p> <p>Type: String, IPv4 Address without /mask Default: ""</p>
PtpTransportMode	<p>Flag to enable or disable IPv4 or Ethernet transport. This attribute is only available/enabled if TimeSyncProtocol is PTP.</p> <p>Type: Custom String Default: "ipv4" Possible Values: "ipv4", "ethernet"</p>
ReserveDspResources	<p>Flag to enable or disable the DTMF engine on the test server. This attribute is only available/enabled if the test server supports DTMF.</p> <p>Type: Boolean Default: false</p>
ReserveExtAppResources	<p>Specifies the External Apps dedicated cores on the test server. This attribute is only available/enabled if the test server supports External Apps threading. Maximum value will be based on what the TS reports for maxExtAppCores.</p> <p>Type: int Default: 0 Min: 0 Max: 2 to 4 depending upon TS</p>
ReserveQosResources	<p>Flag to enable or disable the POLQA/PEVQ engine on the test server. This attribute is only available/enabled if the test server supports POLQA/PEVQ.</p> <p>Type: Boolean Default: false</p>

ThreadModel	<p>The threading mode the test server should run. This attribute is only available/enabled if the test server supports multiple threading models. This attribute is the underlying control for Legacy or Max Data Gen Performance or Fireball. Refer to the Release Notes and other product-specific documentation for more details. Each Test Server platform has unique requirements to support these features.</p> <p>Type: Custom String Default: V0 Possible Values:</p> <table border="1" data-bbox="589 541 1477 787"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>V0</td> <td>Legacy Data Gen Performance mode</td> </tr> <tr> <td>V1</td> <td>Max Data Gen Performance mode (Data Gen Performance = Max)</td> </tr> <tr> <td>V1_FB3</td> <td>Fireball 3-core on all TS-Processes (Data Gen Performance = Fireball).</td> </tr> <tr> <td>V1_FBN/n/n/n</td> <td>Fireball on specific TS-Processes, where n=0 (Max mode) or n=3 (Fireball enabled).</td> </tr> </tbody> </table>	Value	Description	V0	Legacy Data Gen Performance mode	V1	Max Data Gen Performance mode (Data Gen Performance = Max)	V1_FB3	Fireball 3-core on all TS-Processes (Data Gen Performance = Fireball).	V1_FBN/n/n/n	Fireball on specific TS-Processes, where n=0 (Max mode) or n=3 (Fireball enabled).
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TimeSyncProtocol	<p>Flag to enable or disable NTP/PTP configurations. This attribute is only available on test servers that support PTP. If the attribute is not available, empty, or null, there is no choice, only NTP is supported.</p> <p>Type: Custom String Default: "ntp" Possible Values: "ntp", "ptp", ""</p>										
UeInfoLevel	<p>Sets the UE Info reporting level.</p> <p>Type: int Default: 1 Min: 1 Max: 10</p>										

Read-only Attributes:

Read-only Attribute	Description
AltV4Address	<p>The management alternate IPv4 address, if enabled.</p> <p>Type: IP Address string Default: ""</p>
AltV4Device	<p>The management alternate IPv4 device name, if enabled.</p> <p>Type: String Default: ""</p>
AltV4Gateway	<p>The management alternate IPv4 gateway address.</p> <p>Type: IP Address string Default: ""</p>
AltV4Mask	<p>The management alternate IPv4 mask.</p> <p>Type: IP Address string Default: ""</p>
Dpdk	<p>Flag to indicate what version of DPDK is running if at all. 0=none, 1=rev1</p> <p>Type: Int</p>

MaxExtAppCores	<p>Indicates the maximum number of cores that can be assigned to ReserveExtAppResources.</p> <p>Type: int Default: 0 Min: 0 Max: 4</p>												
MgmtPortGateway	<p>The management interface's gateway address.</p> <p>Type: IP Address string Default: ""</p>												
MgmtPortHost	<p>The management interface's hostname.</p> <p>Type: String</p>												
MgmtPortInterface	<p>The management interface's name; usually eth0.</p> <p>Type: String</p>												
MgmtPortIp	<p>The management interface's IP address.</p> <p>Type: IP Address string</p>												
MgmtPortMask	<p>The management interface's mask.</p> <p>Type: IP Address string</p>												
MgmtPortMtu	<p>The management interface's MTU setting.</p> <p>Type: Int</p>												
NtpActive	<p>The NTP Server (IP Address) that is currently active. When using multiple NTP Servers, this indicates the IP Address from NtpIP, NtpIP2, or NtpIP3 that is currently being used to sync time.</p> <p>Type: String</p>												
NtpTrace	<p>The NTP Trace output for the NtpActive Server. The output will be flattened to one line with semi-colon separation. NtpTrace is not included in the default ls::get, you must directly query it, ls::get \$ts - NtpTrace.</p> <p>Type: String</p>												
OS	<p>The test server operating system type.</p> <p>Type: Custom String Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>""</td> <td>Unknown</td> </tr> <tr> <td>MVL</td> <td>Montavista</td> </tr> <tr> <td>UBUNTU</td> <td>Ubuntu</td> </tr> <tr> <td>RH</td> <td>RedHat</td> </tr> </tbody> </table>	Value	Description	""	Unknown	MVL	Montavista	UBUNTU	Ubuntu	RH	RedHat		
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7100	Landslide 7100												
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C50	Landslide C50												

PrimaryDns	<p>The primary DNS server address.</p> <p>Type: IP Address string</p>										
PrometheusStatus	<p>Indicates if the TAS has Prometheus Server enabled.</p> <p>Type: Custom String Default: "" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td>Empty String, indicates not supported</td> </tr> <tr> <td>enable</td> <td>Prometheus is enabled</td> </tr> <tr> <td>disable</td> <td>Prometheus is disabled</td> </tr> </tbody> </table>	Value	Description		Empty String, indicates not supported	enable	Prometheus is enabled	disable	Prometheus is disabled		
Value	Description										
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SearchDns	<p>DNS Suffix search string.</p> <p>Type: Hostname/FQDN sub-string</p>										
SecondaryDns	<p>The secondary DNS server address.</p> <p>Type: IP Address string</p>										
SupportedHybridTypes	<p>This will be a comma separated list of string indicating the possible Hybrid Types or an empty string if Hybrid Type choices are not supported.</p> <p>Type: Custom String Possible Values for PortInfo HybridType:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>AF_PACKET</td> <td>Uses DPDK driver</td> </tr> <tr> <td>RAW_SOCKET</td> <td>Traditional hybrid mode</td> </tr> <tr> <td>EXT_APP</td> <td>For external Utility Node TC testing</td> </tr> <tr> <td>NET_PCAP</td> <td>Supported on Azure only, if listed in SupportedTypes</td> </tr> </tbody> </table>	Value	Description	AF_PACKET	Uses DPDK driver	RAW_SOCKET	Traditional hybrid mode	EXT_APP	For external Utility Node TC testing	NET_PCAP	Supported on Azure only, if listed in SupportedTypes
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EXT_APP	For external Utility Node TC testing										
NET_PCAP	Supported on Azure only, if listed in SupportedTypes										
SupportedThreadModels	<p>The threading models that the test server can support. This will be a comma separated list of strings, most of which represent the literal value for ThreadModel. For V1_FB3_[n] pattern values, it indicates how many individual processes can be enabled for Fireball. This attribute is only available/enabled if the test server supports multiple threading models. This attribute is the underlying control for Legacy or Max Data Gen Performance or Fireball. Refer to the Release Notes and other product-specific documentation for more details. Each Test Server platform has unique requirements to support these features.</p> <p>Type: Custom String Default: V0 Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>V0</td> <td>Legacy Data Gen Performance mode</td> </tr> <tr> <td>V1</td> <td>Max Data Gen Performance mode (Data Gen Performance = Max)</td> </tr> <tr> <td>V1_FB3</td> <td>Fireball 3-core on all TS-Processes (Data Gen Performance = Fireball).</td> </tr> <tr> <td>V1_FB3_n</td> <td>Fireball on specific TS-Processes, where might be n=4 or n=8 (e.g. C100 M4's), correlates to ThreadModel values of e.g. V1_FB3/0/0/3, or V1_FB3/3/3/3/0/0/0</td> </tr> </tbody> </table>	Value	Description	V0	Legacy Data Gen Performance mode	V1	Max Data Gen Performance mode (Data Gen Performance = Max)	V1_FB3	Fireball 3-core on all TS-Processes (Data Gen Performance = Fireball).	V1_FB3_n	Fireball on specific TS-Processes, where might be n=4 or n=8 (e.g. C100 M4's), correlates to ThreadModel values of e.g. V1_FB3/0/0/3, or V1_FB3/3/3/3/0/0/0
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V0	Legacy Data Gen Performance mode										
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TasHostname	The TAS's hostname per TS's configuration. Type: String								
TasIpAddressMode	The TAS's IP Discovery Mode per TS's configuration Type: Custom String Default: static Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>static</td> <td>Legacy static IP address.</td> </tr> <tr> <td>dynamic</td> <td>TAS's IP address discovered up by hostname.</td> </tr> </tbody> </table>	Value	Description	static	Legacy static IP address.	dynamic	TAS's IP address discovered up by hostname.		
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static	Legacy static IP address.								
dynamic	TAS's IP address discovered up by hostname.								
TasIP	The controlling TAS's IP address. Type: IP Address string								
TsHostname	The TS's hostname. Type: string								
TsIpAddressMode	The TS's IP Discovery Mode Type: Custom String Default: static Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>static</td> <td>Legacy static IP address.</td> </tr> <tr> <td>dynamic</td> <td>TS uses DHCP to get IP address.</td> </tr> </tbody> </table>	Value	Description	static	Legacy static IP address.	dynamic	TS uses DHCP to get IP address.		
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static	Legacy static IP address.								
dynamic	TS uses DHCP to get IP address.								
VpnClientEnabled	Indicates if the TS has a VPN Client to TAS Enabled. Type: Custom String Default: "" Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td>Empty String, indicates not supported</td> </tr> <tr> <td>enabled</td> <td>VPN Client is enabled</td> </tr> <tr> <td>disabled</td> <td>VPN Client is disabled</td> </tr> </tbody> </table>	Value	Description		Empty String, indicates not supported	enabled	VPN Client is enabled	disabled	VPN Client is disabled
Value	Description								
	Empty String, indicates not supported								
enabled	VPN Client is enabled								
disabled	VPN Client is disabled								
VpnServerEnabled	Indicates if the TS has a VPN Server Enabled. This feature should only be enabled on a TS if it is a combination TAS/TS system. Type: Custom String Default: "" Possible Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td>Empty String, indicates not supported</td> </tr> <tr> <td>enabled</td> <td>VPN Server is enabled</td> </tr> <tr> <td>disabled</td> <td>VPN Server is disabled</td> </tr> </tbody> </table>	Value	Description		Empty String, indicates not supported	enabled	VPN Server is enabled	disabled	VPN Server is disabled
Value	Description								
	Empty String, indicates not supported								
enabled	VPN Server is enabled								
disabled	VPN Server is disabled								

Children:

Child	Description
Eth	Other testing Ethernet interface port-subnet configurations. Type: AutoCreated Multiplicity: 0-n
PortInfo	Other testing Ethernet interface general options. Type: AutoCreated Multiplicity: 0-n
StaticRoute	Default Static Routes on the test server. Type: UserCreated Multiplicity: 0-32
Wifi	Wi-Fi interfaces available on the test server. Type: AutoCreated Multiplicity: 0-n
Wwan	LTE WWAN interfaces available on the test server. Type: AutoCreated Multiplicity: 0-n

Eth

The Eth object specifies the port-Subnets of the Ethernet interfaces in a TsConfiguration.

Writeable Attributes:

Writeable Attribute	Description
Auto	Specifies if the port should use Auto-Negotiation (true) or to force a manual mode (false). If it shows up as empty string, that is indicative of true. Type: Boolean Default: true
Enable	Whether the interface is enabled or disabled, Enable On Boot in the GUI. In some cases, the Eth port is forced as enabled or disabled by the TS, and this attribute is not configurable by the user. In this situation, the value might be seen as an empty string. Type: Boolean Default: True

Hybrid	<p>Indicates if the port is being used in hybrid user/kernel mode. This is only supported on systems that report this value in the Eth object. It will be an empty string where not supported. This is only supported on 16.6 or later TSs and is also deprecated. Since 16.8, Hybrid flag is set from the PortInfo object. If the flag is present in both places, changing it in one place, automatically changes it in the other. In a future release, it will be removed from the Eth object and will only be available in PortInfo.</p> <p>Type: Boolean Default: False</p>
Ip	<p>The interface's base address. If the interface name ends with v6, IPv6 addresses must be used.</p> <p>Type: IPv4 or IPv6 Address string Default: ""</p>
Mask	<p>The interface's mask. If the interface name ends with v6, IPv6 addresses must be used.</p> <p>Type: IP Address string Default: ""</p>
NumIps	<p>The number of addresses in the interface addresses pool. Must be set if Pool has a value and vice versa.</p> <p>Type: int Default: ""</p>
Pool	<p>The starting address in the interface addresses pool. Must be set if NumIps has a value and vice versa. If the interface name ends with v6, IPv6 addresses must be used.</p> <p>Type: IPv4 or IPv6 Address string Default: ""</p>

Read-only Attributes:

Read-only Attribute	Description
Name	<p>The name of the ETH interface. A name ending with v6 indicates an IPv6 interface.</p> <p>Type: String</p>

Children:

None

PortInfo

The PortInfo object specifies the general configuration of an Ethernet interface in a TsConfiguration.

Writeable Attributes:

Writeable Attribute	Description												
DisableRteAdvert	<p>Indicates if the interface will disable IPv6 Router Advertisements. It will be an empty string on systems that do not support</p> <p>Type: Boolean (Empty String when not supported) Default: True</p>												
Hybrid	<p>Indicates if the port is being used in hybrid user/kernel mode. This is only supported on systems that report this value. It will be an empty string on systems that do not support it.</p> <p>Type: Boolean (Empty String when not supported) Default: False</p>												
HybridType	<p>Indicates the DPDK driver type used for Hybrid mode. Refer to the online Help for more details. When Hybrid flag is false, this field will be ignored. When Hybrid flag is true this field should be set to a non-empty string value. However, an empty string will be considered AF_PACKET when Hybrid is true.</p> <p>Type: Custom String Default: "" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td>Empty String may indicate not supported or else will be the default value of AF_PACKET.</td> </tr> <tr> <td>AF_PACKET</td> <td>Uses DPDK driver.</td> </tr> <tr> <td>RAW_SOCKET</td> <td>Traditional hybrid mode</td> </tr> <tr> <td>EXT_APP</td> <td>For External Utility Node TC testing.</td> </tr> <tr> <td>NET_PCAP</td> <td>Supported on Azure only, if listed in SupportedTypes</td> </tr> </tbody> </table>	Value	Description		Empty String may indicate not supported or else will be the default value of AF_PACKET.	AF_PACKET	Uses DPDK driver.	RAW_SOCKET	Traditional hybrid mode	EXT_APP	For External Utility Node TC testing.	NET_PCAP	Supported on Azure only, if listed in SupportedTypes
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	Empty String may indicate not supported or else will be the default value of AF_PACKET.												
AF_PACKET	Uses DPDK driver.												
RAW_SOCKET	Traditional hybrid mode												
EXT_APP	For External Utility Node TC testing.												
NET_PCAP	Supported on Azure only, if listed in SupportedTypes												
Promisc	<p>Indicates if the port is in Promiscuous mode. It will be an empty string on systems that do not support it.</p> <p>Type: Boolean (Empty String when not supported) Default: False</p>												
VlanEn	<p>Indicates if the port will include some VLANs. It will be an empty string on systems that do not support it.</p> <p>Type: Boolean (Empty String when not supported) Default: False</p>												
VlanIds	<p>When VlanEn is True, can contain a comma separated, chronological list of VLAN IDs or VLAN ID Ranges. E.G. 1001,1009,2000-3000.</p> <p>Type: String Default: "" Possible Values: Comma separated list of single VLAN IDs or START-END range of VLAN IDs. Each ID must be between 0 and 4095, inclusive.</p>												

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Read-only Attributes:

Read-only Attribute	Description
Name	The name of the ETH interface. Type: String

Children:

None

StaticRoute

The StaticRoute object specifies a static route entry in a TsConfiguration.

Writeable Attributes:

Writeable Attribute	Description
Destination	The Destination IP Address Type: String Default: ""
Mask	The Mask Type: String Default: ""
Gateway	The Gateway Type: String Default: ""

Read-only Attributes:

None

Children:

None

Wifi

The Wifi object specifies a Wi-Fi interface in a TsConfiguration.

Writeable Attributes:

Writeable Attribute	Description
Mimo	Whether the interface supports MIMO. Only applicable where supported; returns an empty String where not supported. Type: Boolean or empty Default: True

Read-only Attributes:

Read-only Attribute	Description
CardDriver	The Driver for the Wi-Fi card.
CardIndex	The 1-based index of the Spirent Wi-Fi card that the Wi-Fi interface is on. 0 indicates a generic standalone Wi-Fi interface. Type: int Default: 0
Enable	Whether the interface is enabled or disabled. Type: Boolean Default: True
Name	The name of the Wi-Fi interface. Type: String Default: ""

Children:

None

Wwan

The Wwan object specifies an LTE WWAN interface in a TsConfiguration.

Writeable Attributes:

None

Read-only Attributes:

Read-only Attribute	Description
Driver	The Driver for the WWAN card.
Enable	Specifies whether the interface is enabled or disabled. Type: Boolean Default: True
LteOffset	The 0-based index Type: int Default: 0
Name	The name of the WWAN interface. Type: String Default: ""
Port	The index of the port the WWAN is on. Type: String Default: ""
SimAdapterStatus	Indicates if the driver supports SIM Adapter/Client. Type: String Default: ""

Children:

None

System Under Test

Systems Under Test (SUTs) are available using the `ls::query SutInfo` command. SUTs are managed using the `ls::perform` functions, `AddSut`, `ModifySut`, and `DeleteSut`. SUTs are identified by name in test cases.

You add a SUT as shown:

```
% set sut [ls::create SutInfo -name "SUT_1" -ip 192.168.100.88 \
           -ManagementIp 192.168.100.88 ]
java0xd
% ls::perform AddSut $sut
27
%
```

The SUT is then available using the query:

```
% set sut [ls::query SutInfo -name "SUT_1" ]
java0xa
% ls::get $sut
{DataIp {}} {Id 27} {Ip 192.168.100.88} {ManagementIp 192.168.100.88} {Name
SUT_1} {Password {}} {LastSavedDate {Wed Dec 31 19:00:00 EST 1969}} {Username
{}}
%
```

SutInfo

Writeable Attributes:

Writeable Attribute	Description
Id	The ID of this SUT in the TAS database. Type: int Default: 0
Ip	The IP address for the main testing interface. Type: String Default: ""
ManagementIp	The IP address used for management. Type: String Default: ""
Name	The Name of the SUT Type: String up to 64 characters Default: ""

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Password	The password for the management account. Type: String up to 16 characters Default: ""
SshPort	The port to use for accessing the SUT using SSH. Used by TS when SUT is a Container application. Type: int Default: 22 Min: 0 Max: 65535
LastSavedDate	The date the SUT was last saved. Type: Formatted String Default: Wed Dec 31 19:00:00 EST 1969
Username	The username for the management account. Type: String up to 30 characters Default: ""

Read-only Attributes:

None

Children:

None

Simnovators

Simnovators are available using the `ls::query SimnovatorInfo` command. Simnovators are managed using the `ls::perform` functions, `AddSinnovator`, `ModifySinnovator`, and `DeleteSinnovator`. Simnovators are identified by name in test cases.

You add a Simnovator as shown:

```
% set simnovator [ls::create SimnovatorInfo -name "SIMN_1" -Address
192.168.100.88 -Port 3002 -Type RUSim]
java0xd
% ls::perform AddSinnovator $simnovaotr
26
%
```

The Simnovator is then available using the query:

```
% set simnovator [ls::query SimnovatorInfo -name "SIMN_1" ]
java0xa
% ls::get $simnovator
{Id 26} {Address 192.168.100.88} {Port 3002} {Name SIMN_1} { {LastSavedDate
{Wed Dec 31 19:00:00 EST 1969} {LicenseId {}} {AssociatedVertex 1}
%
```

SimnovatorInfo

Writeable Attributes:

Writeable Attribute	Description
Id	The ID of this Simnovator in the TAS database. Type: int Default: 0
Address	The IP address for the main testing interface. Type: String Default: ""
Port	The port to use for accessing the Simnovator. Type: Int Default: 3002 Min: 0 Max: 65535
Name	The Name of the Simnovator Type: String up to 64 characters Default: ""
Type	The Type for the Simnovator, UESim and RUSim. Type: String up to 16 characters Default: "UESim"

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LastSavedDate	The date of the Simnovator was last saved. Type: Formatted String Default: Wed Dec 31 19:00:00 EST 1969
Licesneld	The License for the Simnovator. Type: String up to 16 characters Default: ""
AssociatedVertex	The Vertex associated with this Simnovator. Type: Int Default: -1

Read-only Attributes:

None

Children:

None

Vertexes

Vertexes are available using the ls::query VertexInfo command. Vertexes are managed using the ls::perform functions, Add Vertex, Modify Vertex, and Delete Vertex. Vertexes are identified by name in test cases.

You add a Vertex as shown:

```
% set vertex [ls::create VertexInfo -name "VETX_1" -Address 192.168.100.88 -
Port 3000]
java0xd
% ls::perform AddVertex $vertex
26
%
```

The Vertex is then available using the query:

```
% set vertex [ls::query VertexInfo -name "VETX_1" ]
java0xa
% ls::get $vertex
{Id 26} {Address 192.168.100.88} {Port 3000} {Name VETX_1} { {LastSavedDate
{Wed Dec 31 19:00:00 EST 1969}
%
```

VertexInfo

Writeable Attributes:

Writeable Attribute	Description
Id	The ID of this Vertex in the TAS database. Type: int Default: 0
Address	The IP address for the main testing interface. Type: String Default: ""
Port	The port to use for accessing the Vertex. Type: Int Default: 3000 Min: 0 Max: 65535
Name	The Name of the Vertex Type: String up to 64 characters Default: ""
LastSavedDate	The date of the Vertex was last saved. Type: Formatted String Default: Wed Dec 31 19:00:00 EST 1969

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Read-only Attributes:

None

Children:

None

Libraries

For most objects, only the library id is required to identify which library in which they are stored. The libraries can be queried using the `ls::query LibraryInfo` command. This command returns a `LibraryInfo` object. Here are some examples of how to determine the library id based on library type:

1. A Custom Library

```
% set lib [ls::query LibraryInfo -customLibraryName "CustomLib"]
% set lib_id [ls::get $lib -id]
```

2. A User's Library

```
% set lib [ls::query LibraryInfo -userLibraryName "user1"]
% set lib_id [ls::get $lib -id]
```

3. A System Library

```
% set lib [ls::query LibraryInfo -systemLibraryName "Global"]
% set lib_id [ls::get $lib -id]
```

LibraryInfo

Writeable Attributes:

Writeable Attribute	Description								
Name	<p>The full name of the Library; it includes a subfolder separated by a slash, e.g. toplibrary/sublibrary.</p> <p>Type: String up to 64 characters Default: ""</p>								
Rules	<p>The writeable indicator for custom libraries only.</p> <p>Type: Custom String Default: "" Possible Values:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>""</td> <td>Writeable by Test Administrator and above user levels.</td> </tr> <tr> <td>sa</td> <td>Writeable by System Administrators and above user levels.</td> </tr> <tr> <td>All</td> <td>Writeable by all users</td> </tr> </tbody> </table>	Value	Description	""	Writeable by Test Administrator and above user levels.	sa	Writeable by System Administrators and above user levels.	All	Writeable by all users
Value	Description								
""	Writeable by Test Administrator and above user levels.								
sa	Writeable by System Administrators and above user levels.								
All	Writeable by all users								

Read-only Attributes:

Read-only Attribute	Description												
Id	The ID of this Library. Type: int												
Type	The Library Type. Type: Custom String Default: "" Possible Values: <table border="1" data-bbox="568 525 1485 714"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Custom</td> <td>A custom library</td> </tr> <tr> <td>Custom-Sub</td> <td>A subfolder of a custom library</td> </tr> <tr> <td>System</td> <td>A system library (e.g. Basic, Global)</td> </tr> <tr> <td>User</td> <td>A user library</td> </tr> <tr> <td>User-Sub</td> <td>A subfolder of a user library</td> </tr> </tbody> </table>	Value	Description	Custom	A custom library	Custom-Sub	A subfolder of a custom library	System	A system library (e.g. Basic, Global)	User	A user library	User-Sub	A subfolder of a user library
Value	Description												
Custom	A custom library												
Custom-Sub	A subfolder of a custom library												
System	A system library (e.g. Basic, Global)												
User	A user library												
User-Sub	A subfolder of a user library												

Children:

None

VwTagsInfo

The VwTagsInfo object specifies the VisionWorks Tags, requires the VisionWorks license to be of use. There are 20 tags total.

Writeable Attributes:

Writeable Attribute	Description
Tag1Name	The name to assign to TAG1 Type: String Default: ""
Tag1Value	The value to assign to TAG1 Type: String Default: ""
Tag2Name	The name to assign to TAG2 Type: String Default: ""
Tag2Value	The value to assign to TAG2 Type: String Default: ""
Tag3Name	The name to assign to TAG3 Type: String Default: ""
Tag3Value	The value to assign to TAG3 Type: String Default: ""

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Tag4Name	The name to assign to TAG4 Type: String Default: ""
Tag4Value	The value to assign to TAG4 Type: String Default: ""
Tag5Name	The name to assign to TAG5 Type: String Default: ""
Tag5Value	The value to assign to TAG5 Type: String Default: ""
Tag6Name	The name to assign to TAG6 Type: String Default: ""
Tag6Value	The value to assign to TAG6 Type: String Default: ""
...Tag7...Tag19...	Same attributes with incrementing names
Tag20Name	The name to assign to TAG20 Type: String Default: ""
Tag20Value	The value to assign to TAG20 Type: String Default: ""

Read-only Attributes:

None

Children:

None

Perform Command Functions

This section is an overview of the functions that are called with the ls::perform command.

Abort

Description

This function aborts a test.

Syntax

```
ls::perform Abort [ -TestSession TEST_SESSION_HANDLE | -RunId RUN_ID ]
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform Abort -RunId 5  
%
```

AddCustomLibrary

Description

This function adds a custom library to the TAS.

Syntax

```
ls::perform AddCustomLibrary NAME < -writeableByAllUsers | -wa >
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform AddCustomLibrary "CustomLib2"  
% ls::perform AddCustomLibrary "CustomLib3" -wa
```

AddDmflInstance

Description

Adds an extra DMF InstanceGroup to a DMF class test case parameter for Instances and Assignments. The InstanceGroup will have one Row object for the mainflow instance and one Row for each associated subflows, if any. Running the validate function on the enclosing test session will update and correct the Rows based on the current definition of the mainflow DMF.

Syntax

```
ls::perform AddDmfInstance DDN_PATH_TO_DMF_CLASS_PARAMETER_HANDLE DMF_LIBRARY
DMF_NAME
```

Parameter	Description
DDN_PATH_TO_DMF_CLASS_PARAMETER_HANDLE	The handle to the Dmf Class test case parameter.
DMF_LIBRARY, DMF_NAME	The library ID and name that identifies the DMF. The DMF should have already been added to the parameter with the AddDmfMainflow function. That is, the library/name must match an existing Mainflow object in the Dmf class parameter.

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform AddDmfInstance $dmf_ $dmf_lib $dmf_name
% ls::perform AddDmfInstance $tc.parameters.Dmf 342 "FTP Mainflow DMF"
```

AddDmfMainflow

Description

Adds a (DMF) Mainflow to a Dmf class test case parameter and also adds the default InstanceGroup associated with this Mainflow for the DMF Instances and Assignments information. The InstanceGroup will have one Row object for the mainflow instance and one Row for each associated subflows, if any. Running the validate function on the enclosing test session will update and correct the Rows based on the current definition of the mainflow DMF.

Syntax

```
ls::perform AddDmfMainflow DDN_PATH_TO_DMF_CLASS_PARAMETER_HANDLE DMF_LIBRARY
DMF_NAME
```

Parameter	Description
DDN_PATH_TO_DMF_CLASS_PARAMETER_HANDLE	The handle to the Dmf Class test case parameter.
DMF_LIBRARY, DMF_NAME	The library ID and name that identifies the DMF. The DMF should not already be included in the parameter. That is, the library/name must not match an existing Mainflow object in the Dmf class parameter.

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform AddDmfMainflow $dmf_ $dmf_lib $dmf_name
% ls::perform AddDmfMainflow $tc.parameters.Dmf 342 "FTP Mainflow DMF"
```

AddSut

Description

This function adds a system under test (SUT) to the TAS.

Syntax

```
ls::perform AddSut SUT_INFO_HANDLE
```

Returns

The new SUT's id; throws an error if it fails.

Example

```
% set sut [ls::create SutInfo -name "SUT_1" -ip 192.168.100.88 \
           -ManagementIp 192.168.100.88 ]
java0xd
% ls::perform AddSut $sut
27
%
```

AddSimnovator

Description

This function adds a Simnovator to the TAS.

Syntax

```
ls::perform AddSimnovator SIMNOVATOR_INFO_HANDLE
```

Returns

The new Simnovator's id; throws an error if it fails.

Example

```
% set simnovator [ls::create SimnovatorInfo -name "SIMN_1" -address  
192.168.100.88 port 3002 -type UESim ]  
java0xd  
% ls::perform AddSinnovator $simnovator  
27  
%
```

AddVertex

Description

This function adds a Vertex to the TAS.

Syntax

```
ls::perform AddVertex VERTEX_INFO_HANDLE
```

Returns

The new Vertex's id; throws an error if it fails.

Example

```
% set vertex [ls::create VertexInfo -name "VETX_1" -address 192.168.100.88  
port 3000]  
java0xd  
% ls::perform AddVertex $vertex  
27  
%
```

AddTdf

Description

Adds a test data file to the TAS. Use the force flag to silently overwrite existing files on the TAS.

Syntax

```
ls::perform AddTdf SOURCE_FILE_PATHNAME LIBRARY_TYPE LIBRARY_VALUE < -force |  
-f >
```

Parameter	Description
LIBRARY_TYPE	The library identification, which can be one of the following: -customLibraryName -systemLibraryName -userLibraryName -libraryId

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LIBRARY_VALUE	The name or id of the library where the test suite items will be imported. Required for user created test suites, not allowed for official test suites.
SOURCE_FILE_PATHNAME	Full pathname of the source file to upload to the TAS.

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform AddTdf D:/mypath/myfilename.dat -userLibraryName sms
%
```

AddTs

Description

Adds a test server to the TAS.

Syntax

```
ls::perform AddTs -name NAME -Ip MANAGEMENT_IP
```

Returns

The new test server's id; throws an error if it fails.

Example

```
% ls::perform AddTs -name "TestServer1" -ip "192.168.0.88"
3
%
```

ApplyTsConfiguration

Description

This function applies a configuration (TsConfiguration) to a test server. The `-force` flag allows the configuration to be applied even when the test server is running or under other possible warning conditions.

Syntax

```
ls::perform ApplyTsConfiguration TS_CONFIGURATION_HANDLE PASSWORD < -force >
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set tsc [ls::perform RetrieveTsConfiguration -name "testserver2"]
java0x9
% ls::perform ApplyTsConfiguration $tsc cfguser
%
```

CommandTestCase

Description

This function directly commands a test case. For test cases running Sequencer test activity, use this function to pause, resume, and continue the command sequencer. Additionally, this function is provided as a troubleshooting and/or custom automation control to directly init, start, stop, and cleanup a test case. This function can be used to restart one or more test cases in a test session that had issues the first time it ran. Use this function with caution. Each command is only applicable when the test case is in a specific state(s). Refer to the *About Pass/Fail Criteria* section of the Online Help for details about test case states.

Syntax

```
ls::perform CommandTestCase [ -TestSession TEST_SESSION_HANDLE TS_INDEX \
    | -RunId RUN_ID ] TC_INDEX [ init | start | stop | cleanup |
    \pauseSequencer | resumeSequencer | continueSequencer ]
```

Parameter	Description
TEST_SESSION_HANDLE	The handle to the running test session.
RUN_ID	The run ID of the running test session.
TS_INDEX	The index of the test server (TsGroup) that the test case instance is a member of.
TC_INDEX	The index of the test case instance within its TsGroup.

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform CommandTestCase -TestSession $test 0 0 init
% ls::perform CommandTestCase -RunId 45 0 0 start
% ls::perform OnDemandCommand -TestSession $test 0 1 start
Invalid TC_INDEX, out of range
% ls::perform OnDemandCommand -TestSession $test 0 0 boguscommand
Invalid test case command
--Directly commands a test case in the given test session
Usage: perform CommandTestCase [ -TestSession TEST_SESSION_HANDLE \
    -RunId RUN_ID ] TS_INDEX TC_INDEX [ init | start | stop | cleanup |
    pauseSequencer | resumeSequencer | continueSequencer ]
%
```

Continue

Description

This function continues a test waiting in a WAIT step.

Syntax

```
ls::perform Continue -TestSession TEST_SESSION_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

NOTE: The command may block for up to 300ms if you send a Continue immediately after reaching the Wait step, and if the TAS has not yet reported the availability of the Continue action yet.

Example

```
% ls::perform Continue -TestSession $test
%
```

DeleteCustomLibrary

Description

This function deletes a custom library.

Syntax

```
ls::perform DeleteCustomLibrary CUSTOM_LIBRARY_INFO_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set lib [ls::query LibraryInfo -customLibraryName "CustomLib2"]
java0xe
% ls::perform DeleteCustomLibrary $lib
%
```

DeleteSut

Description

This function deletes a system under test.

Syntax

```
ls::perform DeleteSut SUT_INFO_HANDLE
```

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Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set sut [ls::query SutInfo -name "SUT_1"]
java0xe
% ls::perform DeleteSut $sut
%
```

DeleteSimnovator

Description

This function deletes a simnovator.

Syntax

```
ls::perform DeleteSimnovator SIMNOVATOR_INFO_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set simnovator [ls::query SimnovatorInfo -name "SIMN_1"]
java0xe
% ls::perform DeleteSimnovator $simnovator
%
```

DeleteVertex

Description

This function deletes a vertex.

Syntax

```
ls::perform DeleteVertex VERTEX_INFO_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set vertex [ls::query VertexInfo -name "VETX_1"]
java0xe
% ls::perform DeleteVertex $vertex
%
```


DeleteTdf

Description

Deletes a test data file on the TAS.

Syntax

```
ls::perform DeleteTdf LIBRARY_TYPE LIBRARY_VALUE TDF_NAME
```

Parameter	Description
LIBRARY_TYPE	The library identification, which can be one of the following: -customLibraryName -systemLibraryName -userLibraryName -libraryId
LIBRARY_VALUE	The name or id of the library where the test suite items will be imported. Required for user created test suites, not allowed for official test suites.
TDF_NAME	The name of the test data file.

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform DeleteTdf -libraryId -23 myfilename.dat  
%
```

DeleteTs

Description

This function deletes a test server.

Syntax

```
ls::perform DeleteTs TS_INFO_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set ts [ls::retrieve TsInfo -name "TestServer1"]  
java0xe  
% ls::perform DeleteTs $ts  
%
```

DumpClientLog

Description

This function displays the contents of the client command log and optionally writes the contents to a file along with the real-time logs stored on the client. Even when writing the contents to file, the contents are still returned by the function on success, however the last log displayed will be “Client Log Dumped To File.”

Syntax

```
ls::perform DumpClientLog < OUTPUTFILE_PATHNAME >
```

Returns

The contents of the command log, as one long string on success; throws an error if it fails.

Example

```
% ls::perform DumpClientLog D:/clientlogs.txt
14:23:53.881: Executing: ls_query SutInfo -name dsut4
14:23:53.896: Returned OK
14:23:53.896: Executing: ls_get java0x82d -name
14:23:53.896: Returned OK
14:23:53.896: Executing: ls_perform DeleteSut java0x82d
14:23:53.896: PC.deleteSut name=dsut4 ip=10.7.2.5
14:23:54.599: perform: OK
14:23:54.599: Returned OK
14:49:33.057: Executing: ls_get Client1 -CommandLog
14:50:57.545: Returned OK
14:52:27.455: Executing: ls_help perform DumpClientLog
14:52:27.455: Returned OK
14:55:54.324: Executing: ls_perform DumpClientLog D:/clientlogs.txt
14:55:54.340: Client Log Dumped To File
%
```

GeneratePerSessionReport

Description

This function initiates the generation of per-session results on the test servers. This function will only work if TS-Generated Per-Session results are enabled using the ReportOptions object. When used without the optional arguments, all sessions are generated. Otherwise, only the specific range of sessions is reported. The ResultFilesUpdated attribute of the test session can be used to determine when the result files are generated and ready for retrieval. Then, the RetrieveResults perform function can be used to download the files. The ResultFilesList attribute of the test session object will contain the list of filenames generated.

Syntax

```
ls::perform GeneratePerSessionReport [ -TestSession TEST_SESSION_HANDLE \  
    | -RunId RUN_ID ] < STARTING_INDEX COUNT >
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
%ls::perform GeneratePerSessionReport -TestSession $test  
%ls::perform GeneratePerSessionReport -RunId 32  
%
```

GeneratePortCaptureConfiguration

Description

This function generates the PortCaptureConfig hierarchy for a TestSession. This function must be executed before you can edit the PortCaptureConfig objects.

Syntax

```
ls::perform GeneratePortCaptureConfiguration -TestSession TEST_SESSION_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
%ls::perform GeneratePortCaptureConfiguration -TestSession $test  
%ls::config $test.PortCaptureConfig(0) -OnStart false  
%ls::config $test.PortCaptureConfig(1) -OnStart false
```

GenerateProcessAssignments

Description

This function generates the TsProcessAssignment hierarchy for a TestSession object if using Port Reservation feature. This function must be executed before you can edit the process-to-TcGroup assignments.

Syntax

```
ls::perform GenerateProcessAssignments -TestSession TEST_SESSION_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
%ls::perform GenerateProcessAssignments -TestSession $test
%ls::config $test.TsProcessAssignments(0).TcGroup(0) -ProcessIndex 0
%ls::config $test.TsProcessAssignments(1).TcGroup(0) -ProcessIndex 0
```

GenerateTacReport

Description

This function generates a TAC Report for a test. When the -allfiles argument is present, all TS generated result files will also be included in the report. Use -allfiles carefully, as some tests can have many large TS generated files. Only use it when you absolutely need all of the files.

Syntax

```
ls::perform GenerateTacReport TEST_SESSION_HANDLE FILE_PATHNAME < -overwrite
> < -allfiles >
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
%ls::perform GenerateTacReport $test "D:/tac"
%
```

GetDefaultHttpFlow

Description

Gets a Default Http Flow Template and optionally adds it to a test case's parameters collection.

Syntax

```
ls::perform GetDefaultHttpFlow INTERFACE FLOW_ID < PARAMETER_VARNAME
PARAMETERS_HANDLE >
```

Parameter	Description				
INTERFACE	The Interface of the Default Flow WebRTC only interface with Default Flow currently				
FLOW_ID	The HTTP Flow Template ID: Possible FlowId Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>999</td> <td>SIP Super-Flow (Regular Flow Mode)</td> </tr> </tbody> </table>	Value	Description	999	SIP Super-Flow (Regular Flow Mode)
Value	Description				
999	SIP Super-Flow (Regular Flow Mode)				
PARAMETER_VARNAME	Optional argument, the variable name of the parameter to add/set in the test case parameters handle.				
PARAMETERS_HANDLE	Optional argument, the handle to the test case Parameters collection.				

Returns

HTTP Flow handle on success; throws an error if it fails.

GetDefaultSipFlow

Description

Gets a Default SIP Flow Template and optionally adds it to a test case's parameters collection.

Syntax

```
ls::perform GetDefaultSipFlow FLOW_ID < PARAMETER_VARNAME PARAMETERS_HANDLE >
```

Parameter	Description						
FLOW_ID	The SIP Flow Template ID: Possible FlowId Values: <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>SIP or ISUP Script (Supplementary or Command Mode)</td> </tr> <tr> <td>999</td> <td>SIP Super-Flow (Regular Flow Mode)</td> </tr> </tbody> </table>	Value	Description	0	SIP or ISUP Script (Supplementary or Command Mode)	999	SIP Super-Flow (Regular Flow Mode)
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999	SIP Super-Flow (Regular Flow Mode)						
PARAMETER_VARNAME	Optional argument, the variable name of the parameter to add/set in the test case parameters handle.						
PARAMETERS_HANDLE	Optional argument, the handle to the test case Parameters collection.						

Returns

SIP Flow handle on success; throws an error if it fails.

Example

```
% ls::perform GetDefaultSipFlow 999 SipFlow $p_
% set flow [ls::perform GetDefaultSipFlow 999 SipFlow $p]
% set flow [ls::perform GetDefaultSipFlow 999]
```

GetHttpActionStep

Description

Gets an HTTP Script Action as a Step object.

Syntax

```
ls::perform GetHttpActionStep < INTERFACE_NAME > ACTION_ID
```

Parameter	Description																																																				
ACTION_ID	<p>The HTTP Action ID:</p> <p>Possible Action ID Values for Ut</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>1</td><td>OIP Retrieve Service Info (success, no auth)</td></tr> <tr><td>3</td><td>OIP Retrieve Service Info (success, with auth)</td></tr> <tr><td>5</td><td>OIP Retrieve Service Info (fail, no auth)</td></tr> <tr><td>6</td><td>OIP Retrieve Service Info (fail, with auth)</td></tr> <tr><td>7</td><td>OIP Update Service Info (success, no auth)</td></tr> <tr><td>8</td><td>OIP Update Service Info (success, with auth)</td></tr> <tr><td>9</td><td>OIP Update Service Info (fail, no auth)</td></tr> <tr><td>10</td><td>OIP Update Service Info (fail, with auth)</td></tr> <tr><td>12</td><td>OIP Delete Service Info (success, no auth)</td></tr> <tr><td>13</td><td>OIP Delete Service Info (success, with auth)</td></tr> <tr><td>14</td><td>OIP Delete Service Info (fail, no auth)</td></tr> <tr><td>15</td><td>OIP Delete Service Info (fail, with auth)</td></tr> <tr><td>16</td><td>OIR Retrieve Service Info (success, no auth)</td></tr> <tr><td>17</td><td>OIR Retrieve Service Info (success, with auth)</td></tr> <tr><td>18</td><td>OIR Retrieve Service Info (fail, no auth)</td></tr> <tr><td>19</td><td>OIR Retrieve Service Info (fail, with auth)</td></tr> <tr><td>20</td><td>OIR Update Service Info (success, no auth)</td></tr> <tr><td>21</td><td>OIR Update Service Info (success, with auth)</td></tr> <tr><td>22</td><td>OIR Update Service Info (fail, no auth)</td></tr> <tr><td>23</td><td>OIR Update Service Info (fail, with auth)</td></tr> <tr><td>24</td><td>OIR Delete Service Info (success, no auth)</td></tr> <tr><td>25</td><td>OIR Delete Service Info (success, with auth)</td></tr> <tr><td>26</td><td>OIR Delete Service Info (fail, no auth)</td></tr> <tr><td>27</td><td>OIR Delete Service Info (fail, with auth)</td></tr> <tr><td>28</td><td>TIP Retrieve Service Info (success, no auth)</td></tr> </tbody> </table>	Value	Description	1	OIP Retrieve Service Info (success, no auth)	3	OIP Retrieve Service Info (success, with auth)	5	OIP Retrieve Service Info (fail, no auth)	6	OIP Retrieve Service Info (fail, with auth)	7	OIP Update Service Info (success, no auth)	8	OIP Update Service Info (success, with auth)	9	OIP Update Service Info (fail, no auth)	10	OIP Update Service Info (fail, with auth)	12	OIP Delete Service Info (success, no auth)	13	OIP Delete Service Info (success, with auth)	14	OIP Delete Service Info (fail, no auth)	15	OIP Delete Service Info (fail, with auth)	16	OIR Retrieve Service Info (success, no auth)	17	OIR Retrieve Service Info (success, with auth)	18	OIR Retrieve Service Info (fail, no auth)	19	OIR Retrieve Service Info (fail, with auth)	20	OIR Update Service Info (success, no auth)	21	OIR Update Service Info (success, with auth)	22	OIR Update Service Info (fail, no auth)	23	OIR Update Service Info (fail, with auth)	24	OIR Delete Service Info (success, no auth)	25	OIR Delete Service Info (success, with auth)	26	OIR Delete Service Info (fail, no auth)	27	OIR Delete Service Info (fail, with auth)	28	TIP Retrieve Service Info (success, no auth)
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Ub	Ub Interface																	
CSC-4	CSC-4 Interface																	
Le	Le Interface																	
PC3PC8	PC3PC8 Interface																	
WebRTC	WebRTC Interface																	

Returns

HttpFlow Step handle on success; throws an error if it fails.

Example

```
% set step_ [ls::perform GetHttpActionStep Ut 43]
% ls::config $http_script_ -children-Step $step_
```

GetSipActionStep

Description

Gets a SIP Script Action as a Step object.

Syntax

```
ls::perform GetSipActionStep < INTERFACE_NAME > ACTION_ID
```

Parameter	Description																																
ACTION_ID	The SIP Action ID: Possible Action ID Values for Gm <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Call_Connect (success, no auth)</td> </tr> <tr> <td>3</td> <td>Call_Connect (fail, no auth)</td> </tr> <tr> <td>5</td> <td>Call_OnHold (success, no auth)</td> </tr> <tr> <td>6</td> <td>Call_OnHold (fail, no auth)</td> </tr> <tr> <td>7</td> <td>Call_OffHold (success, no auth)</td> </tr> <tr> <td>8</td> <td>Call_OffHold (fail, no auth)</td> </tr> <tr> <td>9</td> <td>Call_Disconnect (no auth)</td> </tr> <tr> <td>10</td> <td>Call_ForwardUnconditional (success, no auth)</td> </tr> <tr> <td>12</td> <td>Call_ForwardUnconditional (fail, no auth)</td> </tr> <tr> <td>22</td> <td>Call_Refer (success, no auth)</td> </tr> <tr> <td>23</td> <td>Call_Refer (fail, no auth)</td> </tr> <tr> <td>26</td> <td>Call_ConnectRefer (success, no auth)</td> </tr> <tr> <td>27</td> <td>Call_ConnectRefer (fail, no auth)</td> </tr> <tr> <td>41</td> <td>Call_Notify (success)</td> </tr> <tr> <td>42</td> <td>Call_Notify (fail)</td> </tr> </tbody> </table>	Value	Description	1	Call_Connect (success, no auth)	3	Call_Connect (fail, no auth)	5	Call_OnHold (success, no auth)	6	Call_OnHold (fail, no auth)	7	Call_OffHold (success, no auth)	8	Call_OffHold (fail, no auth)	9	Call_Disconnect (no auth)	10	Call_ForwardUnconditional (success, no auth)	12	Call_ForwardUnconditional (fail, no auth)	22	Call_Refer (success, no auth)	23	Call_Refer (fail, no auth)	26	Call_ConnectRefer (success, no auth)	27	Call_ConnectRefer (fail, no auth)	41	Call_Notify (success)	42	Call_Notify (fail)
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	78	Call_Refer (no subscription, success, no auth)																						
	102	Wait For Time																						
	103	Media_Start																						
	104	Media_Stop																						
	150	Provisional (unreliable)																						
	151	Provisional (reliable)																						
	200	Message (no auth)																						
	284	Registration (success, no auth)																						
	285	Registration (success, auth req)																						
	288	Call_AddMedia (success, no auth)																						
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Gm	Gm Interface																							
I2	I2 Interface																							
Nc	Nc Interface																							
Mw	Mw Interface																							
ISC	ISC Interface																							
Mx	Mx Interface																							
MI	MI Interface																							
ISC-CS	ISC CS Interface																							
Generic	Generic Interface																							
Mm	Mm Interface																							

Returns

SIP Step handle on success; throws an error if it fails.

Example

```
% set step_ [ls::perform GetSipActionStep Gm 103]
% ls::config $sip_script_ -children-Step $step_
% ls::config $step_.Role(0) -value2 A
% ls::config $step_.Role(1) -value2 B
% ls::config $step_.Action.Role(0) -value2 A
% ls::config $step_.Action.Role(1) -value2 B
```

ImportTestSuite

Description

Imports a Test Suite.

Note: Only one test suite import can happen at any given time on a TAS. An error will be returned if another test suite import is underway. The command will automatically wait approximately 7 seconds for the current import to complete. There is a -force option that will override the locking/protection mechanism; use with caution. Executing multiple imports at same time can result in corruption of data.

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Syntax

```
ls::perform ImportTestSuite TEST_SUITE_FILE_PATHNAME < LIBRARY_TYPE  
LIBRARY_VALUE \  
    < -prefix RENAME_PREFIX | -suffix RENAME_SUFFIX > < -clearSutParameters  
| -includeSuts> < -clearTestNodes > < -maintainTestServerIds > > < -force >
```

Parameter	Description
LIBRARY_TYPE	The library identification, which can be one of the following: -customLibraryName -systemLibraryName -userLibraryName -libraryId
LIBRARY_VALUE	The name or id of the library where the test suite items will be imported. Required for user created test suites, not allowed for official test suites.
RENAME_PREFIX	The string to be appended to the beginning (prefixed) of each item imported. Optional for user created test suites, not allowed for official test suites.
RENAME_SUFFIX	The string to be appended to the end (suffixed) of each item imported. Optional for user created test suites, not allowed for official test suites.
TEST_SUITE_FILE_PATHNAME	The full path to the test suite file (.ste)

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform ImportTestSuite C:/api/MyTestSuite.ste -userLibraryName sms -  
suffix "Imported1"  
%
```

ListLibraryItems

Description

Retrieves the listing of all items in a given library.

Syntax

```
ls::perform ListLibraryItems [ Dmf | TestCase | TestSession | Tdf |
MessageEditor ] \
    LIBRARY_TYPE LIBRARY_VALUE < -allInfo >
```

Parameter	Description
LIBRARY_TYPE	The library identification, which can be one of the following: -customLibraryName -systemLibraryName -userLibraryName -libraryId
LIBRARY_VALUE	The name or id of the library where the test suite items will be imported. Required for user created test suites, not allowed for official test suites.

Returns

The list of names or detailed information on success; throws an error if it fails. For Tdfs, the -allInfo/detailed information includes the name, size, and upload date; for other items, it includes the name, description, keywords, and last save date. For Test Cases, the -allInfo detailed information also includes the version. This can be used to determine the official test suite version installed.

Example

```
% ls::perform ListLibraryItems TestSession -customLibraryName TestLibrary
{Phase II #1} {Phase II #1 Node}
% ls::perform ListLibraryItems TestSession -libraryId -12 -AllInfo
{{Phase II #1} {Initial Integration tests} {TEST } {Tue Sep 12 14:37:37 EDT 2006}}
{{Phase II #1 Node} {} {} {Tue Sep 12 14:38:15 EDT 2006}}
% ls::perform listlibraryitems TestCase -libraryid -3 -allInfo
{{AAA Server Nodal} {AAA Server Testing.} {AAA Diameter NAS RADIUS } {Thu Feb 08
02:56:10 EST 2018} 16.6.0.1} {{AAA Server Node} {AAA Server Emulation.} {AAA Diameter
NAS Node RADIUS } {Thu Feb 08 02:56:16 EST 2018} 16.6.0.1} {{ASN Nodal} {ASN Testing.}
{ASN WiMAX } {Thu Feb 08 02:56:15 EST 2018} 16.6.0.1} {{ASN Node} {ASN Node
Emulation.} {ASN NodeWiMAX } {Thu Feb 08 02:56:12 EST 2018} 16.6.0.1} {{CDMA MSCe
Node} {CDMA MSCe Emulation.} {Alp CDMA Node RTP Voice } {Thu Feb 08 02:56:14 EST 2018}
16.6.0.1}
%
```

ModifyCustomLibrary

Description

This function changes the name or permissions for a custom library.

Syntax

```
ls::perform ModifyCustomLibrary CUSTOM_LIBRARY_INFO_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set lib [ls::query LibraryInfo -customLibraryName "CustomLib2" ]  
java0xe  
% ls::config $lib -name "CustomLib2b"  
% ls::perform ModifyCustomLibrary $lib  
%
```

ModifyDmfMainflow

Description

This function modifies a Mainflow object in a Dmf class test case parameter. It can be used to select a different DMF for a test case. It will attempt to maintain the InstanceGroup (Instances and Assignments) configuration. A similar change could be achieved by deleting the Mainflow (ls::delete) and then adding the new DMF with AddDmfMainflow, however the InstanceGroups would have to be reconfigured. When a Mainflow is modified to match another Mainflow within the same Dmf parameter (i.e. attempting to use the same mainflow DMF twice), the modified Mainflow is deleted, and its InstanceGroups are modified to associate with the matching Mainflow. Mainflows must be unique within a Dmf parameter. When the new Mainflow DMF contains fewer subflows than the current, the extra Row objects are just removed from all related InstanceGroup objects. When the new Mainflow contains more subflows, additional Row objects are added using the default values.

Syntax

```
ls::perform ModifyDmfMainflow DMF_CLASS_PARAMETER_HANDLE OLD_LIBRARY  
OLD_NAME \  
NEW_LIBRARY NEW_NAME
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform ModifyDmfMainflow $p.Dmf 342 "UDP DMF" 0 "TCP DMF"  
%
```

ModifySut

Description

This function changes the attributes of a system under test (SUT).

Syntax

```
ls::perform ModifySut SUT_INFO_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set sut [ls::query SutInfo -name "SUT_1"]  
java0xe  
% ls::config $sut -ManagementIp 192.168.100.22  
% ls::perform ModifySut $sut  
%
```

ModifySimnovator

Description

This function changes the attributes of a Simnovator.

Syntax

```
ls::perform ModifySimnovator SIMNOVATOR_INFO_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set simnovator [ls::query SimnovatorInfo -name "SIMN_1"]
java0xe
% ls::config $simnovator --Address 192.168.100.22
% ls::perform ModifySimnovator $simnovator
%
```

ModifyVertex

Description

This function changes the attributes of a Vertex.

Syntax

```
ls::perform ModifyVertex VERTEX_INFO_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set vertex [ls::query VertexInfo -name "VETX_1"]
java0xe
% ls::config $vertex --Address 192.168.100.22
% ls::perform ModifyVertex $vertex
%
```

ModifyTs

Description

This function changes the (management) ip of a test server.

Syntax

```
ls::perform ModifyTs TS_INFO_HANDLE
```

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Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% set ts [ls::retrieve TsInfo -name "TestServer1"]
java0xe
% ls::config $ts -Ip 192.168.100.22
% ls::perform ModifyTs $ts
%
```

OnDemandCommand

Description

This function executes a test case (TC) On Demand Command. An On Demand Command is a function that can be executed by a running test case on the test server. Each type of (basic) test case that supports On Demand Commands has its own set of commands that are available to the user.

For a list of the available On Demand Commands for a given test case, execute the function without the last two arguments, TC_COMMAND_NAME and ARG_LIST. For more information about each TC Command, search the online Help file for the specific test case or TC command name.

Syntax

```
ls::perform OnDemandCommand -TestSession TEST_SESSION_HANDLE < -LogExecution
> TS_INDEX \
    TC_INDEX <TC_COMMAND_NAME <ARG_LIST>>
```

Parameter	Description
TEST_SESSION_HANDLE	The handle to the running test session.
TS_INDEX	The index of the test server (TsGroup) that the test case instance is a member of.
TC_INDEX	The index of the test case instance within its TsGroup.
TC_COMMAND_NAME	The name of the test case that On Demand Command will execute.
ARG_LIST	A Tcl list, e.g. { Operation Rate Arg3 }, of the arguments for the test case command. Tcl hint: When passing variables, you should use the list command, e.g. [list \$var1 two \$var3] to ensure variables are dereferenced.

Returns

Nothing (empty string) on success; throws an error if it fails. Some error conditions can be helpful to determine the correct usage:

When a valid TC_COMMAND_NAME is provided but the ARG_LIST is not provided, or the ARG_LIST contains an invalid first argument (Operation), a list of all variations of the requested TC Command will be returned.

When a valid TC_COMMAND_NAME and an ARG_LIST with a valid first argument (Operation) is provided, but the remaining number of arguments do not match a valid signature, a list of all variations of the TC Command with the given Operation will be returned. When neither TC_COMMAND_NAME or ARG_LIST is provided, a listing of all supported TC commands will be returned. Refer to some of the examples below.

For confirmation, check the test session run log, i.e. -log or -unviewedrunlogs attributes, for messages from the test server. Adding the -LogExecution will cause the test server to log more information about the execution of the command.

Example

```
% ls::perform OnDemandCommand -TestSession $test 0 0 ControlBearer { SendBRI
5.5 1 22 1 11 }
% ls::perform OnDemandCommand -TestSession $test 0 1 UnknownCommand { one two
three }
Invalid TC_INDEX, out of range
% ls::perform OnDemandCommand -TestSession $test 0 0 UnknownCommand [list one
$var2 two]
Command UnknownCommand not supported by this test case
% ls::perform OnDemandCommand -TestSession $test 0 0 ControlBearer {
ModifyBearer }
Missing or invalid On Demand Command arguments,
valid command/operation signatures:
ControlBearer { "PdnConnect|PdnDisconnect|EmergPdnConnect" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX" "DEFAULT_BEARER_INDEX"
}
ControlBearer { "Attach|Detach|Reset|S1Release|EmergAttach" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX" }
ControlBearer { "S1Handover|X2Handover|TauHandover" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX" "TARGET_ENODEB_INDEX" }
ControlBearer { "S1Handover|X2Handover|TauHandover" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX"
"STARTING_TARGET_NODE_INDEX" "ENDING_TARGET_NODE_INDEX" }
WITH NO ARGUMENTS:
% ls::perform OnDemandCommand -TestSession $test 0 0 ControlBearer
Missing On Demand Command arguments,
valid command/operation signatures:
ControlBearer { "PdnConnect|PdnDisconnect|EmergPdnConnect" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX" "DEFAULT_BEARER_INDEX"
}
ControlBearer { "Attach|Detach|Reset|S1Release|EmergAttach" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX" }
ControlBearer { "S1Handover|X2Handover|TauHandover" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX" "TARGET_ENODEB_INDEX" }
ControlBearer { "S1Handover|X2Handover|TauHandover" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX"
"STARTING_TARGET_NODE_INDEX" "ENDING_TARGET_NODE_INDEX" }
WITH NO COMMAND:
% ls::perform OnDemandCommand -TestSession $test 0 0
Missing On Demand Command,
valid commands for this test case:
```


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```
ControlBearer { "PdnConnect|PdnDisconnect|EmergPdnConnect" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX" "DEFAULT_BEARER_INDEX"
}
ControlBearer { "Attach|Detach|Reset|S1Release|EmergAttach" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX" }
ControlBearer { "S1Handover|X2Handover|TauHandover" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX" "TARGET_ENODEB_INDEX" }
ControlBearer { "S1Handover|X2Handover|TauHandover" "RATE"
"STARTING_SUBSCRIBER_INDEX" "ENDING_SUBSCRIBER_INDEX"
"STARTING_TARGET_NODE_INDEX" "ENDING_TARGET_NOD
E_INDEX" }
```

WITH VALID COMMAND AND OPERATION, BUT WRONG ARGUMENTS:

```
% ls::perform OnDemandCommand -TestSession $test 0 0 ControlBearer { Detach }
Command ControlBearer, with operation Detach does not support 1 arguments,
valid command/operation signatures:
```

```
ControlBearer { "Detach" "RATE" "STARTING_SUBSCRIBER_INDEX"
"ENDING_SUBSCRIBER_INDEX" }
```

```
% ls::perform OnDemandCommand -TestSession $test 0 0
```

Missing On Demand Command, Valid commands for this test case:

```
ControlBearer { "Operation" "Starting IMSI Index" "Ending IMSI Index"
"Starting IMSI Dedicated Index"
"Ending IMSI Dedicated Index" }
```

```
% ls::get $test_ -unviewedrunlogs
```

```
log: 07/02 10:54:30.617:TAS: Successfully sent on demand command request:
ControlBearer
```

PortCapture

Description

This function can start and stop port capturing and retrieve the capture files. The retrieve option will retrieve any and all port capture files that are available. You cannot call this function until after the test session has started. If you want the pcap to start automatically with the test session, you must use the TestSession's PortCaptureConfiguration object. There are two forms, one for ACTS (Associated Captures with Test Session) and one for legacy capture.

For Legacy Capture:

The capture files' names will follow the pattern [DATE/TIME]__TS-[NAME]__eth[n]_capture.pcap or [DATE/TIME]__TS-[NAME]__wlan[n]_capture.pcap, e.g. (03-04_09.43.37.AM__TS-testserver1__eth1_capture.pcap). In (older) test server systems that do not run in User Mode, the port capture is done globally on all ports and the resulting file is named [DATE/TIME]__TS-[NAME]__eth_capture.pcap.

For ACTS:

The capture files' names will follow the pattern [DATE/TIME]__ts[INDEX]_eth[n]_capture.pcap or [DATE/TIME]__ts[INDEX]_wlan[n]_capture.pcap, e.g. (03-04_09.43.37.AM__tc0_eth1_capture.pcap). Also, with ACTS, all PCAP files are added to the normal Test Session results and can be retrieved using RetrieveResults perform function. Refer to the online Help for more details about the features. Legacy mode is a deprecated option; ACTS is on by default in all new test sessions and is the preferred method.

Increasing the ApiOptions LogLevel to \$ls::LOG_INFO will cause the API to log the files that it transfers. If the port capture is not stopped, or if the test server has not written the file, no file will be retrieved, and no error is returned. The filenames should be unique, but matching files in the target directory are overwritten.

If you attempt to start/stop capture in the ACTS form (using TEST_HANDLE TS_INDEX), and the test is not using ACTS, you will get an error. If you attempt to start/stop capture in the legacy form (using TS_INFO_HANDLE) and there is no test running legacy, you will get an error. When starting captures from Tcl API using the ACTS form, the TAS will use the Capture Configuration that is set in the test session. For the Legacy form, it will always use the default configuration.

Syntax

```
ls::perform PortCapture [ TS_INFO_HANDLE | TEST_HANDLE TS_INDEX ] \
    PORT_NAME [ Start | Stop | Retrieve [TARGET_DIRECTORY] <-confirm> ]
```

Returns

For Start and Stop, Nothing (empty string) on success; throws an error if it fails.

For Retrieve without -confirm, a list of files transferred, or nothing (empty string) if no files were transferred; throws an error if it fails.

For Retrieve with -confirm, a list of files transferred, throws an error if it fails, including if no files were found for transfer.

Example

```
%ls::perform PortCapture $test 0 eth2 Start
...
% ls::perform PortCapture $test 0 eth2 Stop
...
% ls::perform PortCapture $test 0 eth2 Retrieve /home/user/capturefiles
%
% ls::perform PortCapture $test 0 eth2 Retrieve /home/user/capturefiles -
confirm
% { eth2_capture.pcap }
```

RecycleTs

Description

This function recycles a test server

Syntax

```
ls::perform RecycleTs [-name TS_NAME | -id TS_ID]
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
%ls::perform RecycleTs -name testserver1
%
```

RetrieveResults

Description

This function retrieves files from the results area on the TAS. The TEST_SESSION_HANDLE version will return all files associated with the test but should only be run after the test has completed or when you know at least one file has been generated for the test. The optional `-PrefixWithPassFail` argument will cause the downloaded filenames to be prefixed with the Pass/Fail Criteria Status, e.g. PASSED_ or FAILED_. The `-File FILENAME` version will return a specific file, which could include port capture files. You can only retrieve files from your own results area, not other users' areas. These are the same files that you can access from the results website.

Syntax

```
ls::perform RetrieveResults [ TEST_SESSION_HANDLE < -PrefixWithPassFail > | -
File FILENAME ] TARGET_DIRECTORY
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
%ls::perform RetrieveResults $test "D:/"  
%ls::perform RetrieveResults $test -PrefixWithPassFail "D:/"
```

RetrieveTdf

Description

Retrieves a test data file from the TAS. Use the force flag to silently overwrite existing local file.

Syntax

```
ls::perform RetrieveTdf LIBRARY_TYPE LIBRARY_VALUE TDF_NAME DEST_DIRECTORY <  
-force | -f >
```

Parameter	Description
DEST_DIRECTORY	The local directory from which to download the test data file.
LIBRARY_TYPE	The library identification, which can be one of the following: -customLibraryName -systemLibraryName -userLibraryName -libraryId
LIBRARY_VALUE	The name or id of the library where the test suite items will be imported. Required for user created test suites, not allowed for official test suites.
TDF_NAME	The name of the test data file to retrieve

Returns

Nothing (empty string) on success; returns as error string if it fails.

Example

```
% ls::perform RetrieveTdf -systemLibraryName Global myfilename.dat D:/mypath  
-force  
%
```

RefreshCriteria

Description

This function refreshes the descriptions and Start/Stop/Expire/Reset indexes of the pass/fail criteria. This function will be executed as part of the Validate function and is provided separately, in case the user wants to see intermediate updates on criteria changes.

Syntax

```
ls::perform RefreshCriteria TEST_SESSION_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform RefreshCriteria $test
%
```

RetrieveTsConfiguration

Description

This function retrieves the configuration object (TsConfiguration) for a test server.

Syntax

```
ls::perform RetrieveTsConfiguration [ -id TS_ID | -name TS_NAME ] PASSWORD
```

Returns

A valid TsConfiguration object handle on success; throws an error if it fails.

Example

```
% set tsc [ls::perform RetrieveTsConfiguration -name "testserver2" cfguser]
java0x9
%
```

Run

Description

This function starts a test. Any test that is started from the API must be deleted when it has completed and is no longer needed. From the Tcl API, re-using the same TEST_SESSION_HANDLE will automatically delete previous test runs. Users should use the ls::delete command to fully clean up their completed tests. Alternatively, use the AutoDeleteTimeoutMins flag to prevent leftover tests.

Syntax

```
ls::perform Run -TestSession TEST_SESSION_HANDLE
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform Run -TestSession $test
%
```

SaveAsTcl

Description

This function saves a Tcl script that, when sourced, recreates an object. The generated script will set a test session to a variable called “test_”, a dmf to “dmf_” and test case to “tc_”. After you source the file, you can access the object using this variable. If you want to work with multiple files, you can just assign the SaveAsTcl script variable to your own variable after you source each file. Then, each subsequently sourced script will not overwrite the previous object.

Test Session, DMF and ME objects can also be saved as Tcl from the GUI. On the respective window, click Shift-Alt-A to generate a Tcl Script.

Syntax

```
ls::perform SaveAsTcl [ TEST_SESSION_HANDLE | DMF_HANDLE | ME_HANDLE ]
FILE_PATHNAME
```

```
ls::perform SaveAsTcl [ TEST_CASE_HANDLE | TEST_CASE_DDN_PATH ]
FILE_PATHNAME
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
%ls::perform SaveAsTcl $test "D:/mytest.tcl"  
%ls::perform SaveAsTcl $test2 "D:/mytest2.tcl"  
%source D:/mytest.tcl  
%set myTest $test_  
%source D:/mytest2.tcl  
%set myTest2 $test_  
%
```

SaveReport

Description

This function saves a test report.

Syntax

```
ls::perform SaveReport TEST_SESSION_HANDLE REPORT_OPTIONS_HANDLE \  
FILE_PATHNAME < -overwrite >
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
%set options [ls::create ReportOptions -format $ls::FORMAT_CSV]  
%ls::perform SaveReport $test $options "D:/myreport"  
%
```

ScanWlan

Description

This function triggers the test server to scan a wlan radio for information on available APs.

Syntax

```
ls::perform ScanWlan TS_INFO_HANDLE WLAN_NAME
```

Returns

A multi-line string of comma separated values (CSV) with the field names in the first line.

Example

```
%set ts [ls::retrieve TsInfo -name "TestServer1"]
% ls::perform ScanWlan $ts wlan1
SSID,BSSID,SignalStrength(dBm),Channel,Frequency(MHz)
Web-Auth_Raymond,f4:0f:1b:fa:d9:18,-35,6,2437
WLC5500_PSK,f4:0f:1b:fa:d9:14,-35,6,2437
Landslide-BDC-Test,f4:0f:1b:fa:d9:16,-35,6,2437
spirent_MLB3_PEAP,f4:0f:1b:fa:d9:11,-35,6,2437
WBA-Spirent-Passpoint,f4:0f:1b:fa:d9:15,-34,6,2437
Landslide,f4:0f:1b:fa:d9:10,-34,6,2437
spirent_MLB3_802,f4:0f:1b:fa:d9:12,-35,6,2437
spirent_MLB3_TEST,f4:0f:1b:fa:d9:13,-34,6,2437
spirent_MLB3_TEST,f4:0f:1b:fa:d9:1c,-44,36,5180
Landslide,f4:0f:1b:fa:d9:1f,-45,36,5180
Web-Auth_Raymond,f4:0f:1b:fa:d9:17,-45,36,5180
WLC5500_PSK,f4:0f:1b:fa:d9:1b,-46,36,5180
spirent_MLB3_802,f4:0f:1b:fa:d9:1d,-44,36,5180
Landslide-BDC-Test,f4:0f:1b:fa:d9:19,-44,36,5180
spirent_MLB3_PEAP,f4:0f:1b:fa:d9:1e,-45,36,5180
WBA-Spirent-Passpoint,f4:0f:1b:fa:d9:1a,-46,36,5180
%
```

ShowLastCommandDetails

Description

This function displays the progress history for the last command that required communication with the TAS. This includes, retrieve, save, reconnect, and some functions for the perform command.

Syntax

```
ls::perform ShowLastCommandDetails
```

Returns

String showing progress history on success; throws an error if it fails.

Example

```
% % ls::perform ShowLastCommandDetails
Action: OpenTsInfoAction id=1 name=Coast50 10.71.30.50
13:56:33.721:0% : Progress for Retrieving TsInfo:id=1 name=Coast50
10.71.30.50
13:56:34.065:0% : Retrieved
13:56:34.065:100% : done
Result: Success
%
```

ShowLast10CommandDetails

Description

This function displays the progress history for the last ten (10) commands that required communication with the TAS. This includes retrieve, save, reconnect, and some functions for the perform command.

Syntax

```
ls::perform ShowLastCommandDetails
```

Returns

String showing progress history on success; throws an error if it fails.

Example

```
% % ls::perform ShowLastCommandDetails
Action: OpenTsInfoAction id=1 name=Coast50 10.71.30.50
13:56:33.721:0% : Progress for Retrieving TsInfo:id=1 name=Coast50
10.71.30.50
13:56:34.065:0% : Retrieved
13:56:34.065:100% : done
Result: Success
%
```

Stop

Description

This function stops a test.

Syntax

```
ls::perform Stop [ -TestSession TEST_SESSION_HANDLE | -RunId RUN_ID ]
```

Returns

Nothing (empty string) on success; throws an error if it fails.

Example

```
% ls::perform Stop -TestSession $test
%
```

Update

Description

This function updates up to three (3) dynamic parameters for a running test. The update function only changes the parameter(s) on the TAS and test servers where the test is running. It will not affect the local parameters, i.e. that you would query using `ls::get`. If you want to change the local parameters, you must use `ls::config`, and this only affects local parameters, not the running test.

There are only a few parameters that can be modified when a test is running. For test cases, this includes the StartRate, DisconnectRate, MobilityRate, IdleTime, and HoldTime. For DMFs, you can only change the Transaction Rate; you do this via the TrafficRate variable. You can also Pause/Resume mainflow DMFs by setting the Paused variable to true or false appropriately. You can change the TotalTransactions of mainflow DMFs by setting the loopCount variable, but only when the DMF is Paused.

The update format matches that from the CLI API, where a tcl namespace, based on the test case and/or DMF instance, is used to identify the parameter: `tsN::tcN::Dmf_N::subN::VARIABLE=VALUE`.

Syntax

```
ls::perform Update [-TestSession TEST_SESSION_HANDLE | -RunId RUN_ID ] \  
UPDATE1<</UPDATE2>/UPDATE3>
```

UPDATE format: `tsX::tcY::Varname=Value`, up to 10 parameters separated with `/`.

To change the `ts0::tc1` test case's StartRate parameter and the Traffic Rate of the first subflow in the first DMF on the `ts0::tc0` test case use `"ts0::tc1::StartRate=55.5/ts0::tc0::Dmf_0::sub0::TrafficRate=2.0"`. To Pause/Start DMF traffic, you set the Paused variable, `"ts0::tc0::Dmf_0::Paused=true"` or `"ts0::tc0::Dmf_0::Paused=false"`

Refer to the online Help to determine which parameters are updatable; here is a list of the most common parameters:

Parameter	Applies to	Can be Modified When
tsX::tcY::StartRate	Test Cases not using Sequencer or Command Mode	Test Case has been initialized
tsX::tcY::DisconnectRate	Test Cases not using Sequencer or Command Mode	Test Case has been initialized
tsX::tcY::MobilityRate	Test Cases using mobility	Test Case has been initialized
tsX::tcY::IdleTime	Test Cases using session loading	Anytime
tsX::tcY::HoldTime	Test Cases using session loading	Anytime
tsX::tcY::Dmf_Z::TrafficRate txX::tcY::Dmf_Z::subA::TrafficRate	Mainflow and subflow DMFs	Anytime
tsX::tcY::Dmf_Z::Paused	Mainflow DMFs	Test Case is in RUNNING state
tsX::tcY::Dmf_Z::loopCount	Mainflow DMFs	DMF is Paused
tsX::tcY::_SessionsPct_	Test Cases doing Data Tuning	Test Case has been initialized
tsX::tcY::_DataThroughputPct_	Test Cases doing Data Tuning	Test Case has been initialized

Returns

Nothing (empty string) on success; throws an error if it fails.

The error string may provide individual results for each UPDATE argument, separated by the '/' character, e.g. OK/ERROR/OK, ERROR/OK. If there are multiple UPDATE arguments, and they are each successful, the function still returns nothing. If only one fails, then you get the error string, and each individual UPDATE's status is indicated.

For confirmation, check the test session run log, i.e. -log or -unviewedrunlogs attributes, for messages from the test server.

Example

```
% ls::perform Update -TestSession $test \  
    ts0::tc1::StartRate=550/ts0::tc1::DisconnectRate=500  
% ls::perform Update -TestSession $test \  
    ts0::tc1::StartRate=550/ts0::tc1::DisconnectRate=11500  
% OK/ERROR  
% ls::perform update -runid 18 ts0::tc0::Dmf_0::Paused=false  
% ls::get $test_ -unviewedrunlogs  
log: 07/02 10:54:22.626:ts0(Coast80)[0]:tc0: Resuming traffic for DMF 0  
log: 07/02 10:54:22.628:TAS: Successfully Sent: ts0::tc0::Dmf_0::Paused=false  
% ls::perform update -runid 18 ts0::tc0::Dmf_0::Paused="true"  
ERROR  
% ls::get $test_ -unviewedrunlogs
```

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```
error: 07/02 10:54:30.619:ts0(Coast80)[0]:tc0: Invalid value for Paused parameter
```

```
log: 07/02 10:54:30.617:TAS: Sent: ts0::tc0::Dmf_0::Paused="true", TS returned: ERROR
```

Validate

Description

This function validates a test session or DMF is ready to be saved and/or run. Part of validation includes upgrading older test cases and setting default values for missing parameters.

Syntax

```
ls::perform Validate -TestSession TEST_SESSION_HANDLE  
ls::perform Validate -Dmf DMF_HANDLE  
ls::perform Validate -ME ME_HANDLE
```

Returns

“Valid” on success, “Invalid” if the object is invalid, “Warning” if there were warnings, or other error string if validation fails. TestSession objects also have information in the ErrorsAndWarnings attribute after each Validate call and the HasError attribute will be set accordingly.

Example

```
%ls::perform Validate -TestSession $test  
Invalid  
% ls::get $test -ErrorsAndWarnings  
{  
Network Devices - HA Node Invalid base IP or number of nodes  
Test case '' ts0tc0 requires user intervention} {} {} Invalid-Not-Ready-To-Run-Or-Save  
%  
  
%ls::perform Validate -TestSession $test2  
Valid  
% ls::get $test -ErrorsAndWarnings  
{ } {} {} Valid-Ready-To-Run-Or-Save  
  
% ls::perform Validate -TestSession $test  
Warnings  
% ls::get $test -ErrorsAndWarnings  
{
```

Spirent Landslide

Tcl API Object and Perform Function Reference

WiMAX - WiMAX Forum Version upgraded to default

WiMAX - Vendor Variant upgraded to Variant 1} {} {} Valid-Ready-To-Run-Or-Save

%7