Xena2544 (v2.15)

Step by Step Guide

AGENDA – Xena2544

- Add Chassis
- Add/Configure Port/s
- Protocol Segment Profiles
- Test Configuration
- Multi-Stream configuration
- Reporting
- CLI Option (RFC2544 Automated)

ADD CHASSIS

Xena2544 v2.15 - MyConfig.x2544 (*)

File Edit View Test Control Options Help

Add Chassis | Start | Stop | Cancel | Exit

Physical Ports

Name		ID	Used	Owner
Available Chassis				

Expand All | Collapse All

Stream Progress Counters

Test Configuration | Start Page | Protocol Segment Profiles | Selected Ports | Reporting Options | Multi-Stream Configuration

Xena2544™

Xena2544 Quick Start Guide

This short guide will help you get started using Xena2544.

1. Add a Xena chassis to the current test configuration.
2. Select the test ports you need to use in the test in the Physical Ports panel at the left and drag them to the Selected Ports panel. In the Selected Ports panel you can then configure the individual properties of the ports.
3. The Test Configuration panel contains properties that control the test execution. The properties are divided into the following sub-panels:
   - The **Topology and Frame Content** panel control the topology and direction of the test traffic and also the content of the test frames generated.
   - The **Test Execution Control** panel control the overall test properties, regardless of test type.
   - The **Test Types Configuration** panel control which test you want to perform and also allow you to configure various properties for each of these tests.
4. Use the Protocol Segment Profiles panel to configure the protocol header profiles to use for the selected ports.
5. Review the reporting parameters in the Reporting panel and adjust these as needed.
6. Press the Start button in the toolbar to start the selected tests.

Further Assistance

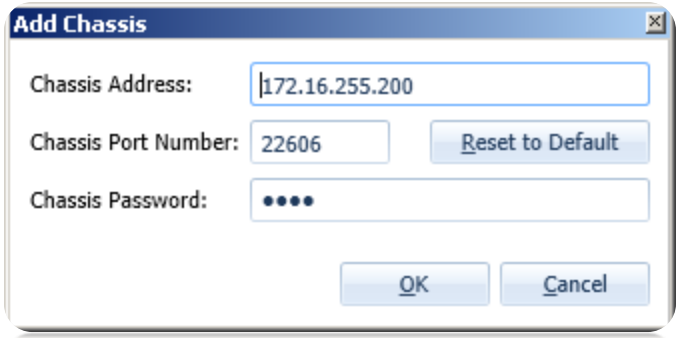
For further assistance please refer to the online Xena Wiki help page which you can access by either selecting the Help -> Online Help menu item or by pressing **F1**

Ready | Test not running | Test Time: 00:00:00 | Duration: 00:00:00 | User: dan

Click the “Add Chassis” button.

ADD CHASSIS

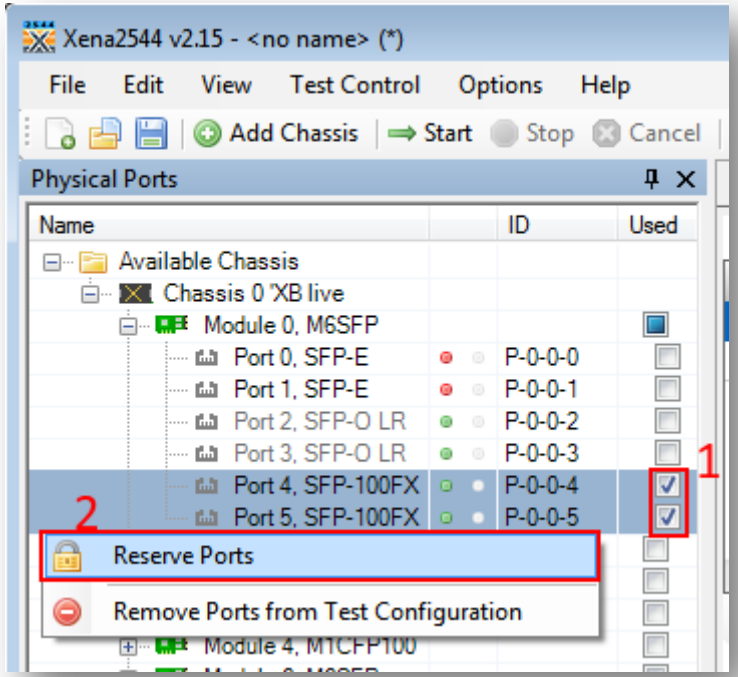
Enter the IP of the Management port under “Chassis Address:”
Use “xena” as default “Chassis Password”.



ADD PORT(S)

1 Choose the Port(s) you need to use:

2 On selected ports + on “Reserve Used Ports”



CONFIGURE PORT(S)

Choose the Port/s you need to configure:

Xena2544 v2.15 - <no name> (*)

File Edit View Test Control Options Help

Add Chassis | Start | Stop | Cancel | Exit

Physical Ports

Name

- Available Chassis
  - Chassis 0 'XB live
    - Module 0, M6SFP
      - Port 0, SFP-E
      - Port 1, SFP-E
      - Port 2, SFP-O LR
      - Port 3, SFP-O LR
      - **Port 4, SFP-**
      - **Port 5, SFP-**
    - Module 1, M6SFP
    - Module 2, M6SFP+
    - Module 3, M2SFP+
    - Module 4, M1CFP100
    - Module 6, M6SFP
    - Module 7, M6SFP
    - Module 8, M6SFP
    - Module 9, M6SFP
    - Module 10, M6SFP
    - Module 11, M6SFP

Expand All | Collapse All

Start Page | Test Configuration | **Selected Ports** | Multi-Stream Configuration | Protocol Segment Profiles

Select ports in the Physical Ports panel and drag them here to include them in the test.

Port Name	Port Speed	IP Address	Prefix	Gateway Address	Protocol Segment Profile
P-0-0-4 (SFP-100FX LR 1310 nm)	<fixed>	0.0.0.0	24	0.0.0.0	1: Ethernet
P-0-0-5 (SFP-100FX LR 1310 nm)	<fixed>	0.0.0.0	24	0.0.0.0	1: Ethernet

1

Select All Ports | Deselect All Ports | Remove Port(s) | Selected Ports: 1

Main Port Properties | Address Properties

2

Physical Port Properties

Inter-Frame Gap: 20

Speed Reduction: 0 ppm

Enable PAUSE Mode:

Latency Offset: 0 ns

3

Port Rate Cap

Rate Cap Type: Physical Port Rate

Rate Cap Value: 1000.00 Mbit/s

4

Peer Nego

Enable Auto Negotiation:

MDI/MDIX Mode: Auto

Result Data | Stream Progress Counters | Configuration Errors

Progress: 0% | Ready | Test not running | Test Time: 00:00:00 | Duration: 00:00:00 | User: dan

CONFIGURE PORT(S)

1 Port Addressing

Column	Explanation
Port Name	The name (ID and type) of the port.
Port Speed	The physical port speed to use in the test. Normally this should be left at the default AUTO value, but certain DUTs require that the port speed is fixed to a specific rate.
IP Address	The IP address that you want to use for the port. (*)
Prefix	The decimal network prefix for the address. (*)
Gateway Address	The gateway address for the assigned IP address. This field may be left empty if the ports are located on the same IP subnet. (*)
Protocol Segment Profile	The protocol segment profile to use for this port. Profiles can be created, edited and deleted in the separate Protocol Segment Profiles panel.

CONFIGURE PORT(S)

2 **Physical Port Properties**

Inter-Frame Gap

- Set to 20 -> 12B (Minimum allowed by Ethernet at 100% load)
- (12+8B Preamble equals 20B)
- can be set to 16B to achieve >100% load for port pressure testing

* Values range between 16B-20B

Adjust PPM

Specifies an optional speed reduction on the transmit side of the port, expressed as a ppm value.

Enable PAUSE mode

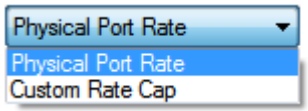
- This means enable **Flow Control on this port**

Latency offset

- Used to automatically eliminate transceiver + cable latency.

3 **Rate Cap Type:**

Specifies whether to override the physical port speed with the custom speed specified below.



4 Enable/Disable Auto Negotiation.

CONFIGURE PORT(S)

Xena2544 v2.15 - <no name> (*)

File Edit View Test Control Options Help

Add Chassis | Start Stop Cancel | Exit

Physical Ports

Name		ID	Used	Owner
Chassis 0 'XB live				
Module 0, M6SFP				
Port 0, SFP-E		P-0-0-0	☑	**dan**
Port 1, SFP-E		P-0-0-1	☐	
Port 2, SFP-O LR		P-0-0-2	☐	lpk
Port 3, SFP-O LR		P-0-0-3	☐	lpk
Port 4, SFP-100FX		P-0-0-4	☑	
Port 5, SFP-100FX		P-0-0-5	☑	
Module 1, M6SFP			☐	
Module 2, M6SFP+			☐	
Module 3, M2SFP+			☐	
Port 0, SFP+ SR		P-0-3-0	☐	
Port 1, SFP+ SR		P-0-3-1	☐	
Module 4, M1CFP100			☐	
Module 6, M6SFP			☐	
Module 7, M6SFP			☐	
Module 8, M6SFP			☐	
Module 9, M6SFP			☐	
Module 10, M6SFP			☐	
Module 11, M6SFP			☐	

Expand All | Collapse All

Start Page | Test Configuration | **Selected Ports** | Multi-Stream Configuration | Protocol Segment Profiles

Select ports in the Physical Ports panel and drag them here to include them in the test.

Port Name	Port Speed	IP Address	Prefix	Gateway Address	Protocol Segment Profile
P-0-0-0 (SFP-E 10/100/1000M)	AUTO	0.0.0.0	24	0.0.0.0	1: Ethernet
P-0-0-4 (SFP-100FX LR 1310 nm)	<fixed>	0.0.0.0	24	0.0.0.0	1: Ethernet
P-0-0-5 (SFP-100FX LR 1310 nm)	<fixed>	0.0.0.0	24	0.0.0.0	1: Ethernet

Select All Ports | Deselect All Ports | Remove Port(s) | Selected Ports: 1

Main Port Properties | Address Properties

External Address Properties

Public IP Address:

Public IP Prefix: 24

Remote Loop IP Address:

Remote Loop MAC Address: 00 : 00 : 00 : 00 : 00 : 00

5

Result Data | Stream Progress Counters | Configuration Errors

Progress: 0% | Ready | Test not running | Test Time: 00:00:00 | Duration: 00:00:00 | User: dan

5 Public Address

Property	Explanation
Public IP Address:	If a port is located behind a NAT firewall/router it may be necessary to provide the public IP address offered by the NAT firewall/router. The Xena2544-2G will then perform an ARP request for the public IP address before starting the test, to avoid packet loss due to an initial ARP phase. The real (internal) IP address of the port must still be configured in the main port grid as it may be used to send Gratuitous ARP packets from the port to the router before the test starts.
Public IP Prefix:	The network prefix value for the public IP address.

Remote Loop Address

Remote Loop IP Address:	When a port with layer-3 protocol segments (IPv4/IPv6) has been configured as a looped port you must specify the IP address of the remote port so the Xena tester can perform an ARP request for the MAC address.
Remote Loop MAC Address:	When a port with pure layer-2 protocol segments (Ethernet + optional VLAN) has been configured as a looped port you must specify the MAC address of the remote loop port to avoid excessive flooding.

PROTOCOL SEGMENT PROFILES

Xena2544 v2.15 - <no name> (*)

File Edit View Test Control Options Help

Add Chassis | Start | Stop | Cancel | Exit

Physical Ports

Name	ID	Used	Owner
Available Chassis			
Chassis 0 'XB live			
Module 0, M6SFP			
Port 0, SFP-E	P-0-0-0	✓	**dan**
Port 1, SFP-E	P-0-0-1		
Port 2, SFP-O LR	P-0-0-2		lpk
Port 3, SFP-O LR	P-0-0-3		lpk
Port 4, SFP-100FX	P-0-0-4	✓	
Port 5, SFP-100FX	P-0-0-5	✓	
Module 1, M6SFP			
Module 2, M6SFP+			
Module 3, M2SFP+			
Port 0, SFP+ SR	P-0-3-0		
Port 1, SFP+ SR	P-0-3-1		
Module 4, M1CFP100			
Module 6, M6SFP			
Module 7, M6SFP			
Module 8, M6SFP			
Module 9, M6SFP			
Module 10, M6SFP			
Module 11, M6SFP			

Expand All | Collapse All

Start Page | Test Configuration | Selected Ports | Multi-Stream Configuration | **Protocol Segment Profiles**

Defined Segment Header Profiles

Segment Header Summary	Use Count	Modifiers
1: Ethernet	3	0
2: Ethernet / VLAN (0)	0	0
3: Ethernet / VLAN (0) / VLAN (0)	0	0
4: Ethernet / IPv4	0	0
5: Ethernet / IPv4 / [illegible]/D:0)	0	0
6: Ethernet / IPv6	0	0

1

Add Profile | Remove Profile | Restore Default Profiles

Segment/Field Name	Raw Value	Named Values
Ethernet - Ethernet II (14 bytes)		
VLAN - Virtual LAN (4 bytes)		

Segments: Add, Remove

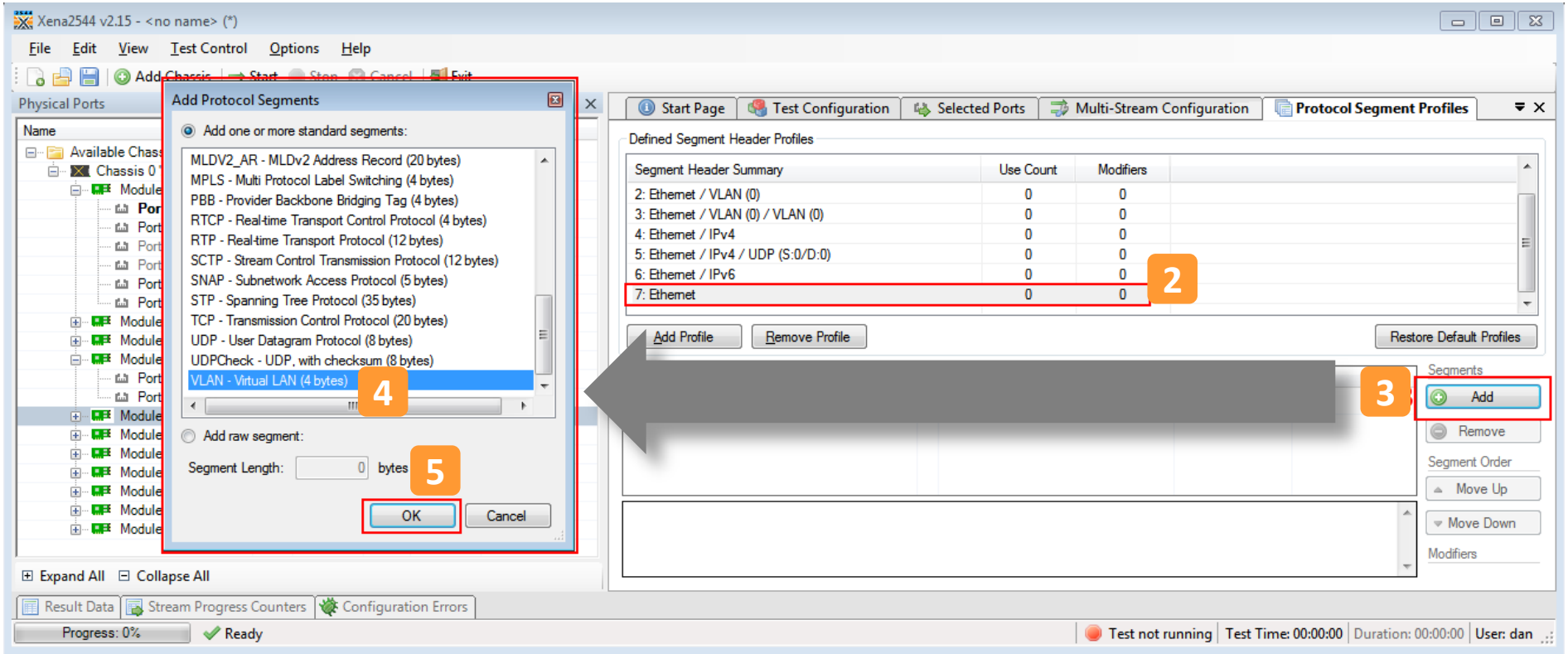
Segment Order: Move Up, Move Down

Result Data | Stream Progress Counters | Configuration Errors

Progress: 0% | Ready | Test not running | Test Time: 00:00:00 | Duration: 00:00:00 | User: dan

PROTOCOL SEGMENT PROFILES

2. Select the new Profile.
3. Click “Add” to add additional headers.
4. Choose Segment.
5. Click “OK”.



PROTOCOL SEGMENT PROFILES

Available Profiles List

The list-view at the top show all defined profiles.

Managing Profiles

You can create and delete profiles to match the need of the current test scenario.
To create a new profile press the **Add Profile** button.
To delete a profile select it in the list view and press the **Remove Profile** button.

Default Profiles

When you create a new Xena2544-2G configuration it will be populated with a number of default profiles.
You can however freely modify and even delete one or more of the default profiles.

Profile Editor

You can edit each profile by selecting it in the top list-view and using the tree-view control below.

PROTOCOL SEGMENT PROFILES

Add and Remove Segment Headers

To add a new segment header press the **Add** button in the **Segments** section to the right.

You will then be presented with a dialog listing all built-in segment types from which you can select one or more types to be included.

If you want to use a segment not currently supported by Xena2544 you can add a **raw segment** and specify the length in bytes.

You can then afterwards edit the values in the resulting segment using the hex editor at the bottom.

Editing Field Values

The segment editor provides a tree-view similar to the one found in the Wireshark protocol analyzer.

You can thus expand each segment branch to view and optionally modify the various field values.

Each field title is preceded with a small icon indicating the type of field value (decimal, hexadecimal, binary or IPv4/IPv6 address).

PROTOCOL SEGMENT PROFILES

MAC and IP Addresses

The address fields in the Ethernet and IP section headers will usually be overridden by the Xena2544 when the test-streams are created:

- The **Source MAC (SMAC) address field** in the first Ethernet segment will be set to the MAC address of the source port.
- The **Destination MAC (DMAC) address field** in the first Ethernet segment will be set to the MAC address of the destination port.

If an IP segment has been defined and a gateway IP address is defined for a source port, Xena2544 will still attempt to resolve the MAC address of the gateway using ARP or NDP and will then use this MAC address as the DMAC.

The IP Source/Destination Address fields in the IP segment header will be set to the values configured on the ports.

This replacement will only be performed if you leave the fields at their default (all-zeros) value. If you specify anything else this value will be used instead.

Topology and Frame Content

Xena2544 v2.15 - <no name> (*)

File Edit View Test Control Options Help

Add Chassis | Start | Stop | Cancel | Exit

Physical Ports

Start Page | Test Configuration | Selected Ports | Multi-Stream Configuration

Topology and Frame Content | Test Execution Control | Test Types Configuration

1

Overall Test Topology

Topology
- Pairs
- Blocks
- Mesh

Direction
- East -> West
- West -> East
- Bidirectional

2

Frame Sizes

Fixed Sizes Per Trial
- IEEE Default 64,128,256,512,1024,1280,1518
- Custom Sizes 512
- Size Range Start size: 100 End size: 1500 Step size: 100

Varying Sizes Per Trial
- Incrementing Min. size: 64 Max. size: 1500
- Butterfly Sizes
- Random Sizes
- Mixed Sizes Configure ...

3

Frame Test Payload

Use Micro-TPLD if needed: ☐ Payload Type: Incrementing

Pattern: 00 00 00 00 00 00 / 00 00 00 00 00 00 / 00 00 00 00 00 00

Result Data | Stream Progress Counters | Configuration Errors

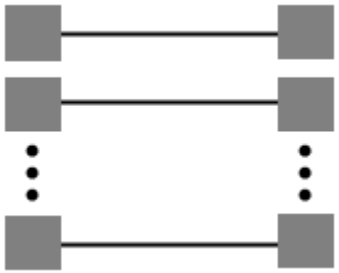
Progress: 0% | Ready | Test not running | Test Time: 00:00:00 | Duration: 00:00:00 | User: dan

Topology and Frame Content

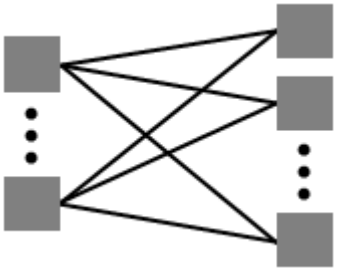
1

Pairs	• Each port in the definition is paired with another port. • Traffic will only flow between defined pairs. • This requires the definition to have an even number of ports.
Blocks	• The ports are divided into two groups, EAST and WEST. • Each member of one group will then send traffic to every member of the other group, depending on the Direction setting.
Mesh	• Represents a true multipoint topology. • Every port sends traffic to all other ports in the definition. • A Mesh is by nature always bidirectional.

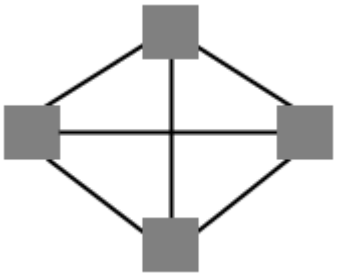
Pairs



Blocks



Mesh



Topology and Frame Content

1

East -> West	Marks a unidirectional traffic pattern. ports in the EAST group will transmit data. Only ports in the WEST group will receive data.	WEST ← EAST
West -> East	Marks a unidirectional traffic pattern. Only ports in the WEST group will transmit data. Only ports in the EAST group will receive data.	WEST → EAST
Bidirectional	The traffic flows both ways. Each port will both transmit and receive data.	WEST ↔ EAST

Topology and Frame Content

2

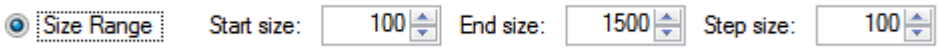
IEEE Default:

The default setting is to use the IEEE standard frame sizes : 64, 128, 256, 512, 1024, 1280 and 1518 bytes.

The following options are also available:

Custom Sizes:

Lets you specify a comma-separated list of values. This is e.g. useful if you only want to test using one or two packet sizes

Size Range: 

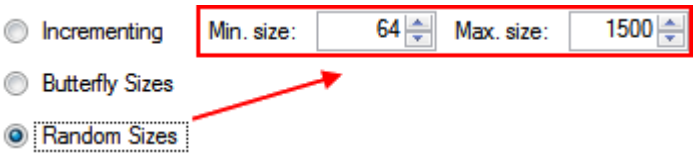
Lets you specify a range of packet sizes and the steps.

Incrementing Sizes:

Lets you specify a Min and Max size – the sizes: Min,Min+1,Min+2,...,Max.

Butterfly Sizes: 

Lets you specify a Min and Max size – the sizes: Min,Max,Min+1,Max-1,Min+2,Max-2,...

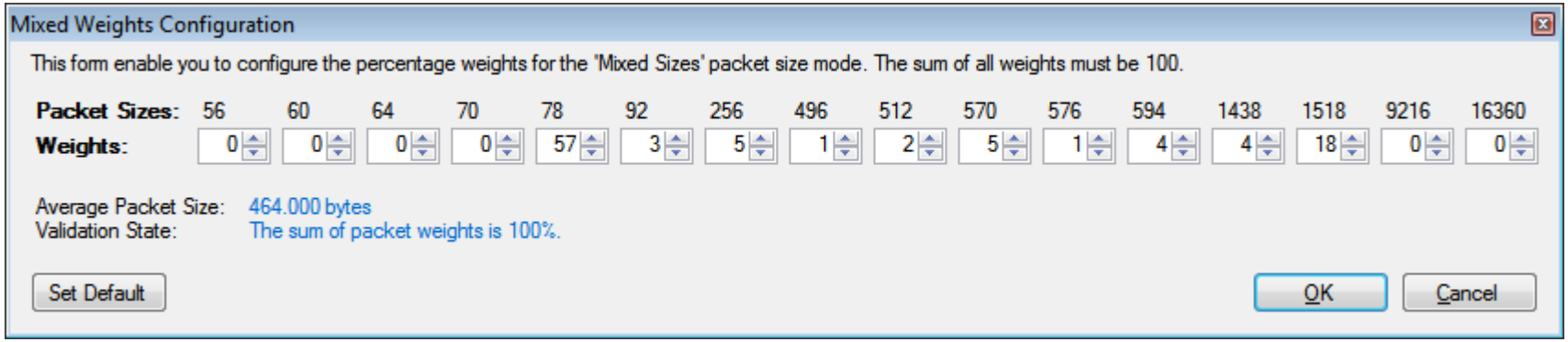
Random Sizes: 

Lets you specify a Min and Max size – The sizes will vary among Min – Max randomly.

Topology and Frame Content

2 *Mixed Sizes*:

The Xena tester will use a more or less random mix of packet sizes when sending traffic.



**Note that the use of this option will introduce a slight inaccuracy when calculating various results, as the packet sizes are not deterministic. A weighted average will be used.*

Topology and Frame Content

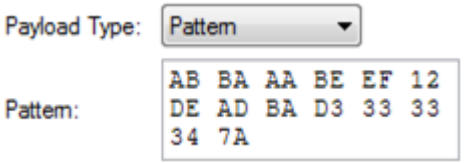
3 *Frame Test Payload*:

Use Micro TPLD if Needed:

When using regular TPLD 20B shall be used.
*This means for ETH+IP+UDP(+TPLD)+FCS = 14+20+8(+20)+4 = 66
With Micro TPLD the TPLD size to 6B.

Payload Type:

Pattern mean you can set your own custom pattern:



Incrementing means "000102030405…FF00010203…"
provides built-in data integrity check for payload.

PRBS provides Pseudo Random Bit Sequence of 2^31-1 pattern
No data integrity with adding Payload checksum in port properties.

Test Execution Control

Xena2544 v2.15 - <no name> (*)

File Edit View Test Control Options Help

Add Chassis | Start | Stop | Cancel | Exit

Physical Ports

Start Page | Test Configuration | Selected Ports | Multi-Stream Configuration | Protocol Segment Profiles

Topology and Frame Content | Test Execution Control | Test Types Configuration

1 Flow Creation

- Stream-based
- TID Alloc. Scope: Configuration Scope
- Modifier-based
- MAC Base Address: 04 F4 BC

2 Port Scheduling

- Speed Reduct. Sweep: ☐
- Port Stagger Steps: 0
- Resulting Delta: 0 microsecs

3 MAC Learning Options

- MAC Learning Mode: Every Trial
- Learning Frame Count: 1 frames
- Toggle Port Sync: ☑
- Sync Off Period: 1 seconds

4 ARP/NDP Learning

- Enable Refresh: ☑
- Refresh Period: 4.00 seconds
- GW MAC as DMAC: ☑

5 Flow-Based Learning

- Use Flow-Based Learning Preamble: ☐
- Learning Frame Count: 1 frames
- Delay After Preamble: 500 msecs

Result Data | Stream Progress Counters | Configuration Errors

Progress: 0% | Idle | Test not running | Test Time: 00:00:00 | Duration: 00:00:00 | User: dan

Test Configuration – Test Execution Control

1 *Flow Creation*:

<u>This property determines how test flows between ports are created.</u>

The default **Stream-based** setting will use one Xena stream for each flow from one port to another.

This enables fine-grained per-port statistics and also lets you specify field modifiers for various protocol fields. But as the number of streams that can be created on each test port is limited this will limit the total number of test ports in your configuration.

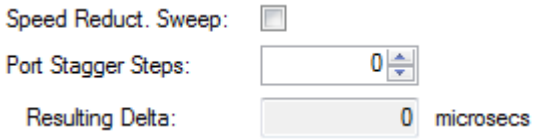
If you encounter this limitation in a Layer-2 test you can select the **Modifier-based** option instead. In this mode Xena2544-2G will use a single stream for all flows from one port instead of one stream for every flow between two ports.

This option will however force Xena2544 to override the native port MAC addresses. The user can specify the 3 upper bytes of the MAC address using the **MAC Base Address option but the lower part of the address will be assigned sequentially.*

Test Execution Control

2 *Port Scheduling*:

The **Speed Reduction Sweep** property assigns a small speed reduction value to each port on a test module, so they get a different value.



This property is only available for **Blocks** and **Mesh** topologies.

You can also have Port Stagger Steps (1 Step = 64 microseconds).

Test Execution Control

3 *MAC Learning Options*:

The **MAC Learning Mode** property can be used to instruct the testers to emit initial MAC learning packets in order for any network switches to learn the MAC addresses of the ports and avoid excessive flooding of packets.

You can specify if you want MAC learning to be performed either at the start of every trial (the default), once when the test starts or not at all.

You can also specify how many time each learning packet will be repeated every time with the **Learning Frame Count** option.

If the **Toggle Sync State** property is checked the sync state for all selected ports will be toggled off and on at the start of each test trial.

This may ensure that the DUTs MAC-tables are cleared at the start of each test.
The **Sync State Off Period** is the number of seconds to keep the port sync state off.

Test Execution Control

4 *ARP/NDP Learning*:

These options control how the Xena tester advertises the IP addresses configured for its ports.

The tester will use ARP for IPv4 and NDP for IPv6.

If the **Enable Refresh** checkbox is checked the tester will periodically emit ARP requests (for IPv4) or Neighbor Advertisement requests (for IPv6). The period can be set using the **Refresh Period** field.

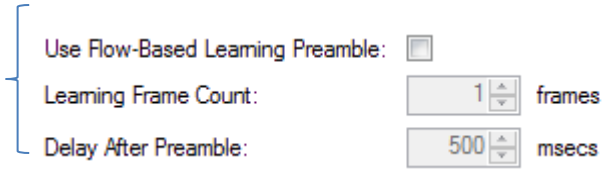
This will prevent the ARP/NDP caches in the attached router from timing out during long test period thus causing a packet loss.

If the test uses multiple ports and/or you have used modifiers to emulate multiple IP address on one port, the number of periodic refresh requests may be large. The tester will retransmit all refresh requests within the specified period, but it will not send them all in one batch. The tester will distribute the necessary requests evenly over the specified period.

Test Execution Control

5 *Flow-Based Learning*:

- Check to use one learning frame per flow.
- Some DUT`s have learning curve for new flows.
- To eliminate the initial latency spikes
- Select the number of frames to be sent per flow.
- Select Delay After Preamble.



Test Types Configuration - Throughput

Xena2544 v2.15 - <no name> (*)

File Edit View Test Control Options Help

Add Chassis | Start | Stop | Cancel | Exit

Start Page | Test Configuration | Selected Ports

Topology and Frame Content | Test Execution Control | Test Types Configuration

Physical Ports

Available Tests
- Throughput Test
- Latency and Jitter Test
- Frame Loss Rate Test
- Back-to-Back Test

Enable All | Disable All

Throughput Test Options

Common Options

Duration: 1 seconds

Iterations: 1

1

Rate Iteration Options

Initial Rate: 100.000 percent

Minimum Rate: 0.100 percent

Maximum Rate: 100.000 percent

Resolution Rate: 0.500 percent

Use Pass Threshold:

Pass Threshold: 0.000 percent

Acceptable Loss: 0.0000 percent

Rate Result Scope: Common Result

Enable Fast Search:

2

Result Data | Stream Progress Counters | Configuration Errors

Progress: 0% | Test not running | Test Time: 00:00:00 | Duration: 00:00:00 | User: dan

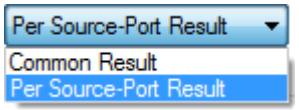
Test Types Configuration-Throughput

1 *Common Options:*

- ***Duration**: Fill in the duration of each iteration (at least 60sec is RFC2544 compliant).*
- ***Iterations**: Fill in the number of iteration per this test.*

2 *Rate Iteration Options :*

- ***Initial Rate:** The test will start with this rate.*
- ***Minimum Rate:** The test will not go below this value.*
- ***Maximum Rate:** The test will not go above this value.*
- ***Resolution Rate:** The resolution will determine the result resolution*
- *e.g. End Pass 99.9% or higher resolution 99.994%.*
- ***User Pass Threshold:** Choose if Pass Threshold will be used.*
- ***Pass Threshold:** Select a lower rate that would be accepted as Pass.*
- ***Acceptable Loss:** Select a value that is considered acceptable and the rate should not change due to packet loss.*
- ***Rate Result Scope:** Determines the scope of the rate result.*



The **Common Result** setting will iterate towards a single throughput rate result for all ports, which will be the lowest common rate found. This is the default setting.
If the **Per Source-Port Result** setting is selected Xena2544-2G will try to iterate a separate rate value for each source port. This will obviously produce a (potentially different) result for each source port.

Test Types Configuration-Throughput

2 *Rate Iteration Options* :

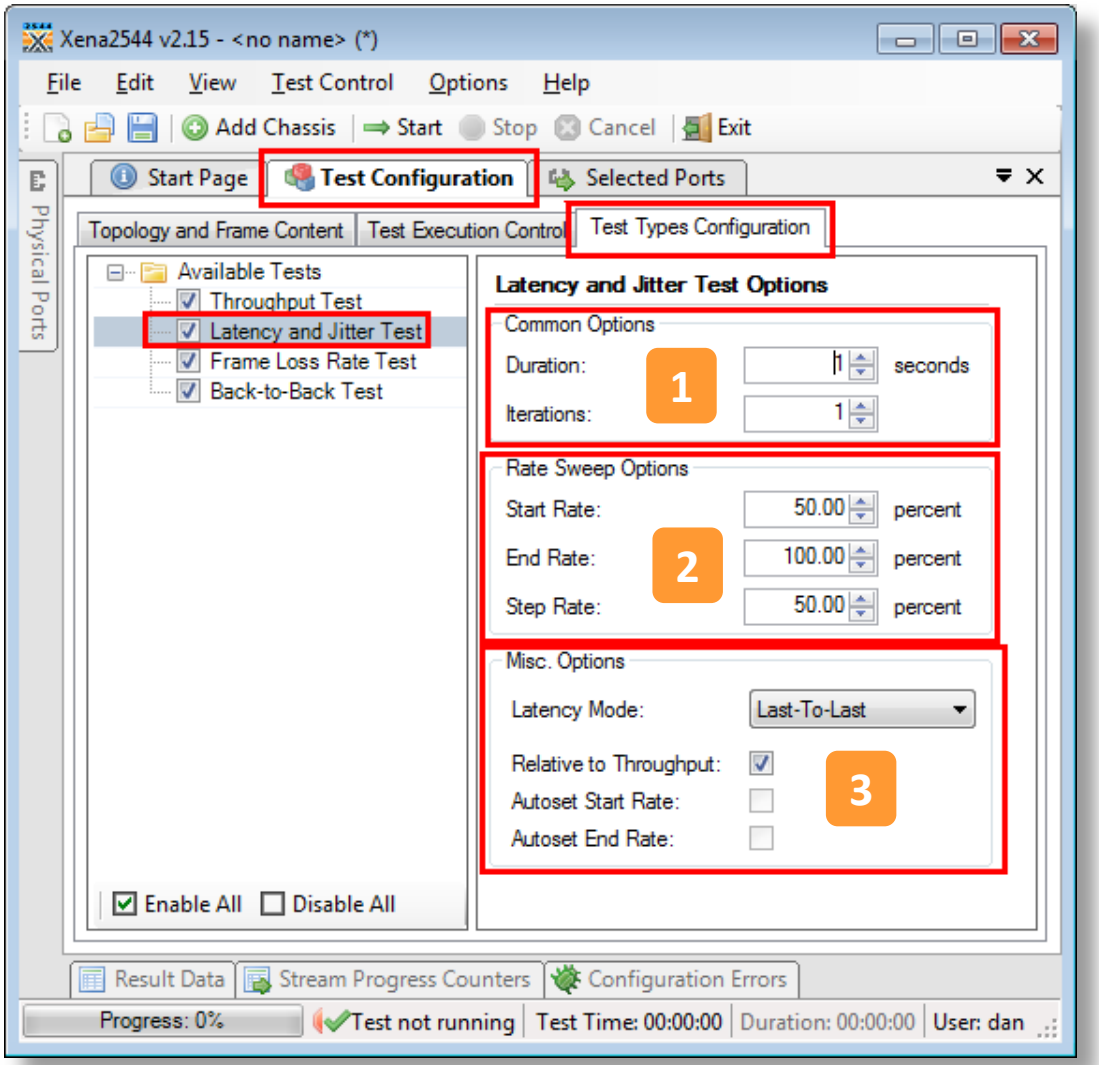
Enable Fast Search:

The default iteration algorithm used is a standard binary search, where the next attempted rate is found as the mean value of the sum of last passed and the last failed rate.

If the fast search property is enabled the algorithm will take the measured loss rate into account when iterating down.

This may in many cases result in a substantial reduction in the number of trials needed to reach the throughput rate result.

Test Types Configuration-Latency & Jitter



Test Types Configuration-Latency & Jitter

1 *Common Options:*

***Duration**: Fill in the duration of each iteration (at least 60sec is RFC2544 compliant).*

***Iterations**: Fill in the number of iteration per this test.*

2 *Rate Sweep Options:*

***Start Rate:** The test will start with this rate.*

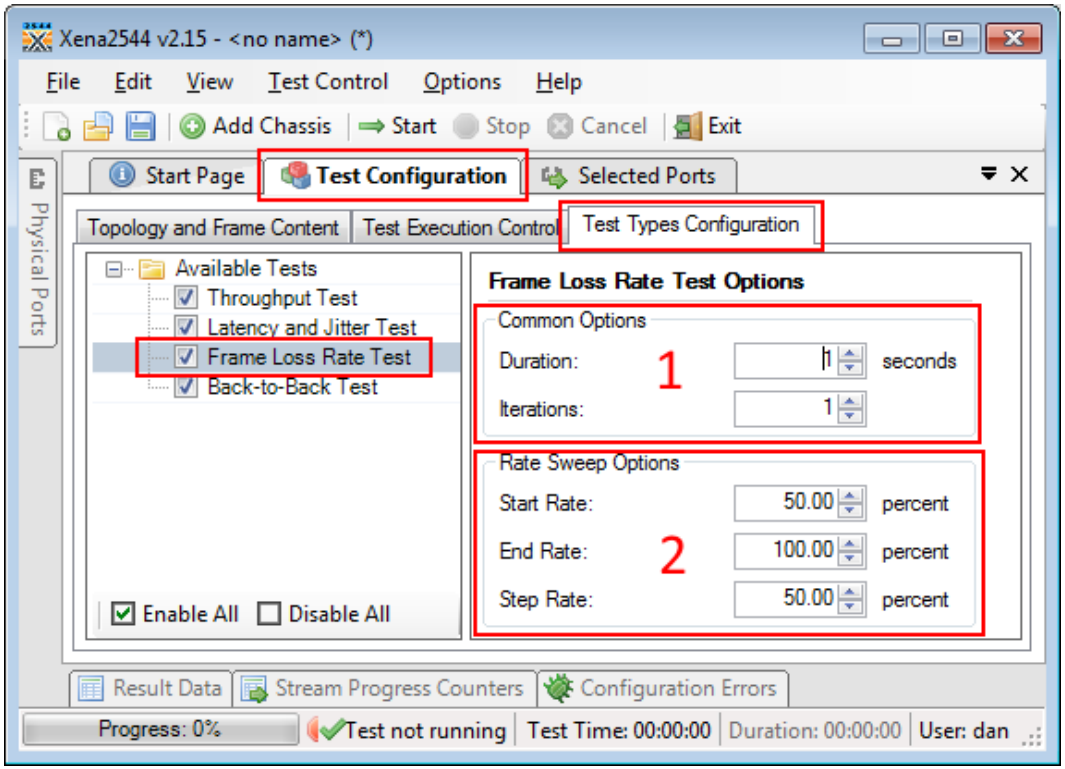
***End Rate:** The test will not go below this value.*

***Step Rate:** The rate will increment by this value.*

3 *Misc. Options:*

Latency Mode:	The latency mode used when measuring the latency.
Relative to Throughput:	If checked the starting and ending rates will be calculated relative to the result from a preceding throughput test for the same frame size. If the throughput test has not been performed in the same test this setting is ignored.
Autoset Start Rate:	If checked the starting rate will be set to the result from a preceding throughput test for the same frame size. If the throughput test has not been performed in the same test this setting is ignored.
Autoset End Rate:	If checked the ending rate will be set to the result from a preceding throughput test for the same frame size. If the throughput test has not been performed in the same test this setting is ignored.

Test Types Configuration-Frame Loss Rate



1 *Common Options:*

***Duration**: Fill in the duration of each iteration (at least 60sec is RFC2544 compliant).*

***Iterations**: Fill in the number of iteration per this test.*

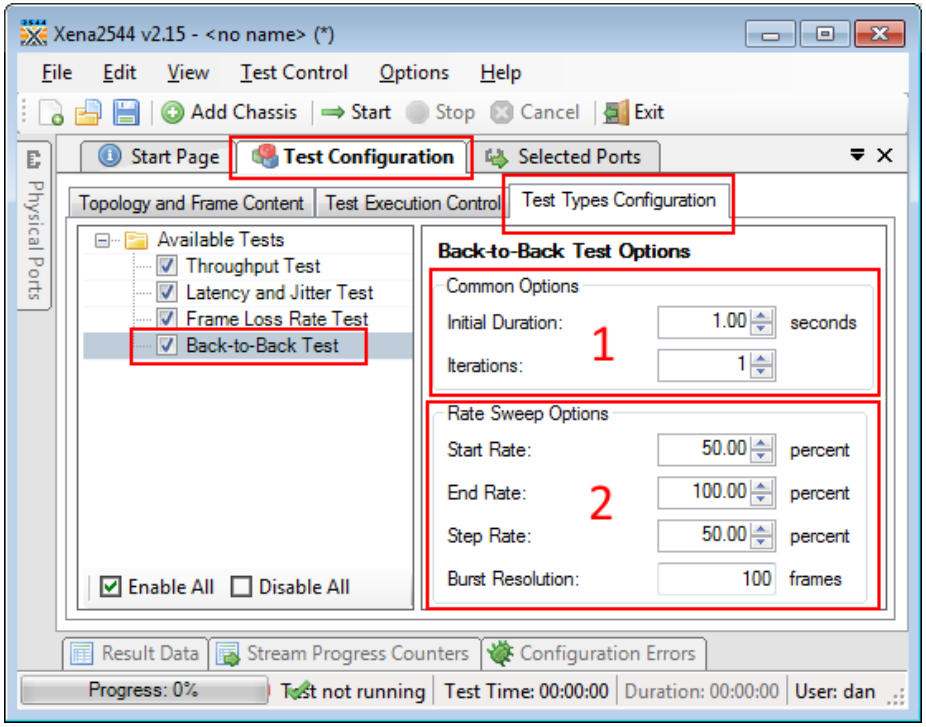
2 *Rate Sweep Options :*

***Start Rate:** The test will start with this rate.*

***End Rate:** The test will not go below this value.*

***Step Rate:** The rate will increment by this value.*

Test Types Configuration-Back-To-Back



1 *Common Options:*

***Duration**: Fill in the duration of each iteration (at least 60sec is RFC2544 compliant).*

***Iterations**: Fill in the number of iteration per this test.*

2 *Rate Sweep Options :*

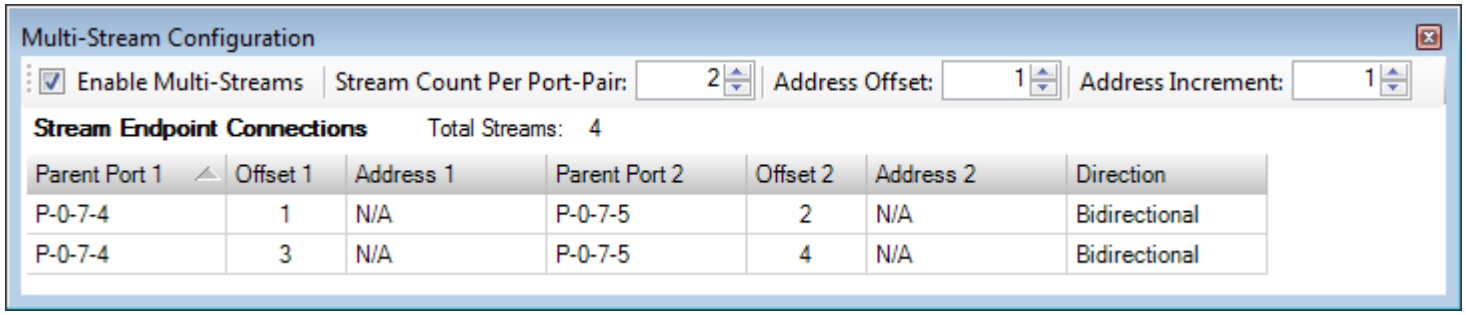
***Start Rate:** The test will start with this rate.*

***End Rate:** The test will not go below this value.*

***Step Rate:** The rate will increment by this value.*

***Burst Resolutions:** Resolution of burst size changes to achieve Pass/Fail.*

MULTI-STREAM CONFIGURATION



Parent Port 1	Offset 1	Address 1	Parent Port 2	Offset 2	Address 2	Direction
P-0-7-4	1	N/A	P-0-7-5	2	N/A	Bidirectional
P-0-7-4	3	N/A	P-0-7-5	4	N/A	Bidirectional

Each row in the table represent a "stream endpoint connection" which denotes the logical connection between two test port pairs.

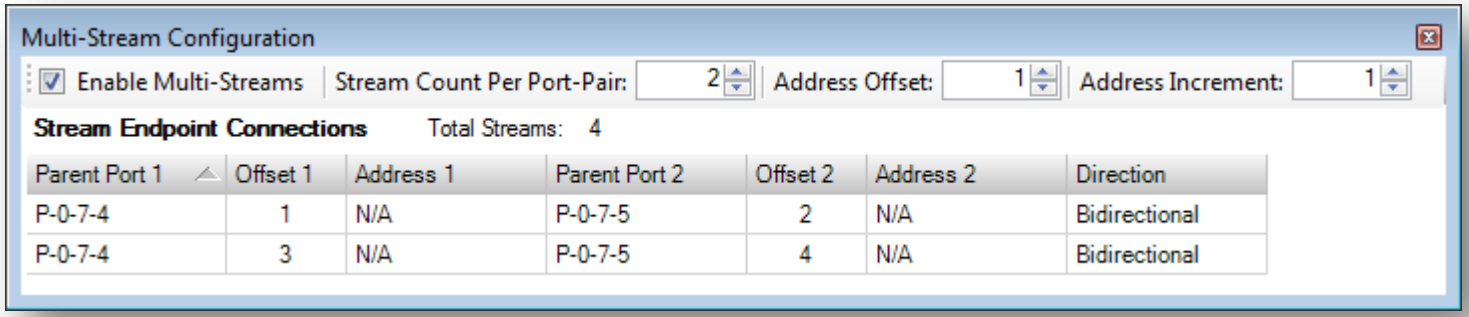
The connection can be uni-directional – one stream, created on the source port.

Or it can be bi-directional – so two streams, i.e. one stream created on each port.

The columns in the table show the actual values used for each stream endpoint connection. For an IP configuration the **Address** columns will show the resulting IP addresses.

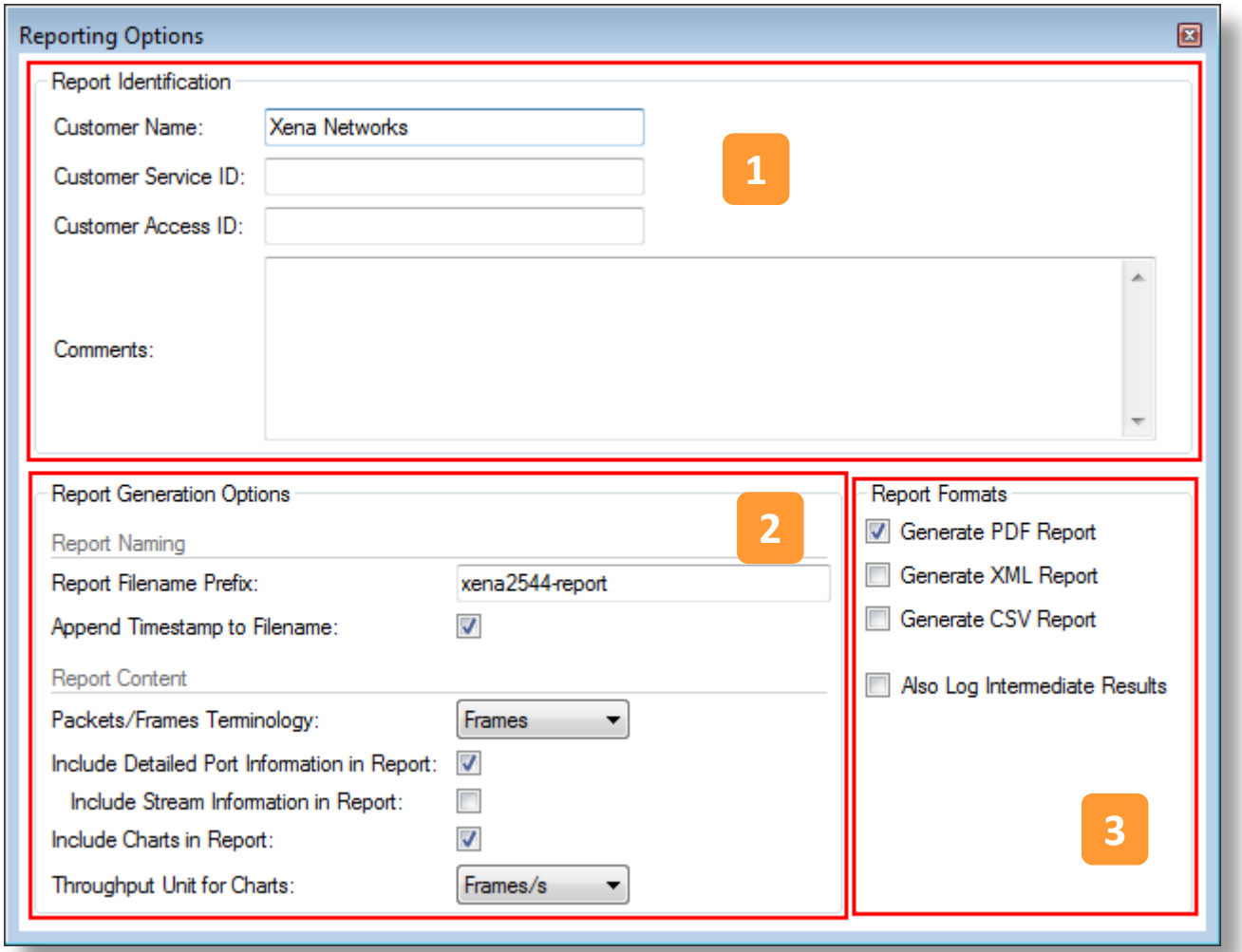
If the configuration uses pure layer-2 segment profiles (no IP segment) the **Address** columns will show the resulting MAC addresses.

MULTI-STREAM CONFIGURATION



Enable Multi-Streams:	Checking this option will enable the multi-stream function for the current Xena2544 configuration.
Stream Count Per Port-Pair:	This value sets the stream count per port pair.
Address Offset:	The offset from zero (0) used when auto-generating the incrementing addresses. This can be used to avoid using the default gateway for an IP subnet (which usually is xxx.xxx.xxx.1).
Address Increment:	The incrementing value used when auto-generating the addresses.
MAC Address Prefix:	The MAC address prefix used when auto-generating the MAC addresses. This can be used to avoid collision with the factory-assigned Xena testport MAC addresses.

REPORTING


Reporting Options
Report Identification
Customer Name:
Xena Networks
Customer Service ID:
Customer Access ID:
Comments:
1
Report Generation Options
2
Report Naming
Report Filename Prefix:
xena2544-report
Append Timestamp to Filename:
Report Content
Packets/Frames Terminology:
Frames
Include Detailed Port Information in Report:
Include Stream Information in Report:
Include Charts in Report:
Throughput Unit for Charts:
Frames/s
Report Formats
Generate PDF Report
Generate XML Report
Generate CSV Report
Also Log Intermediate Results
3

1 *Report Identification:*

This section contains a number of options that can help identify the test context.

Customer Name:
The name of the customer for which the test is performed.

Customer Name: Xena Networks

Customer Service/Access Id:
These two options lets you identify the network circuits you are testing.

Customer Service ID:

Customer Access ID:

Comments:
Lets you provide any multi-line comments for the test configuration.

Comments:

1 *Report generation Options*:

Report Naming

Report Filename Prefix:
Specifies the prefix for the report filename.

Append Timestamp to Filename:
Adds a timestamp on the form <YYYYMMDD-HHMMSS> to the filename prefix.

Report Content

Packets/Frames Terminology:
This lets you choose if the units of data are referred to as "packets" or "frames".

Include Detailed Port Information in Report:
Click to include detailed results for each port (otherwise only totals will be reported)

Include Charts in Report:
Click to include bar charts of the test results (only applicable for PDF reports)

Throughput Unit for Charts:
Choose frames/second or bits/second as the unit for throughput charts.

3 *Report Formats:*

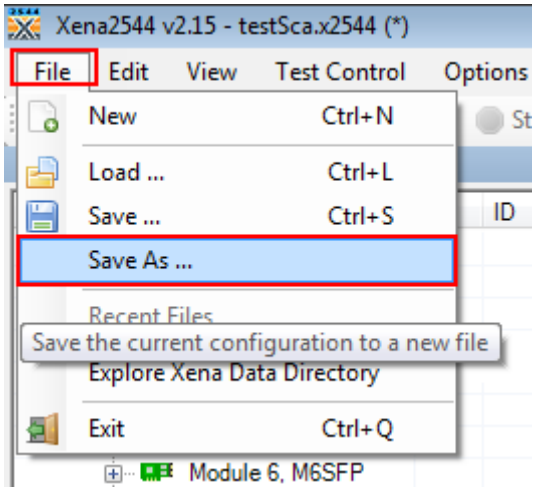
This section lets you to select which types of report(s) will be generated.
You can enable several types. The generated report files will be given a file extension that matches the selected type i.e. ".pdf" for PDF files and so forth.

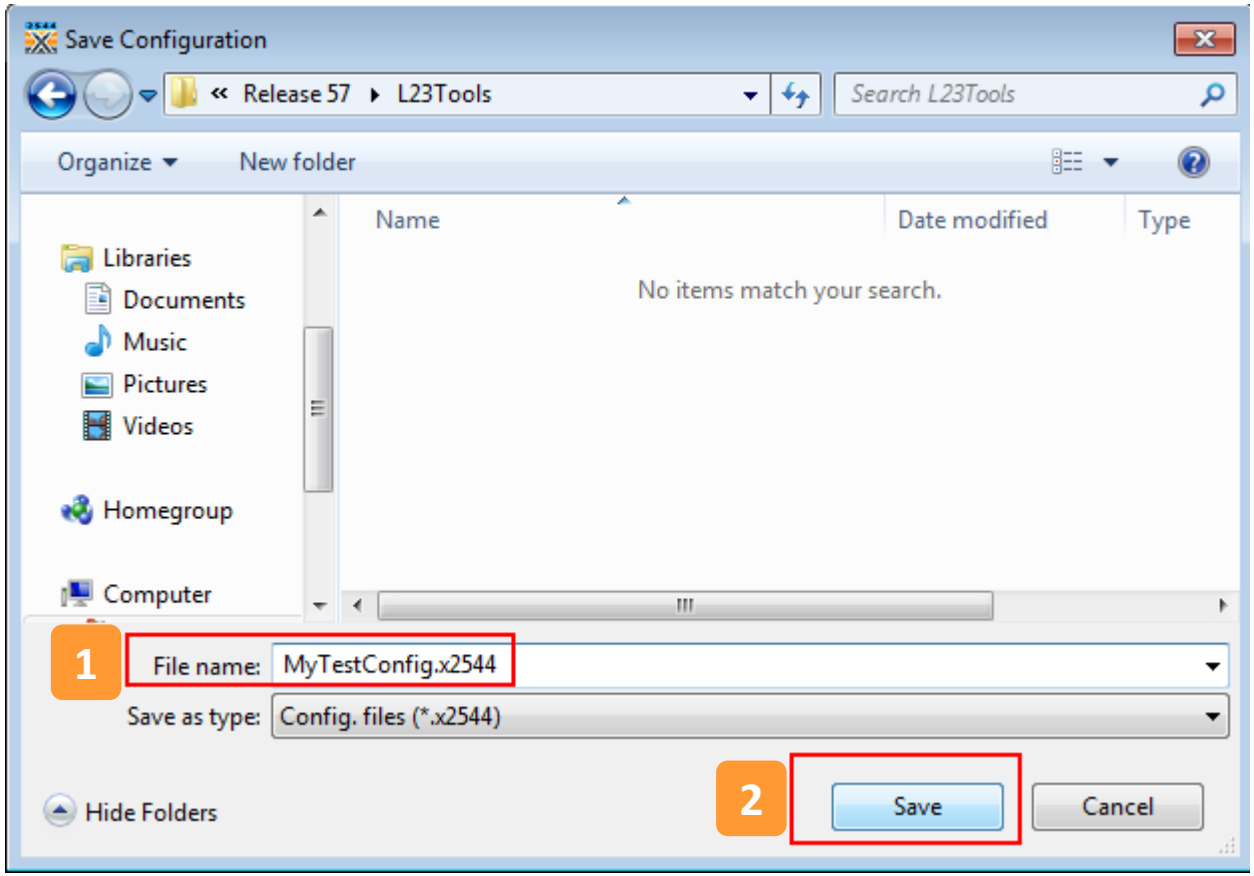
***XML Report Specification**

You can find the specification for the XML Report here.

Xena RFC2544 CLI OPTION

1 Give configuration an appropriate name.





Xena RFC2544 CLI OPTION

2

Use the Xena2544.Exe to parse and run your configuration:

* This one command can be executed from a script via one line of code.

e.g. TCL : **EXEC** "C:/…/Xena2544.exe –ec MyTestConfig.x2544"

C:\Windows\system32\cmd.exe

```
C:\Program Files (x86)\Xena Networks\Release 57\L23Tools>Xena2544.exe -ec MyTestConfig.x2544

C:\Program Files (x86)\Xena Networks\Release 57\L23Tools>INFO: Loading test configuration MyTestConfig.x2544
INFO: Activating chassis: 131.164.227.250
INFO: Logon to 131.164.227.250:22606 successful
INFO: All chassis connected and read
INFO: Starting subtest 'Throughput Test'
INFO: Reserving ports
INFO: Resetting used ports
INFO: Configuring ports
INFO: Toggling port sync state
INFO: InitTrial: 64 byte packets, 100.00% traffic rate, iteration 1
INFO: Setting up streams
INFO: Sending MAC learning packets
INFO: Traffic on source port(s) started
INFO: Traffic on source port(s) stopped
INFO: Toggling port sync state
INFO: InitTrial: 128 byte packets, 100.00% traffic rate, iteration 1
INFO: Setting up streams
INFO: Sending MAC learning packets
INFO: Traffic on source port(s) started
INFO: Traffic on source port(s) stopped
INFO: Ending subtest 'Throughput Test'
INFO: All tests completed
INFO: PDF report written to [C:\Users\dan\Documents\Xena\Xena2544-2G\Reports\xena2544-report-20141204-155436.pdf]
INFO: Test execution completed
```

Xena RFC2544 CLI OPTION

3 Use “—help” to learn about other parameters options:

cmd - Shortcut

```
c:\Program Files (x86)\Xena Networks\Release 57\L23Tools>Xena2544.exe --help

c:\Program Files (x86)\Xena Networks\Release 57\L23Tools>Xena2544 version 2.15
Copyright (C) 2014 Xena Networks ApS

Valid options:

  -c, --config        Load a test configuration file with the specified path.
  -e, --execute       Execute the specified test configuration file (requires
                      -c <file>).
  -u, --user          Set the username used when logging on to Xena testers
                      (default: xenarun).
  -r, --reportpath    Set the path where reports are saved.
  -o, --company       Set the company name used in reports.
  -l, --logo          Set the path to the report logo file.
  -f, --clogfile      Path to logfile receiving console output
  -h, --help          Display this help screen.
```

-c, --config	Load a test configuration file with the specified path.
-e, --execute	Execute the specified test configuration file (requires -c <file>). If this option is used the program will not show the GUI but will run in command line mode.
-u, --user	Set the username used when logging on to Xena testers (default: xenarun).
-r, --reportpath	Set the path where reports are saved.
-o, --company	Set the company name used in reports.
-l, --logo	Set the path to the report logo file.
-h, --help	Display this help screen.

WANT MORE INFORMATION?

RESOURCES

Website: www.xenanetworks.com/resources/

Email: support@xenanetworks.com