Automation Tool for IP Traffic – Test & Measure
Add-on to automate operations with IP Traffic – Test & Measure software

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This guide allows discovering the Automation Tool for IP Traffic - Test & Measure software and is not an exhaustive user manual.

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PART 0  Preface

0.1 Minimum System Requirements

To appropriately operate Automation Tool for IP Traffic – Test & Measure or Automation Tool for IP Traffic, you need the following minimum system requirements:

- Pentium processor with 512 MB memory
- 1024 x 768 display
- 25 MB free hard disk space

0.2 Technical Support

ZTI Communications Technical Support can assist you with all your technical problems from installation to troubleshooting. Before contacting our Technical Support, please read the relevant sections of the product documentation and the “Read Me First” file.

Before contacting our technical support, make sure you record the following information:

- Product name and version.
- Demo version or licensed product.
- System configuration.
- Problem details: settings, error messages...
- If the problem is persistent, give the details of how to create the problem.

You can contact Technical Support by:

<table>
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<tr>
<th>Email</th>
<th>Send as many details as possible to <a href="mailto:support@zti-communications.com">support@zti-communications.com</a></th>
</tr>
</thead>
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<tr>
<td>Telephone</td>
<td>Telephone support is available from 09:00 am to 06:00 pm (GMT Time +01:00 or +02:00), Monday to Friday. Call on +33 2 9613 4003</td>
</tr>
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PART 1  Product Overview

**Automation Tool for IP Traffic** is an add-on tool for the **IP Traffic – Test & Measure** software.

This tool allows controlling **IP Traffic - Test & Measure** by using a scenario.

This Automation Tool is based on the notion of **scenario**. A scenario is a succession of commands and instructions.

A Command is used to parameter and/or to activate a function of the **IP Traffic - Test & Measure** application, for example: The ‘Start Receiver’ Command is equivalent by pressing manually the ‘Start receiving traffic’ button in the ‘IP Answering – Parameters + Statistics’ tab on the **IP Traffic - Test & Measure** application.

An Instruction is used by the Automation Tool to realize a specific treatment: for example, ‘Wait 10 seconds’.  
*Note: a maximum of 20 scenarios can be opened at the same time.*
A scenario is composed of two entities:

- The **IP Generator part** to pilot the ‘IP Generator’ module of the **IP Traffic - Test & Measure** application
- The **IP Answering part** to pilot the ‘IP Answering’ module of the **IP Traffic - Test & Measure** application

The description of each command or instruction is shown in PART 5.

<table>
<thead>
<tr>
<th>Commands and Instructions for the 'IP Generator' part</th>
<th>Commands and Instructions for the 'IP Answering' part</th>
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<td>Start Sniffer</td>
<td>Start Sniffer</td>
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<tr>
<td>Stop Automatic Mode</td>
<td>Stop Automatic Mode</td>
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<tr>
<td>Stop Connection(s)</td>
<td>Stop Connection(s)</td>
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<td>Disable Statistics Export</td>
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<tr>
<td>Stop Scenario</td>
<td>Stop Scenario</td>
</tr>
<tr>
<td>Stop Sniffer</td>
<td>Stop Sniffer</td>
</tr>
<tr>
<td>Wait</td>
<td>Wait</td>
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</table>

An example of scenario is displayed below, with the following configuration:

- **PC#A** is acting as the ‘Local’ machine with the scenario file:
  ‘Scenario1_UDP_PC#A.scn’
- **PC#B** is acting as the ‘Remote’ machine with the scenario file:
  ‘Scenario1_UDP_PC#B.scn’

*Note: by double-clicking on a scenario file, the automation tool starts and opens the corresponding scenario file.*
**Contents of the Scenario1_UDP_PC#A.scn file**

---

**IP Generator Part**

---

**EXAMPLE SCENARIO 1**

**AIM:** Use simple commands of the Automation Tool to generate two UDP flows. The parameters of the connections will be changed during the scenario execution.

---

**IP GENERATOR PART (see IP ANSWERING PART in Scenario1_UDP_PC#B)**

---

**NOTE:** Check all parameters in particular the IP addresses specified in this scenario.

---

A new context is loaded to reset all parameters.

---

**First step:** Two UDP connections having a limited throughput about 512 Kbps are specified.

---

**Set and start connection #1 (UDP) for 1 minute (auto ending after 1 minute)**

```
SET AND START CONNECTION(S) #01 GOING TO DestinationAddress PORT 2009 PROTOCOL UDP
AVERAGE THROUGHPUT 512 kb/s PACKET SIZE 1024 bytes TOS 00 DURATION 00:01:00
```

---

**Set and start connection #2 (UDP), wait 1 minute and stop the connection**

```
SET AND START CONNECTION(S) #02 GOING TO DestinationAddress PORT 2010 PROTOCOL UDP
AVERAGE THROUGHPUT 512 kb/s PACKET SIZE 1024 bytes TOS 00
```

---

**Waiting one minute**

```
WAIT 00:01:00
```

---

**Stopping the connections #01 and #02. A warning message should appear for the connection #01 saying that the connection is already stopped.**

---

This behavior is normal. The "Set and Start" command for the connection #01 uses the "Duration" parameter which set when the connection should be stopped. (here after one minute)

```
STOP CONNECTION(S)#01 #02
```

---

**Repeat 2 times starting and closing connection #1 (UDP)**

```
REPEAT 2 TIME(S)
```

---

This is useful in a loop in order to let time to the processes or connections of the previous loop to be released.

```
WAIT 00:00:10
```

---

**In the case below, the data size is set to 1024 bytes and the inter packet delay is set to 50 ms.**

---

**By using a data size and an inter packet delay, you can also define a connection having a limited throughput.**

---

This connection should generate data with a throughput close to 16 Kb/s.

```
SET AND START CONNECTION(S) #01 GOING TO DestinationAddress PORT 2009 PROTOCOL UDP
PACKET SIZE 1024 bytes INTERPACKETDELAY 50 ms TOS 00
```

---

**By using the wait command, the duration of a connection can be also specified. Easier to change the duration in one place when many connections are specified**

```
WAIT 00:00:30
```

---

**STOP ALL CONNECTIONS**

---

END REPEAT

---

**IP Answering Part**

---

**Scenario File: Scenario1_UDP_PC#A.scn – IP Answering Part**

---

Empty
Contents of the Scenario1_UDP_PC#B.scn file

IP Answering Part
Scenario File: Scenario1_UDP_PC#B.scn - IP Answering Part

-- EXAMPLE SCENARIO 1
-- AIM: Use simple commands of the Automation Tool to generate two UDP flows.
The parameters of the connections are changed during the scenario execution.
-- IP ANSWERING PART (see IP GENERATOR PART in Scenario1_UDP_PC#A)
--
-- A new context is loaded to reset all parameters
LOAD CONTEXT: NEW
--
-- The configuration of the IP Answering part is very simple
-- First step: specify the port numbers, the protocol and the receiver working mode
SET CONNECTION(S) #01 PORT 2009 PROTOCOL UDP MODE Absorber
SET CONNECTION(S) #02 PORT 2010 PROTOCOL UDP MODE Absorber
--
-- Second step: Start the IP Answering
START RECEIVER
-- The automation stopped the execution of the scenario but the IP Answering is still running
-- In this case, it is not necessary to wait the end of scenario based on PC#A
--

IP Generator Part
Scenario File: Scenario1_UDP_PC#B.scn - IP Generator Part
Empty

To execute the scenario Scenario1_UDP_PC#A.scn, please proceed as follows:

- The IP Traffic - Test & Measure and IP Traffic - Test & Measure software are running on PC#A and PC#B.
- First, the ‘Scenario1_UDP_PC#B.scn’ file is loaded on PC#B (Remote) and started.
- Second, the ‘Scenario1_UDP_PC#A.scn’ file is loaded on PC#A (Local).
- Then create in the HOSTS file (\WINDOWS DIRECTORY\System32\Drivers\etc\), the entry "DestinationAddress" specifying the IP address corresponding to the address of your PC#B (192.168.0.51 is the address of the PC#B we took as example) as shown below:

```
# Copyright (c) 1993-1999 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
# 102.54.94.97 rhino.acme.com # source server
# 38.25.63.10 x.acme.com # x client host
127.0.0.1 localhost
192.168.0.51 DestinationAddress
```

- You can then execute this scenario on PC#A.
Several scenario examples are provided with Automation Tool for IP Traffic with 2 files for each example.

Example #1: 2 UDP connections from PC#A to PC#B
- Scenario1_UDP_PC#A.scn (for PC#A)
- Scenario1_UDP_PC#B.scn (for PC#B)

Example #2: 2 TCP connections from PC#A to PC#B
- Scenario2_TCP_PC#A.scn (for PC#A)
- Scenario2_TCP_PC#B.scn (for PC#B)

Example #3: 16 TCP connections from PC#A to PC#B
- Scenario3_LaunchAllProcesses_PC#A.scn (for PC#A)
- Scenario3_LaunchAllProcesses_PC#B.scn (for PC#B)

Example #4: Carry out unannounced tests to measure the bandwidth (upload and download)
- For PC#A
  - Scenario4_Link_BandwidthPerformances_PC#A.scn
  - Scenario4_ContextFile_PC#A.Ctx: context file used by the scenario of the PC#A
  - LaunchScenario4_PC#A.bat: batch file to launch the software and start the scenario execution
- For PC#B
  - Scenario4_Link_BandwidthPerformances_PC#B.scn (for PC#B)
  - Scenario4_ContextFile_PC#B.Ctx: context file used by the scenario of the PC#B
  - LaunchScenario4_PC#B.bat: batch file to launch the software and start the scenario execution

Example #5: Generation of a TCP connection using the Automatic mode to test the network availability
- Scenario5_Network_Availability_PC#A.scn
- Scenario5_ContextFile_PC#A.Ctx: used by the scenario of the PC#A
- Scenario5_Network_Availability_PC#B.scn

Example #6: Performances measures for Fast Ethernet Networks
- Scenario6_FastEthernetPerformancesTests_PC#A.scn (for PC#A)
- Scenario6_FastEthernetPerformancesTests_PC#B.scn (for PC#B)

Example #7: Performances measures for Gigabit Networks
- Scenario7_GigabitPerformancesTests_PC#A.scn (for PC#A)
- Scenario7_GigabitPerformancesTests_PC#B.scn (for PC#B)
- Scenario7_ContextFile.Ctx: context to use on the both side to set the IP Traffic - Test & Measure buffers to 40 000 bytes.

To execute these scenarios, proceed as described above, by creating an entry into the HOSTS file.
PART 2  Graphical User Interface

2.1  Main Window

When the Automation Tool is started, the following main window is displayed:

This main window is composed of four areas:

Area 1: the Menu Bar

Area 2: the Tool Bar

Area 3: to display the list of opened scenarios

Area 4: working area used for editing and running a scenario

Area 5: the Status Bar is composed of two fields used for displaying information. The first field indicates the scenario’s working mode: Edit mode or Exec mode. The second field is used for contextual help information.
When a scenario is opened, the information is displayed in the areas 3 and 4 as shown below and the Menu Bar is enriched:

A scenario is composed of 2 parts (area 3) displayed in two different windows (area 4):
- the 'IP Generator' part,
- and the 'IP Answering' part.

The status bar is also subdivided in two horizontal zones (area 6 and 7):
- Area 6: Edit zone
- Area 7: Execution zone

Two operating modes are available:
- Edit mode: to create, edit, modify and delete a scenario.
- Exec mode: to run a scenario

You switch from one mode to the other one by using the buttons ‘Edit Mode’ or ‘Exec Mode’ located in the Tool Bar:
2.2 Menu Description

The items of the Menu Bar vary depending if a scenario is opened or not.

When you launch this tool or if no scenario is opened, the following items are displayed:
   File   View   About

When one or more scenarios are opened, the Menu Bar is enriched to display the following items:
   File   View   Edit   Command   Trace   IP Traffic Window   About

2.2.1 File Menu

2.2.1.1 File/New
This command opens a new default scenario composed of two parts: Sender and Receiver.

2.2.1.2 File/Open
The “Open” command allows opening a scenario file (.SCN file), which contains a previously saved scenario.

2.2.1.3 File/Save
The “Save” command allows saving all the lines defined by the user in the opened scenario file.

2.2.1.4 File/Save as
This command allows saving all the parameters and commands defined in a scenario file defined by the user (.SCN file).

2.2.1.5 File/Recent Contexts
This command allows opening a scenario file previously loaded. The 6 most recent scenario files are shown in the list.

2.2.1.6 File/Exit
This command allows quitting the “Automation Tool for IP Traffic”. A confirmation message box is then displayed and a message box will ask you to save or not changes made to the opened scenarios for each modified scenario.
2.2.2 View Menu

View
- Toolbar
- Status Bar
- Scenario List
- Time Reference Options ...

2.2.2.1 View/Toolbar
By clicking this item, the Toolbar is displayed or hidden.

2.2.2.2 View/Status Bar
By clicking this item, the Status Bar is displayed or hidden.

2.2.2.3 View/Scenario List
By clicking this item, the Scenario List is displayed or hidden.

2.2.2.4 View/Time Reference Options ...
By clicking this item, the time reference can be selected. In function of the selection, the Date/Time information including in the scenario will be interpreted using the local time or the machine time (UTC).

2.2.3 Edit Menu

Edit
- Cut       Ctrl+X
- Copy      Ctrl+C
- Paste Before Ctrl+B
- Paste After Ctrl+A
- Delete    Del
- Insert Before Ctrl+I
- Insert After Ctrl+J
- Modify Command Parameters Ctrl+M
- Increase Indent TAB
- Decrease Indent Shift+TAB
- Shift Date/Time Shift+D
- Export in a text file ...

The items of this menu are only available in the “Edit Mode”.

2.2.3.1 Edit/Cut
Cuts selected lines in a scenario

2.2.3.2 Edit/Copy
Copies selected lines of a scenario

2.2.3.3 Edit/Paste Before
Pastes the previously copied lines before the selected line in the scenario

2.2.3.4 Edit/Paste After
Pastes the previously copied lines after the selected line in the scenario
2.2.3.5 Edit/Delete
Deletes the selected lines in the scenario

2.2.3.6 Edit/Insert Before
Inserts a new command or instruction before the selected line

2.2.3.7 Edit/Insert After
Inserts a new command or instruction after the selected line

2.2.3.8 Edit/Modify Command Parameters
Modifies the selected line of the scenario

2.2.3.9 Edit/Increase Indent
Increases indentation of the selected line

2.2.3.10 Edit/Decrease Indent
Decreases indentation of the selected line

2.2.3.11 Edit/Shift Date/time
By using this function, you can modify and shift the Date/time for all commands and instructions of a scenario.
In the example below, the local Date/Time has been previously defined (View/Options … menu) and the first command or instruction with a date is based on: 03/24/2006 12:33:00.

You can define for example a new date & time: 04/13/2006 10:52:15 and then press the 'Shift' button. So, the first command or instruction of the scenario with a date/time will refer to this new value, and automatically all others commands and instructions with a date/time will be updated with this new basis.

2.2.3.12 Edit/Export in a text file …
Opens a dialog box to save in a file the lines of the selected part of a scenario (.TXT format)
2.2.4 Command Menu

<table>
<thead>
<tr>
<th>Command</th>
<th>Key</th>
</tr>
</thead>
<tbody>
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<td>F7</td>
</tr>
<tr>
<td>Run</td>
<td>F5</td>
</tr>
<tr>
<td>Step by step</td>
<td>F11</td>
</tr>
<tr>
<td>Go</td>
<td>F5</td>
</tr>
<tr>
<td>Pause</td>
<td>F4</td>
</tr>
<tr>
<td>Stop</td>
<td>F3</td>
</tr>
</tbody>
</table>

The items of this menu are only available in the “Exec Mode”.

2.2.4.1 Command/Rewind
Sets the execution point of the scenario to the first line

2.2.4.2 Command/Run
Runs the active scenario (Sender and Receiver parts)

2.2.4.3 Command/Step by Step
Executes the lines of the scenario step by step for the active window (Sender Part or Receiver Part)

2.2.4.4 Command/Go
This command can be used after a step by step execution.

2.2.4.5 Command/Pause
Stops the execution of the scenario after the current line being executed

2.2.4.6 Command/Stop
Stops the execution of the scenario, it doesn’t stop IP Traffic - Test & Measure.

2.2.5 Trace Menu

The items of this menu are enabled in the “Exec Mode”. The “Trace Saving Options …” item is always enabled.
2.2.5.1 Trace/Clear Scenario Results
Clears the results of the execution in the ‘Execution Results’ zone for the IP Generator Part and the IP Answering Part.

2.2.5.2 Trace/Clear IP Generator Part Results
Clears the results of the execution in the ‘Execution Results’ zone for the IP Generator Part exclusively.

2.2.5.3 Trace/Clear IP Answering Part Results
Clears the results of the execution in the ‘Execution Results’ zone for the IP Answering Part exclusively.

2.2.5.4 Trace/Save Scenario Results
Saves the results of the execution in a file (.TXT format) for the IP Generator Part and the IP Answering Part.

2.2.5.5 Trace/Save IP Generator Part Results
Saves the results of the execution in a file (.TXT format) for the IP Generator Part exclusively.

2.2.5.6 Trace/Save IP Answering Part Results
Saves the results of the execution in a file (.TXT format) for the IP Answering Part exclusively.

2.2.5.7 Trace/Trace Saving Options
Saves the results while executing a scenario in one or two files (.TXT format) and you can define the periodicity of this automatic saving process.

![Automation Tool for “IP Traffic - Test & Measure” - Trace Saving Options](image-url)
2.2.6 IP Traffic Menu

This menu is used to start (Open …) and stop (Close) manually the IP Traffic - Test & Measure application.

2.2.6.1 IP Traffic/Open
Starts manually and open the IP Traffic - Test & Measure application (if already not launched).

2.2.6.2 IP Traffic /Close
Stops and closes the IP Traffic - Test & Measure application.

2.2.6.3 IP Traffic /Bring to the top
Brings to the top the IP Traffic - Test & Measure main window.

2.2.7 Window Menu

This menu is used to arrange the opened windows for the scenarios displayed on the right part with different methods:

- Cascade
- Tile vertical
- Tile horizontal
- Arrange icons (when the windows are iconized)

2.2.8 About Menu
Displays the version number and copyright of the Automation Tool for IP Traffic application.
2.3 **Tool Bar Description**

The tool bar is composed of icons, buttons and information zones.

Description of the objects from left to right:

- Create a new scenario
- Open a scenario file
- Save the active scenario in a file
- Cut the selection
- Copy the selection
- Paste before (the current line)
- Paste after (the current line)
- Delete the selected line(s)
- Insert before (the current line)
- Insert after (the current line)
- Modify (the current line)
- Increase indent (the selected lines)
- Decrease indent (the selected lines)
- Rewind (the execution mark is at the top of the scenario)
- Run the scenario
- Run the scenario step by step
- Go (after a step by step execution)
- Pause
- Stop
- Edit Mode button
- Exec Mode button
- Local time (current time of the machine)
- UTC time (absolute time)
PART 3 Using the Automation Tool

3.1 Create and Edit a Scenario

Step 1: File/New
Step 2: Select the window: IP Generator Part or IP Answering Part
Step 3: Double click on the line ‘Double click here to insert a new command line’. A window is displayed to insert a command or instruction.
Step 4: Select the command or instruction you want to insert and fill in the parameters, and then click OK.
Step 5: Add new command or instruction lines to the scenario with a double click or a right click on the line ‘Double click here to insert a new command line or right click on the command line to access the edit menu’

In the example below, a right click on a command line opens a menu with different options:

Step 6: Save this new scenario in a scenario file (with the extension .SCN) by using the menu File/Save as ...

You can modify a line of the scenario in the ‘Edit Mode’ by double clicking on the line.

Important note: the UTC Time (or the Local Time) is the reference for the Date/Time specified in the Wait command and for the execution results of the scenario. The Date/Time reference can be changed by using the menu item “View > Time Reference Options”.

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3.2 **Run a Scenario**

To run a scenario, switch to the ‘Exec Mode’ by pressing the button “Exec Mode” in the Tool Bar.

Then the “IP Generator Part” and the “IP Answering Part” of the scenario are displayed in two windows as follows:
You can switch to the ‘Edit Mode’ by pressing the ‘Edit Mode’ button in the Tool Bar. To execute the scenario, you can use the commands available in the ‘Command’ menu or the buttons in the tool bar.

When the scenario is running, the symbol ▶ indicates the command being executed and the ‘Execution Results’ zone is filled with the result of each command or instruction.

Note: if the button “Stop” is pressed before the end of the scenario, all processes launched of IP Traffic - Test & Measure are stopped (IP Generator, IP Answering and Traffic Sniffer processes)
When the execution of the scenario is ended, you can right click in the ‘Execution Results’ zone to clear and save the displayed results.
PART 4  Command Line Parameters

The Automation Tool for IP Traffic software can be started by using a command line with parameters.

4.1  General Rule

Parameters should be separated from the application name by a space. The application name of Automation Tool for IP Traffic is "Aut_IPTraff.exe". Under Windows, the application name is not case sensitive.

4.2  Start the Automation Tool for IP Traffic and Launch a Scenario

The scenario filename is a set of commands and instructions for IP Traffic - Test & Measure. This set can be saved in a file and reloaded later.

The command line parameter to start the Automation Tool for IP Traffic, load and launch a scenario:

-START

Syntax:  -START:filename
Where filename may be:

C:\temp\scenario1.scn or "C:\Program Files\IP Traffic\scenario1.scn". The " symbol is necessary to use spaces in filenames or directories.

There is NO space between the parameter –START: and the filename.

Example:

Aut_IPTraff –START:"C:\Program Files\IP Traffic\Scenario1_UDP_PC#B.scn"

4.3  Stop the Automation Tool for IP Traffic and IP Traffic - Test & Measure

There is only one command line parameter to stop the execution of the scenario and then stop the IP Traffic - Test & Measure and the Automation Tool for IP Traffic software.

Syntax:  -STOP

Example:

Aut_IPTraff –STOP

Under Windows Vista, you must have the administrator rights to be able to execute the “Aut_IPTraff.exe –STOP” command.
PART 5 Commands and Instructions of a Scenario

<table>
<thead>
<tr>
<th>Commands and instructions for the 'IP Generator' part</th>
<th>Commands and instructions for the 'IP Answering' part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments</td>
<td>Comments</td>
</tr>
<tr>
<td>Load Context</td>
<td>Load Context</td>
</tr>
<tr>
<td>Download Remote file</td>
<td>Download Remote file</td>
</tr>
<tr>
<td>Repeat</td>
<td>Repeat</td>
</tr>
<tr>
<td>End Repeat</td>
<td>End Repeat</td>
</tr>
<tr>
<td>Launch External Application</td>
<td>Launch External Application</td>
</tr>
<tr>
<td>Register Statistics</td>
<td>Register Statistics</td>
</tr>
<tr>
<td>Select interface</td>
<td>Select interface</td>
</tr>
<tr>
<td>Select Columns</td>
<td>Select Columns</td>
</tr>
<tr>
<td>Set and Start Connection(s)</td>
<td>Set Connections(s)</td>
</tr>
<tr>
<td>Set File Mode Parameters</td>
<td>Set File Mode Parameters</td>
</tr>
<tr>
<td>Set Time Device Parameters</td>
<td>Set Time Device Parameters</td>
</tr>
<tr>
<td>Set Sniffer Parameters</td>
<td>Set Sniffer Parameters</td>
</tr>
<tr>
<td>Set Specific Parameters</td>
<td>Set Specific Parameters</td>
</tr>
<tr>
<td>Start Automatic Mode</td>
<td>Start Receiver</td>
</tr>
<tr>
<td>Enable Statistics Export</td>
<td>Enable Statistics Export</td>
</tr>
<tr>
<td>Start Sniffer</td>
<td>Start Sniffer</td>
</tr>
<tr>
<td>Stop All Connections</td>
<td>Stop Receiver</td>
</tr>
<tr>
<td>Stop Automatic Mode</td>
<td>Disable Statistics Export</td>
</tr>
<tr>
<td>Stop Connection(s)</td>
<td>Stop Scenario</td>
</tr>
<tr>
<td>Disable Statistics Export</td>
<td>Stop Sniffer</td>
</tr>
<tr>
<td>Stop Scenario</td>
<td>Wait</td>
</tr>
</tbody>
</table>

A specific window is attached to a command or instruction (an instruction has no action on IP Traffic - Test & Measure). A command or instruction is composed of 3 parts:
- <The command or Instruction name> : Description
- <List of parameters> [may be null]
- <Comments> [optional]
## 5.1 Commands and Instructions for the 'IP Generator' Part

<table>
<thead>
<tr>
<th>Description</th>
<th>List of parameters</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments</td>
<td></td>
<td>This instruction is used to add comments into the scenario file. It is also used to insert blank line between two commands if necessary.</td>
</tr>
<tr>
<td>Download Remote File</td>
<td>File name to download</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remote IP address</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remote port</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local File name</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Delete the remote file after the end of the downloading</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>This command overwrites the previous parameters set on IP Traffic.</td>
</tr>
<tr>
<td>Load Context</td>
<td>New context</td>
<td>This command loads only the parameters of the corresponding part (here IP Generator part). No general parameters are loaded by this command (the throughput sampling period, the refresh time, ... for example). This is very useful to load parameters on the Generator which are not available with the Automation Tool commands (RTT option, TTL field for example)</td>
</tr>
<tr>
<td></td>
<td>Context file</td>
<td></td>
</tr>
<tr>
<td>Repeat</td>
<td>Counter = number of iterations</td>
<td>When a scenario is running, if the scenario contains a “REPEAT” instruction, the number of iteration realized is displayed in the ‘Execution Results’ zone. This information is written before the result of the commands or instructions included into this iteration.</td>
</tr>
<tr>
<td>End repeat</td>
<td></td>
<td>This flag marks the end of the iteration</td>
</tr>
<tr>
<td>Launch External Application</td>
<td>Command Line</td>
<td>This command allows launching an external application. For example, this can start an application which can create a synthesis of the statistics generated during the tests session.</td>
</tr>
<tr>
<td>Register Statistics</td>
<td>Filename</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connections to export (#1 to #16)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parameters to export (Throughput, packet throughput, data sent, data received, packet sent, packet received, volume to send, remaining volume, sequence numbering errors, Round Trip Time, Maximum Round Trip Time, Minimum Round Trip Time, Jitter)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Include the RTT summary of all connections</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Include the IP Generator Activity statistics.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>This command overwrites the previous parameters set on IP Traffic.</td>
</tr>
<tr>
<td>Command</td>
<td>Parameters</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Select Interface</td>
<td>Connections concerned (#1 to #16) Local IP Address</td>
<td>This command offers the possibility to select the interface to use to generate data. The local IP address should be specified. By this way the network card is automatically selected and all packets generated for this connection will have as source address, the IP address specified.</td>
</tr>
<tr>
<td>Select Columns</td>
<td>Available Columns Selected Columns</td>
<td>This command is used to select the columns which will be displayed on the statistics tabs on IP Traffic during the scenario execution.</td>
</tr>
<tr>
<td>Set File Mode Parameters</td>
<td>File Rule (Overwrite or Rename)</td>
<td>This command allows specifying the behavior of IP Traffic when a file (statistics file, captured traffic file, …) exists already. By choosing the “Rename” option, the old file is kept and a new file is created adding to the filename the date/time of its creation.</td>
</tr>
<tr>
<td>Set Time Device Parameters</td>
<td>Time Device Type (GNSS Receiver or Network Time Server)</td>
<td>This command overwrites the previous parameters set on IP Traffic.</td>
</tr>
<tr>
<td>Set Sniffer Parameters</td>
<td>File name Option to capture only header</td>
<td>This command allows only specifying the captured traffic filename. To use specific filters or NICs, the “Load Context” command should be used.</td>
</tr>
<tr>
<td>Set Specific Parameters</td>
<td>Refresh time for GUI display Throughput sampling period</td>
<td>This command allows setting these two general parameters. Be careful when using it. When they are specified on both side (i.e. IP Generator and IP Answering parts), the parameters set on the first part will be overwrite by the parameters set on the other part.</td>
</tr>
<tr>
<td>Set and Start Connection(s)</td>
<td>Connections to set (#1 to #16) Destination IP address or Hostname Port Protocol (TCP, UDP or none) TOS field Data size (in bytes) Inter Packet Delay (in millisecond) Average throughput per connection Volume per connection (expressed in Bytes, KBytes, MBytes, GBytes, Pkt i.e. packets) Duration</td>
<td>This command can be used only by selecting connection number. The other parameters can be set into a context file and loads by using the “Load Context” command. No need to specify all parameters.</td>
</tr>
<tr>
<td>Start Automatic Mode</td>
<td></td>
<td>This command switches from the IP Generator mode to Automatic and then starts it.</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Enable Statistics Export</strong></td>
<td>This command starts the statistics export process. The process is active until the command “Desactivate Statistics Export” is found. The rules for Start and Stop the export processes are different when using IP Traffic without the Automation Tool. More details are available on the IP Traffic User Guide.</td>
<td></td>
</tr>
<tr>
<td><strong>Start Sniffer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stop All Connections</strong></td>
<td>This command sends the order to stop all connections and return immediately. If the next command starts one of the connections concerned by the “Stop All Connections”, it could be failed because the connection is still running for the moment. Add a “WAIT” command after this command to be sure that all connections are really stopped.</td>
<td></td>
</tr>
<tr>
<td><strong>Stop Automatic Mode</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stop Connection(s)</strong></td>
<td>Connections to stop (#1 to #16) This command sends the order to stop all connections and return immediately. If the next command starts one of the connections concerned by the “Stop Connection(s)”, it could be failed because the connection is still running for the moment. Add a “WAIT” command after this command to be sure that all connections are really stopped.</td>
<td></td>
</tr>
<tr>
<td><strong>Disable Statistics Export</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stop Scenario</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stop Sniffer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wait</strong></td>
<td>Date and/or Time (UTC or Local) Period: number of days and duration Duration (HH:MM:SS) When a scenario is running, the “Wait” instruction shows the elapsed and the remaining time during its execution.</td>
<td></td>
</tr>
</tbody>
</table>
## 5.2 Commands and Instructions for the 'IP Answering' Part

<table>
<thead>
<tr>
<th>Description</th>
<th>List of parameters</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments</td>
<td></td>
<td>See previous comments</td>
</tr>
<tr>
<td>Download Remote File</td>
<td>File name to download&lt;br&gt;Remote IP address&lt;br&gt;Remote port&lt;br&gt;Local File name&lt;br&gt;Delete the remote file after the end of the downloading</td>
<td>See previous comments</td>
</tr>
<tr>
<td>Load Context</td>
<td>New context&lt;br&gt;Context file</td>
<td>See previous comments</td>
</tr>
<tr>
<td>Launch External Application</td>
<td>Command Line</td>
<td>See previous comments</td>
</tr>
<tr>
<td>Repeat</td>
<td>Counter = number of iterations</td>
<td>See previous comments</td>
</tr>
<tr>
<td>End repeat</td>
<td></td>
<td>See previous comments</td>
</tr>
<tr>
<td>Register Statistics</td>
<td>Filename&lt;br&gt;Max size (in KB)&lt;br&gt;Connections to export (#1 to #16)&lt;br&gt;Parameters to export (Throughput, packet throughput, data sent, data received, packet sent, packet received, sequence numbering errors, Data not echoed)&lt;br&gt;Include the IP Answering Activity statistics.</td>
<td>See previous comments</td>
</tr>
<tr>
<td>Select Interface</td>
<td>Connections concerned (#1 to #16)&lt;br&gt;Local IP Address</td>
<td>This command offers the possibility to select the interface to use to receive data. The local IP address should be specified. By this way the network card is automatically selected and all packets can be received on this connection if they have as destination address, the IP address specified.</td>
</tr>
<tr>
<td>Select Columns</td>
<td>Available Columns&lt;br&gt;Selected Columns</td>
<td>See previous comments</td>
</tr>
<tr>
<td>Command</td>
<td>Parameters</td>
<td>Notes</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Set File Mode Parameters</td>
<td>File Rule (Overwrite or Rename)</td>
<td>See previous comments</td>
</tr>
<tr>
<td>Set Time Device Parameters</td>
<td>Time Device Type (GNSS Receiver or Network Time Server)</td>
<td>See previous comments</td>
</tr>
<tr>
<td></td>
<td>Communication Port (GNSS Receiver only)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Save GPS location and periodicity (GNSS Receiver)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Set the NTP Time Server IP address (for Network Time Server)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wait Synchronization and Timeout value</td>
<td></td>
</tr>
<tr>
<td>Set Specific Parameters</td>
<td>Refresh time for GUI display</td>
<td>See previous comments</td>
</tr>
<tr>
<td></td>
<td>Throughput sampling period</td>
<td></td>
</tr>
<tr>
<td>Set Sniffer Parameters</td>
<td>File name</td>
<td>See previous comments</td>
</tr>
<tr>
<td></td>
<td>Option to capture only header</td>
<td></td>
</tr>
<tr>
<td>Set Connection(s)</td>
<td>Connections to set (#1 to #16)</td>
<td>This command can be used only by selecting connection number and one</td>
</tr>
<tr>
<td></td>
<td>Destination IP address or Hostname</td>
<td>of the other parameters. The other parameters can be set into a</td>
</tr>
<tr>
<td></td>
<td>Port</td>
<td>context file and loads by using the “Load Context” command. No need</td>
</tr>
<tr>
<td></td>
<td>Protocol (TCP, UDP or none)</td>
<td>to specify all parameters.</td>
</tr>
<tr>
<td>Start Receiver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enable Statistics Export</td>
<td></td>
<td>See previous comments</td>
</tr>
<tr>
<td>Start Sniffer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stop Receiver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disable Statistics Export</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stop Scenario</strong></td>
<td></td>
<td>This command stops the IP Answering part execution without</td>
</tr>
<tr>
<td></td>
<td></td>
<td>disturbing the IP Generator Part. This is very useful to disable one</td>
</tr>
<tr>
<td></td>
<td></td>
<td>side when the scenario uses the both.</td>
</tr>
<tr>
<td>Stop Sniffer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wait</td>
<td>Date and/or Time (UTC or Local)</td>
<td>See previous comments</td>
</tr>
<tr>
<td></td>
<td>Period: number of days and duration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Duration (HH:MM:SS)</td>
<td></td>
</tr>
</tbody>
</table>