

# ixnet

**Library scope:** global  
**Named arguments:** supported

## Introduction

provides functions for IxNetwork

To use IxNetwork module, a IxNetwork TCL server should be started properly.

RENAT will connect to the App server and control the test ports. Test files and result will be inside the RENAT server.

In order to run RENAT test case with *IxLoad*, the *TCLServer* must be activated with *Administrator* privileges on the Ixia App server.

**Notes:** Ignore the *self* parameters when using those keywords.

## Shortcuts

**Add Port** · **Add Quicktest** · **Apply Traffic** · **Change Frame Rate** · **Change Frame Rate Dynamic** · **Change Frame Size** · **Close** · **Collect All Data** · **Collect Data** · **Get All Test Result** · **Get Quicktest List** · **Get Quicktest Result** · **Get Quicktest Result Path** · **Get Test Composer Result** · **Get Test Report** · **Get Test Result** · **Load And Start Traffic** · **Load Config** · **Load Traffic** · **Loss From File** · **Ping** · **Regenerate** · **Reset Config** · **Run Quicktest** · **Set All Traffic Item** · **Set Bgp Items** · **Set Bgp Neighbor** · **Set Capture Port** · **Set Traffic Item** · **Should Be Pingable** · **Start Capture** · **Start Protocol** · **Start Test Composer** · **Start Traffic** · **Stop All Protocols** · **Stop And Save Capture** · **Stop Quicktest** · **Stop Test Composer** · **Stop Traffic** · **Wait Until Connected**

## Keywords

Keyword	Arguments	Documentation
<b>Add Port</b>	<i>self</i> , <i>force=True</i> , <i>time_out=2m</i> , <i>learn_time=2m</i>	<p>Add ports using the information from active local config</p> <ul style="list-style-type: none"><li><code>time_out</code> is the wait time until port is connected (default is 2m)</li><li><code>learn_time</code> is the time waiting for arp to be learned (default is 2m)</li></ul> <p>Sample of local config  tester:</p> <pre>tester:   device: ixnet03_8009   config: quicktest.ixncfg   real_port:     - chassis: 10.128.4.41       card: 4       port: 3       ip: 10.100.11.2       mask: 24       gw: 10.100.11.1     - chassis: 10.128.4.41       card: 4</pre> <p>port: 4</p> <pre>ip: 10.100.14.2 mask: 24 gw: 10.100.14.1</pre>
<b>Add Quicktest</b>	<i>self</i> , <i>name</i> , <i>test_type=rfc2544throughput</i> , <i>tx_mode=interleaved</i> , <i>clear_all=True</i>	<p>Create a new Quicktest with default value</p> <p>Type could be one of following: <code>rfc2544throughput</code>, <code>rfc2544frameLoss</code>, <code>rfc2544back2back</code>. Use Tester.<a href="#">Load Config</a> to load a customized quicktest</p> <p>When <code>clear_all</code> is True, any existed quicktests will be cleared.</p> <p>Transmit mode <code>tx_mode</code> takes following values: <code>interleaved</code> (default) or <code>sequential</code>. The mode should be identical with the transmit mod of the ports.</p> <p><b>Notes:</b> The keyword <b>does not</b> create necessary ports. It should be used with a existed configuration by Tester.<a href="#">Load Config</a> or Tester.<a href="#">Add Port</a> keyword.</p>
<b>Apply Traffic</b>	<i>self</i> , <i>refresh=True</i>	<p>Applies the current traffic configuration</p> <p><code>refresh</code>: Refreshed the learned information before apply the traffic or not <b>Note:</b> This is a blocking command</p>
<b>Change Frame Rate</b>	<i>self</i> , <i>value</i> , <i>pattern=.*</i>	<p>Changes the frame rate</p> <p>Parameter:</p> <ul style="list-style-type: none"><li><code>value</code>: value to set. Depends on the current configuration, this could be <code>percent line rate</code> or <code>bit per second</code> etc.</li><li><code>traffic_pattern</code>: a regular expression to identify traffic item name, default is everything <code>.*</code></li></ul>
<b>Change Frame Rate Dynamic</b>	<i>self</i> , <i>value</i> , <i>pattern=.*</i>	<p>Changes the traffic flow rate on-fly</p> <p>No need to stop the running traffic to change the rate</p> <p>Parameter:</p> <ul style="list-style-type: none"><li><code>value</code>: value to set. Depend on the current configuration, this could be <code>percent line rate</code> or <code>bit per second</code> etc.</li><li><code>pattern</code>: a regular expression to identify traffic item name, default is everything <code>.*</code></li></ul>
<b>Change Frame Size</b>	<i>self</i> , <i>type</i> , <i>value</i> , <i>pattern=.*</i>	<p>Changes the frame size</p>

Size		<p>Parameter:</p> <ul style="list-style-type: none"> <li>■ <code>type</code>: could be <code>fixed size</code>, <code>increment_from</code>, <code>increment_step</code> or <code>increment_to</code></li> <li>■ <code>value</code>: value to set</li> <li>■ <code>traffic_pattern</code>: a regular expression to identify traffic item name, default is everything <code>.*</code></li> </ul>
Close	<code>self</code>	Disconnects the current tester client
Collect All Data	<code>self, prefix=stat_</code>	Deprecated. Use
Collect Data	<code>self, view, prefix=stat_</code>	Deprecated. Use <a href="#">Get Test Result</a>
Get All Test Result	<code>self, prefix=stat_</code>	<p>Collects all Ixia traffic data after traffic is stopped.</p> <p>Results are CSV files that are stored in <code>result</code> folder. The prefix <code>prefix</code> is appended to the original view name</p>
Get Quicktest List	<code>self</code>	Returns current loaded Quicktest list
Get Quicktest Result	<code>self, test_index=-1, prefix=, enable_all=True</code>	<p>Get the result.csv file from the latest Quicktests</p> <p><code>test_index</code> is a index of the current Quicktest. <code>-1</code> means that last one.</p>
Get Quicktest Result Path	<code>self, test_index=-1</code>	<p>Returns the path of the newest run of a Quicktest</p> <p><code>test_index</code> is a index of the current Quicktest. <code>-1</code> means that last one.</p>
Get Test Composer Result	<code>self, result_file=composer.log</code>	Get the result of test composer script
Get Test Report	<code>self, local_name=ixnet_report.pdf, enable_all=True</code>	<p>Generates and get report of the current active test in PDF format</p> <p><code>local_name</code>: name of the report on local machine. Default is <code>ixnet_report.pdf</code></p>
Get Test Result	<code>self, view, prefix=stat_</code>	<p>Collects traffic data of a <code>view</code> and export to a CSV file in <code>result</code> folder</p> <p>Currently, supported views are:</p> <p>Port Statistics, Global Protocol Statistics, BGP Aggregated Statistics, BGP Aggregated State Counts, OSPF Aggregated Statistics, OSPF Aggregated State Counts, OSPFv3 Aggregated Statistics, OSPFv3 Aggregated State Counts, L2-L3 Test Summary Statistics, Flow Statistics, Flow Detective, Data Plane Port Statistics, User Defined Statistics, Traffic Item Statistics</p> <p>Result were store as CSV files in <code>result</code> folder. If there is no valid data, view will be silently ignored</p> <p>The prefix <code>prefix</code> is appended to the view name for the CSV file.</p>
Load And Start Traffic	<code>self, wait_time1=10s, wait_time2=10s</code>	Combines <a href="#">Load Traffic</a> and <a href="#">Start Traffic</a> to one keyword.
Load Config	<code>self, config_name=, wait_time=2m, wait_time2=2m, apply=True, protocol=True, force=True, wait_time3=30s</code>	<p>loads traffic configuration, applies and start protocol if necessary.</p> <p>The config file name was defined in the <code>local.yaml</code> which is a Ixia Network configuration file and located in the <code>config</code> folder of the test.</p> <p>The keyword remap the vports to real port when data is specified in the local configuration file. For some reasons, the txMode is cleared when remapping happens. Use <code>tx_mode</code> to set the TxMode of the remapped ports.</p> <p>Parameters:</p> <ul style="list-style-type: none"> <li>■ <code>apply</code>: applies traffic when <code>True</code> otherwise</li> <li>■ <code>protocol</code>: starts all protocols when <code>True</code> otherwise</li> <li>■ <code>force</code>: force to reclaim the ports when <code>True</code> otherwise</li> <li>■ <code>wait_time</code>: wait time after applying protocols</li> <li>■ <code>wait_time2</code>: maximum wait time befor all ports become available. In common case, this is calculated automatically so user does not need to change this value.</li> <li>■ <code>wait_time3</code>: default waiting time after config file is loaded (30s)</li> </ul> <p>More information about ports could be define in <code>real_port</code> section like this:</p> <pre># tester information tester:    tester:     device: ixnet03_8009     config: bgp.ixncfg     real-port:       - chassis: 10.128.4.41         card: 4         port: 7         media: fiber         tx_mode: interleaved</pre> <p>Configurable port parameters ares:</p> <ul style="list-style-type: none"> <li>■ <code>tx_mode</code>: <code>sequential</code> or <code>interleaved</code>(default)</li> <li>■ <code>media</code>: <code>copper</code> or <code>fiber</code> ( <b>Note</b>: no default value)</li> </ul> <p>See <a href="#">Common</a> for more details about the yaml configuration files.</p>
Load Traffic	<code>self, wait_time=2m, wait_time2=2m, apply=True, protocol=True, force=True, tx_mode=interleaved</code>	
Loss From File	<code>self,</code>	Returns <code>packet loss</code> by milliseconds and delta frame.

	<code>file_name=Flow_Statistics.csv, tx_frame_i=3, frame_delta_i=5, time1_i=23, time2_i=24</code>	The calculation should be performed when traffic is stopped. The calculation supposed traffic is configured by frame per second												
Ping	<code>self, dst_ip, src_port_index=0, src_intf_index=0</code>	<p>Ping from Ixia to <code>dst_ip</code></p> <p>The keyword return the output string as it is. The return could be</p> <div><ul style="list-style-type: none"><li>- Port &lt;portName&gt;: ping failed: port not assigned</li><li>- Response received from &lt;sourceIp&gt;/unknown . Sequence Number &lt;sequenceNumber&gt;</li><li>- Ping request to &lt;destinationIp&gt;/unknown ip failed: &lt;GenericPingError&gt;/&lt;error&gt;: &lt;genericError&gt;unknown reason</li><li>- Error: Couldn't find any source interface for Send Ping to &lt;destinationIp&gt; on &lt;portName&gt; Id &lt;id&gt;</li><li>- Error: Couldn't find any source IP for Send Ping to &lt;destinationIp&gt; on &lt;portName&gt; Id &lt;id&gt;</li></ul></div> <p>Parameters:</p> <ul style="list-style-type: none"><li>▪ <code>src_port_index</code>: index of Ixia port (starts from 0)</li><li>▪ <code>src_intf_index</code>: index of interface insides the port (starts from 0)</li></ul> <p>Examples:</p> <table><tr><td>Tester.</td><td><a href="#">Ping</a></td><td>1.1.1.1</td><td>0</td><td>0</td></tr><tr><td>Tester.</td><td><a href="#">Ping</a></td><td>1.1.1.1</td><td></td><td></td></tr></table>	Tester.	<a href="#">Ping</a>	1.1.1.1	0	0	Tester.	<a href="#">Ping</a>	1.1.1.1				
Tester.	<a href="#">Ping</a>	1.1.1.1	0	0										
Tester.	<a href="#">Ping</a>	1.1.1.1												
Regenerate	<code>self</code>	Regenerates <b>all</b> flow of current traffic items												
Reset Config	<code>self</code>	Clears current config and creates new blank config												
Run Quicktest	<code>self, test_index=0, wait_until_finish=True</code>	<p>Runs the Quicktest and wait until it finishes</p> <p><b>Warning:</b> it could take a long time to finish a quicktest</p>												
Set All Traffic Item	<code>self, enabled=True</code>	Enables/Disables <b>all</b> traffic items at once												
Set Bgp Items	<code>self, port_index, neighbor_index, route_range_index, is_enable</code>	<p>Enables/Disables BGP entry by a set of port,neighbor,route_range index</p> <p>Parameters:</p> <ul style="list-style-type: none"><li>▪ <code>port_index</code>: index of the port</li><li>▪ <code>neighbor_index</code>: index of the neighbor or *</li><li>▪ <code>route_range_index</code>: index of the route range or *</li><li>▪ <code>is_enable</code>: \${TRUE} or \${FALSE}</li></ul> <p>Note</p> <p>Examples:</p> <table><tr><td>Tester.</td><td><a href="#">Set BGP Items</a></td><td>0</td><td>*</td><td>*</td><td>\${FALSE}</td></tr><tr><td>Tester.</td><td><a href="#">Set BGP Items</a></td><td>0</td><td>*</td><td>*</td><td>\${TRUE}</td></tr></table>	Tester.	<a href="#">Set BGP Items</a>	0	*	*	\${FALSE}	Tester.	<a href="#">Set BGP Items</a>	0	*	*	\${TRUE}
Tester.	<a href="#">Set BGP Items</a>	0	*	*	\${FALSE}									
Tester.	<a href="#">Set BGP Items</a>	0	*	*	\${TRUE}									
Set Bgp Neighbor	<code>self, *indexes, **kwargs</code>	<p>Enables/Disables BGP entry by neighbor index</p> <p><code>kwargs</code> contains following parameters:</p> <ul style="list-style-type: none"><li>▪ <code>indexes</code>: is a list of index of BGP neighbor (index is started from zero)</li><li>▪ <code>vport_index</code>: is the target vport index</li><li>▪ <code>enabled</code>: TRUE or FALSE</li></ul> <p>Examples:</p> <table><tr><td>Tester.</td><td><a href="#">Set BGP Item</a></td><td>0</td><td>1</td><td>vport_index=0</td><td>enabled=\${FALSE}</td></tr><tr><td>Tester.</td><td><a href="#">Set BGP Item</a></td><td>0</td><td>1</td><td>vport_index=1</td><td>enabled=\${TRUE}</td></tr></table>	Tester.	<a href="#">Set BGP Item</a>	0	1	vport_index=0	enabled=\${FALSE}	Tester.	<a href="#">Set BGP Item</a>	0	1	vport_index=1	enabled=\${TRUE}
Tester.	<a href="#">Set BGP Item</a>	0	1	vport_index=0	enabled=\${FALSE}									
Tester.	<a href="#">Set BGP Item</a>	0	1	vport_index=1	enabled=\${TRUE}									
Set Capture Port	<code>self, data_mode=True, control_mode=True, port_index=0</code>	<p>Capture packets for follow port</p> <p><code>port_index</code>: is a index of current test port (start from 0) <code>data_mode</code>: capture data packets and save in &lt;intf&gt;_HW.cap file <code>control_mode</code>: capture controls packets and save in &lt;intf&gt;_SW.cap file</p> <p><b>Note:</b> <code>control_mode</code> saves all control packets and <code>data_mode</code> only saves data packets.</p> <p><b>Note:</b> <code>control_mode</code> saves all control packets and <code>data_mode</code> only saves data packet</p> <p>Examples:</p> <table><tr><td>Tester.</td><td><a href="#">Set Capture Port</a></td><td>0</td><td></td><td></td></tr><tr><td>Tester.</td><td><a href="#">Set Capture Port</a></td><td>control_mode=\${TRUE}</td><td>0</td><td>1</td></tr></table>	Tester.	<a href="#">Set Capture Port</a>	0			Tester.	<a href="#">Set Capture Port</a>	control_mode=\${TRUE}	0	1		
Tester.	<a href="#">Set Capture Port</a>	0												
Tester.	<a href="#">Set Capture Port</a>	control_mode=\${TRUE}	0	1										
Set Traffic Item	<code>self, *items, **kwargs</code>	<p>Enables/Disables some traffic items <code>items</code></p> <p>Parameters:</p> <ul style="list-style-type: none"><li>▪ <code>items</code>: a list of Ixia traffic item name</li><li>▪ <code>enabled</code>: False or True ,the mode to set traffic item to, default is <code>True</code> (enabled)</li></ul> <p><b>Note:</b> traffic item could be specified by ::&lt;num&gt; format. In this case the <code>num</code> is the order of traffic item count from zero.</p> <p>Returns <code>True</code> if all items are set coordinately or otherwise</p> <p>Examples:</p> <table><tr><td>Set Traffic Item</td><td>Traffic Item 1</td><td>Traffic Item 2</td></tr><tr><td>Set Traffic Item</td><td>@{item_list}</td><td></td></tr></table>	Set Traffic Item	Traffic Item 1	Traffic Item 2	Set Traffic Item	@{item_list}							
Set Traffic Item	Traffic Item 1	Traffic Item 2												
Set Traffic Item	@{item_list}													
Should Be Pingable	<code>self, dst_ip, src_port_index=0, src_intf_index=0</code>	<p>Ping from Ixia and raise an error if ping fails</p> <p>The keyword return <code>True</code> if succeeds</p>												

Start Capture	self, wait_time=30s	Start packet capture  Target ports are set by the configuration file or by [Set Capture] keyword								
Start Protocol	self, wait_time=1m	Starts all protocols and wait for wait_time  Default wait_time is 1 minute. Make sure wait_time is big enough to start all protocols.								
Start Test Composer	self, script_name=Main_Procedure, run_num=1, wait_for_test=True, parameter=, wait=10s	Run a test composer script.  The test composer script should be included in an Ixia Network configuration file and loaded properly with <a href="#">Load Config</a>  Parameters: <ul style="list-style-type: none"><li>script_name is the name of the script to run. Default value is Main_Procedure.</li><li>wait_for_test: if \${TRUE} then wait until the script finishes.</li><li>parameter: parameter that is passed to the script. Parameter could be in 2 formats: {{VAR1 VALUE1}} {VAR2 VALUE2}} or simply as VALUE1 VALUE2.</li></ul> The script must prepare VAR1 and VAR2 properly by Test parameter. See Ixia Network anout composer script for more details. <ul style="list-style-type: none"><li>wait: wait time before go to next keyword</li></ul> Examples: <table><tr><td>Tester.<a href="#">Start Test Composer</a></td><td>parameter=XXX YYY</td></tr><tr><td>Tester.<a href="#">Get Test Composer Result</a></td><td>result_file=script1.log</td></tr><tr><td>Tester.<a href="#">Start Test Composer</a></td><td>parameter={{VAR1 AAA} {VAR2 BBB}}</td></tr><tr><td>Tester.<a href="#">Get Test Composer Result</a></td><td>result_file=script1.log</td></tr></table>	Tester. <a href="#">Start Test Composer</a>	parameter=XXX YYY	Tester. <a href="#">Get Test Composer Result</a>	result_file=script1.log	Tester. <a href="#">Start Test Composer</a>	parameter={{VAR1 AAA} {VAR2 BBB}}	Tester. <a href="#">Get Test Composer Result</a>	result_file=script1.log
Tester. <a href="#">Start Test Composer</a>	parameter=XXX YYY									
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Tester. <a href="#">Start Test Composer</a>	parameter={{VAR1 AAA} {VAR2 BBB}}									
Tester. <a href="#">Get Test Composer Result</a>	result_file=script1.log									
Start Traffic	self, wait_time=30s	Starts the current traffic settiing and wait for wait_time .  <b>Note:</b> This is a asynchrnous action. After called, the keyword finishes immediatly but it will take a while before traffic starts  By default the keyword will wait for 30 seconds.								
Stop All Protocols	self, wait_time=30s	Stop all running protocols								
Stop And Save Capture	self, prefix=, wait_until_finish=True, monitor_interval=5s	Stop current capture and save the results to folder specified by path  Captured files will be saved in current result folder with prefix appended in their names.  Examples: <table><tr><td>Tester.<a href="#">Start Capture</a></td><td></td></tr><tr><td>Sleep</td><td>10s</td></tr><tr><td>Tester.<a href="#">Stop And Save Capture</a></td><td>\${RESULT_FOLDER}/capture.zip</td></tr></table>	Tester. <a href="#">Start Capture</a>		Sleep	10s	Tester. <a href="#">Stop And Save Capture</a>	\${RESULT_FOLDER}/capture.zip		
Tester. <a href="#">Start Capture</a>										
Sleep	10s									
Tester. <a href="#">Stop And Save Capture</a>	\${RESULT_FOLDER}/capture.zip									
Stop Quicktest	self, test_index=0	Stops a running test								
Stop Test Composer	self, wait=10s	Stop a running composer  Do nothing when a test composer has already stopped or no composer has been prepared.								
Stop Traffic	self, stop_protocol=False, wait_time=10s	Stops the current traffic and wait for wait_time  Parameters: <ul style="list-style-type: none"><li>stop_protocol: if True also stops all running protocols</li><li>wait_time: time to wait after apply the command</li></ul>								
Wait Until Connected	self, timeout_str=5m	Waits until ports become enabled and connected								

Altogether 40 keywords.

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