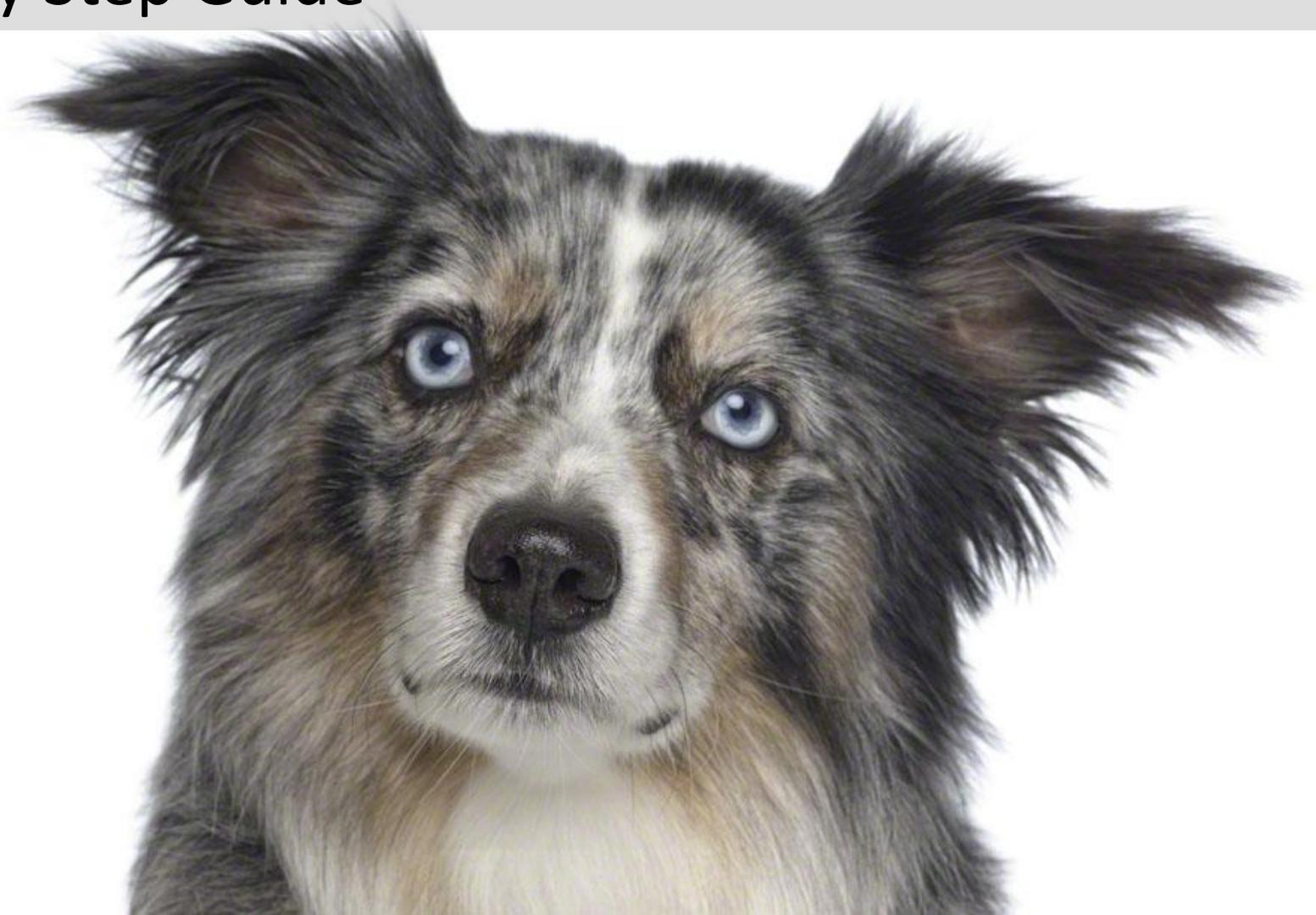




Xena3918 (v1.8)

Step by Step Guide



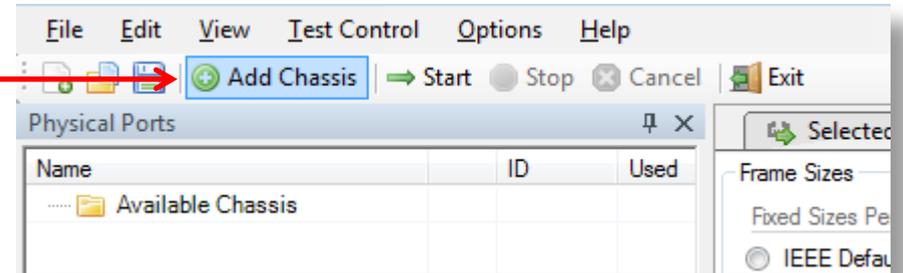


-  Add Chassis
-  Add/Configure Port/s
-  Protocol Segment Profiles
-  Unicast Configuration
-  Multicast Configuration
-  General Test Configuration
-  Test Types configuration
-  Reporting
-  CLI Option (RFC3918 Automated)





Click “Add Chassis” button



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

Add Chassis

Chassis Address: 172.16.255.200

Chassis Port Number: 22606

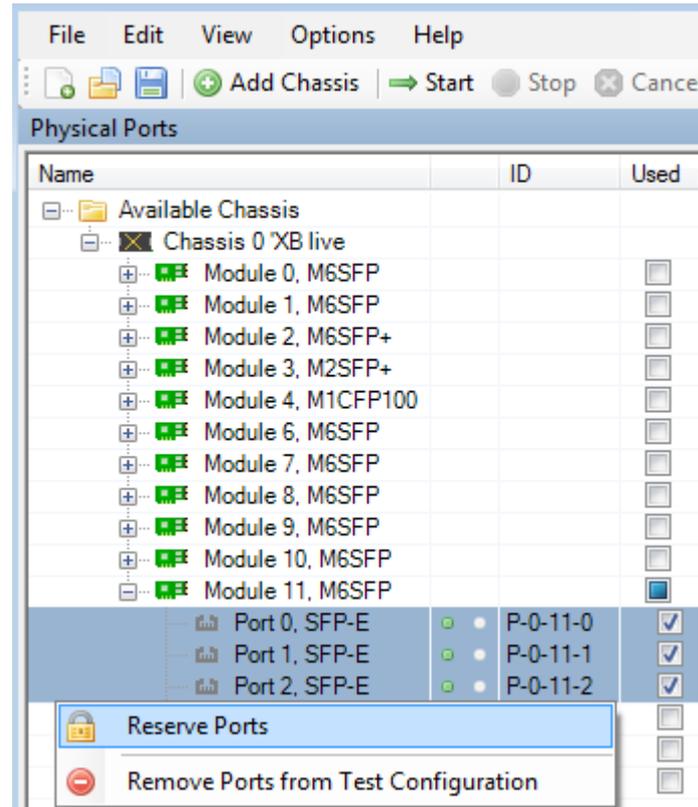
Chassis Password: ••••

ADD PORT(S)



1 Choose the Port/s you would like to work with:

2  On selected ports +  on “Reserve Used Ports”



CONFIGURE PORT(S)



Choose the Port/s you want to configure :

The screenshot shows the Xena3918 v1.9 configuration window. The 'Selected Ports' tab is active, displaying a table of ports. The port 'P-0-11-3 (SFP-E 10/100/1000M)' is selected. Below the table, the 'Main Port Properties' and 'Address Properties' sections are visible, showing various configuration options like Inter-Frame Gap, Speed Reduction, Port Rate Cap, and Peer Negotiation.

Port Name	Port Role	Port Speed	IPv4 Address	Prefix	IPv4 Gateway	IPv6 Address	Prefix	IPv6 Gateway	UC Protocol Segment Profile
P-0-11-0 (SFP-E 10/100/1000M)	MC Source	AUTO	1.1.1.1	24	1.1.1.254	::	64	::	1: Ethernet / IPv4
P-0-11-1 (SFP-E 10/100/1000M)	MC Destination	AUTO	2.2.2.2	24	2.2.2.254	::	64	::	1: Ethernet / IPv4
P-0-11-2 (SFP-E 10/100/1000M)	UC Burden	AUTO	2.2.2.100	24	2.2.2.254	::	64	::	1: Ethernet / IPv4
P-0-11-3 (SFP-E 10/100/1000M)	UC Burden	AUTO	2.2.2.200	24	2.2.2.254	::	64	::	1: Ethernet / IPv4

Selected Ports: 1

Main Port Properties: Inter-Frame Gap: 20, Speed Reduction: 0 ppm, Enable PAUSE Mode: [], Latency Offset: 0 ns

Port Rate Cap: Rate Cap Type: Physical Port Rate, Rate Cap Value: 1000.00 Mbit/s

Peer Negotiation: Enable Auto Negotiation: [x], MDI/MDIX Mode: Auto

Status: 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.
Port Role	The role this port plays in the overall test configuration. See below for a description of the rules for port role assignment.
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.

Port Roles

The following rules apply when assigning roles to ports:

- There must be exactly one *Multicast Source* (**MC Source**) port. The MC Source port is the port that acts as the multicast server and transmits the multicast traffic to the multicast groups.
- There must be at least one *Multicast Destination* (**MC Destination**) port. The MC Destination ports act as the multicast clients and will receive the traffic sent to the multicast groups.
- If the selected tests require burdening traffic there must be at least two *Unicast Burdening* (**UC Burden**) ports. Burdening ports are used to emulate additional unicast traffic to burden the DUT.



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

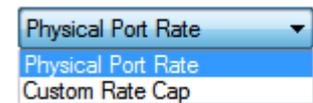
- This means enable **Flow Control on this port**

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)

5 Public Address

Public IP Address:

1.1.1.1

Public IP Prefix:

24

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

Remote Loop Address

Remote Loop IP Address:

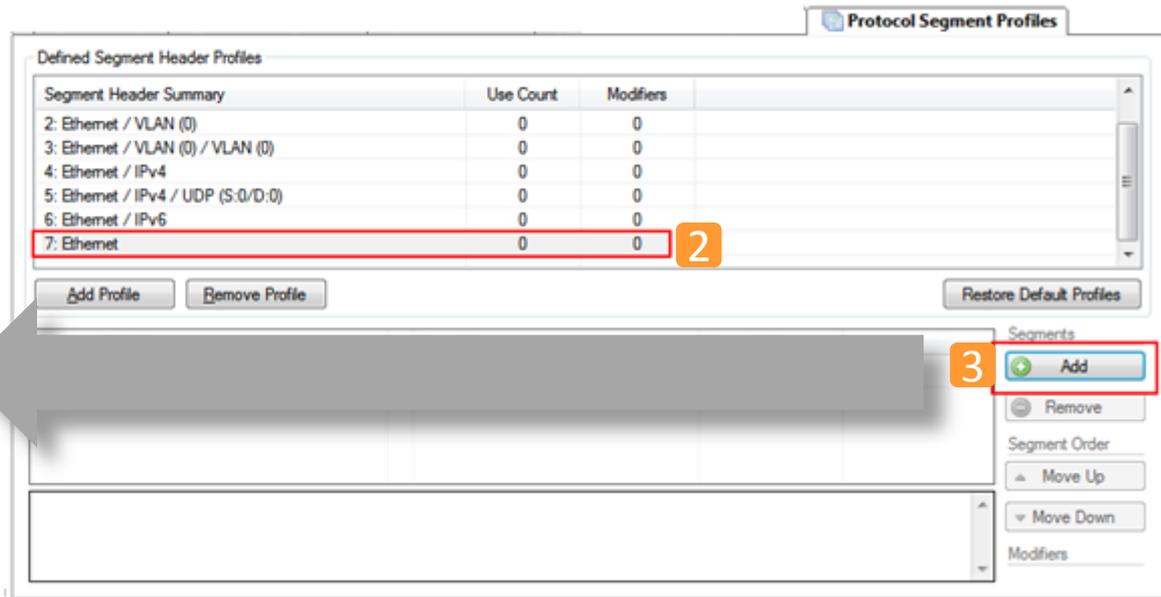
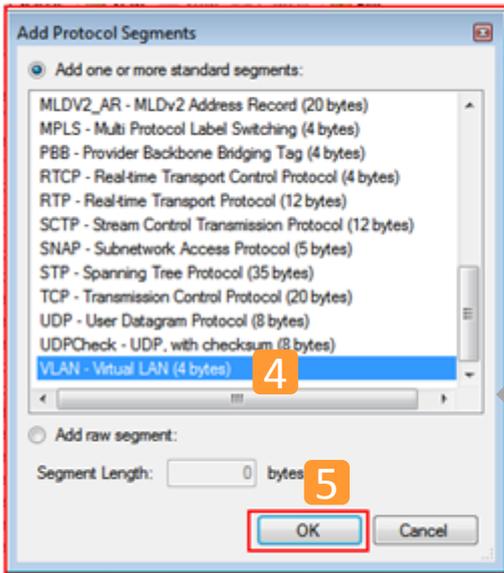
Remote Loop MAC Address:

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

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





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 click the **Remove Profile** button.

Default Profiles

- New Xena2544-2G configurations will be populated with default profiles.
- You can freely modify or delete one or more of the default profiles.

Profile Editor

- To edit a profile, select it in the top list-view and use the tree-view control below.



Add and Remove Segment Headers

- To add a new segment header click the **Add** button in the **Segments** section to the right.
- A dialog box will appear listing all built-in segment types - select one or more.
- To use a segment not currently supported, you can add a **raw segment** and specify the length in bytes.
- You can subsequently 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 Wireshark protocol analyzer.
- You can expand each segment branch to view and modify 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).



MAC and IP Addresses

The address fields in the Ethernet and IP section headers will usually be overridden by the Xena3918 when the test-streams are created:

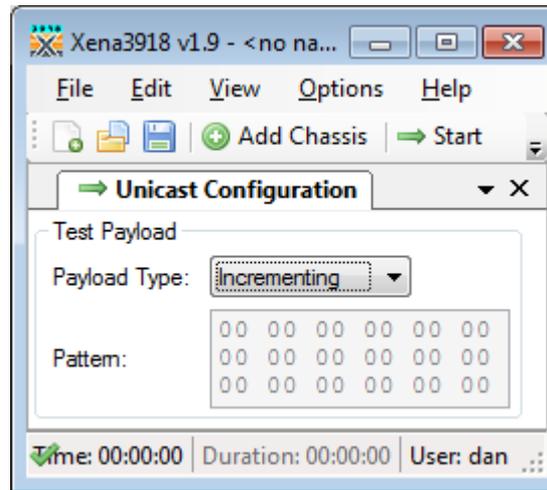
Source MAC (SMAC) address field in the first Ethernet segment will be set to the MAC address of the source port.

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, Xena3918 will try 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 occur if you leave the fields at their default (all-zeros) value. If you specify anything else this value will be used instead.



Payload Type:

Pattern means 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.

MULTICAST CONFIGURATION



Multicast Configuration [Close]

Multicast Protocol Profile and Version

Protocol Profile: 1: Ethernet / IPv4

IGMP/MLD Version: IGMPv2/MLDv1

Multicast Address Range

Start Address (IPv4): 225.0.0.0

Start Address (IPv6): FF11::1

Step Value: 1

Protocol Registration Handling

Join Refresh Interval: 10 secs

Join/Leave Rate: 1000 packets/sec

Use Source Address:

Test Payload

Payload Type: Incrementing

Pattern: 00 00 00 00 00 00
00 00 00 00 00 00
00 00 00 00 00 00

Packet Rate

Fraction: 10 percent

Packet/sec: 0 packets/sec

Resulting Rates

Port Speed Type
Fraction:
Packets/sec:
Bits/sec (L1)
Bits/sec (L2)

MULTICAST CONFIGURATION



Protocol Profile:

IGMP/MLD Version:

Protocol Profile:	Select the encapsulations used for the multicast traffic based on the Protocol Segments list.
IGMP/MLD Version:	Specifies the IGMP or MLD version to use. (Note that the IP version is selected in the Protocol Segments subpanel described below.)

Start Address (IPv4):

Start Address (IPv6):

Step Value:

Multicast Start Address:	The start address to use when allocating a multicast group address sequence.
Step Value:	The step value used to increment the address when generating a multicast group address sequence.



Join Refresh Interval: secs
Join/Leave Rate: packets/sec
Use Source Address:

Join Refresh Interval:	The interval in seconds that the join requests will be retransmitted. This is useful for longer-running tests where the router may otherwise timeout the individual learning requests.
Join/Leave Rate:	The maximum rate that the IGMP Join or Leave packets are sent. This is used to spread out the request transmission to prevent the DUT from being overwhelmed and drop requests.
Use Source Address:	If selected, the multicast address will be added as a source address to the IGMPv3/MLDv2 Group Record in the Join/Leave requests. If not selected the Group Records will not contain any source addresses. See RFC 3376, section 4.2.9 for details.

MULTICAST CONFIGURATION



Payload Type:

Pattern mean you can set your own custom pattern:

Payload Type:

Pattern:

AB	BA	AA	BE	EF	12
DE	AD	BA	D3	33	33
34	7A				

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

Fraction: percent

Packet/sec: packets/sec

Fraction:	Lets you specify the overall rate used for the multicast stream as a percentage of the physical port rate.
Packet/sec:	Lets you specify the overall rate used for the multicast stream as a packets per second value.



Packet Sizes

Fixed Sizes Per Trial

IEEE Default 64,128,256,512,1024,1280,1518

Custom Sizes

Size Range Start size: End size: Step size:

Varying Sizes Per Trial

Incrementing Min. size: Max. size:

Butterfly Sizes

Random Sizes

Mixed Sizes

Misc. Options

Latency Mode: Use Micro-TPLD if needed:

Latency Unit: Toggle Sync State:

Jitter Unit: Sync State Off Period: seconds



Frame Sizes Per Trial

1 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 to use - useful if you only want to test using one or two packet sizes

Size Range:

Size Range Start size: End size: Step size:

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

Incrementing Sizes:

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

Butterfly Sizes:

Incrementing Min. size: Max. size:

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

Random Sizes:

Incrementing **Min. size: Max. size:**
 Butterfly Sizes
 Random Sizes

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



Frame Sizes Per Trial

Mixed Sizes:

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

Mixed Weights Configuration

This form enable you to configure the percentage weights for the 'Mixed Sizes' packet size mode. The sum of all weights must be 100.

Packet Sizes:	56	60	64	70	78	92	256	496	512	570	576	594	1438	1518	9216	16360
Weights:	0	0	0	0	57	3	5	1	2	5	1	4	4	18	0	0

Average Packet Size: 464.000 bytes
Validation State: The sum of packet weights is 100%.

Buttons: Set Default, OK, Cancel

**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.*



Misc Options

Latency Mode: Use Micro-TPLD if needed:
 Latency Unit: Toggle Sync State:
 Jitter Unit: Sync State Off Period: seconds

Latency Mode:	Define the mode used to measure latency.
Latency Unit:	Define the unit used to report latency measurements.
Jitter Unit:	Define the unit used to report jitter measurements.
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.
Toggle Sync State:	If selected, toggles the port sync off and on states between each trial.
Sync State Off Period:	The time the link will be off when “Toggle Sync State” is selected.

GENERAL TEST CONFIGURATION



The screenshot shows the 'Xena3918 v1.9 - <no name> (*)' application window. The menu bar includes File, Edit, View, Options, and Help. The toolbar contains icons for Add Chassis, Start, Stop, Cancel, and Exit. The main window is titled 'Test Configuration' and has two tabs: 'General Test Options' (selected) and 'Test Types Selection and Configuration'. The 'General Test Options' tab contains a tree view of test categories, all of which are checked. At the bottom of this tree are 'Enable All' and 'Disable All' checkboxes. To the right of the tree is a 'Common Settings' section with 'Duration: 10 secs' and 'Iterations: 1'. Below that is a 'Delay Settings' section with 'Traffic-to-Join Delay: 10 secs' and 'Leave-to-Stop Delay: 10 secs'. At the bottom of the settings area is a 'Rate Settings' section with 'Initial Rate: 50.00 percent', 'Maximum Rate: 100.00 percent', and 'Step Rate: 50.00 percent'. The status bar at the bottom shows a green checkmark for 'Ready', a red circle for 'Test not running', and a progress indicator for 'Test Time: 00:00:00 | Duration: 00:00:00 | User: dan'.

Xena3918 v1.9 - <no name> (*)

File Edit View Options Help

Add Chassis Start Stop Cancel Exit

Test Configuration

General Test Options Test Types Selection and Configuration

- Overhead
 - Group Join/Leave Delay
- Capacity
 - Multicast Group Capacity
- Forwarding and Throughput
 - Aggregated Multicast Throughput
 - Scaled Group Forwarding Matrix
 - Mixed Class Throughput
- Forwarding Latency
 - Multicast Latency
- Interaction
 - Burdened Group Join Delay
 - Burdened Multicast Latency

Enable All Disable All

Common Settings

Duration: 10 secs Iterations: 1

Delay Settings

Traffic-to-Join Delay: 10 secs

Leave-to-Stop Delay: 10 secs

Rate Settings

Initial Rate: 50.00 percent

Maximum Rate: 100.00 percent

Step Rate: 50.00 percent

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

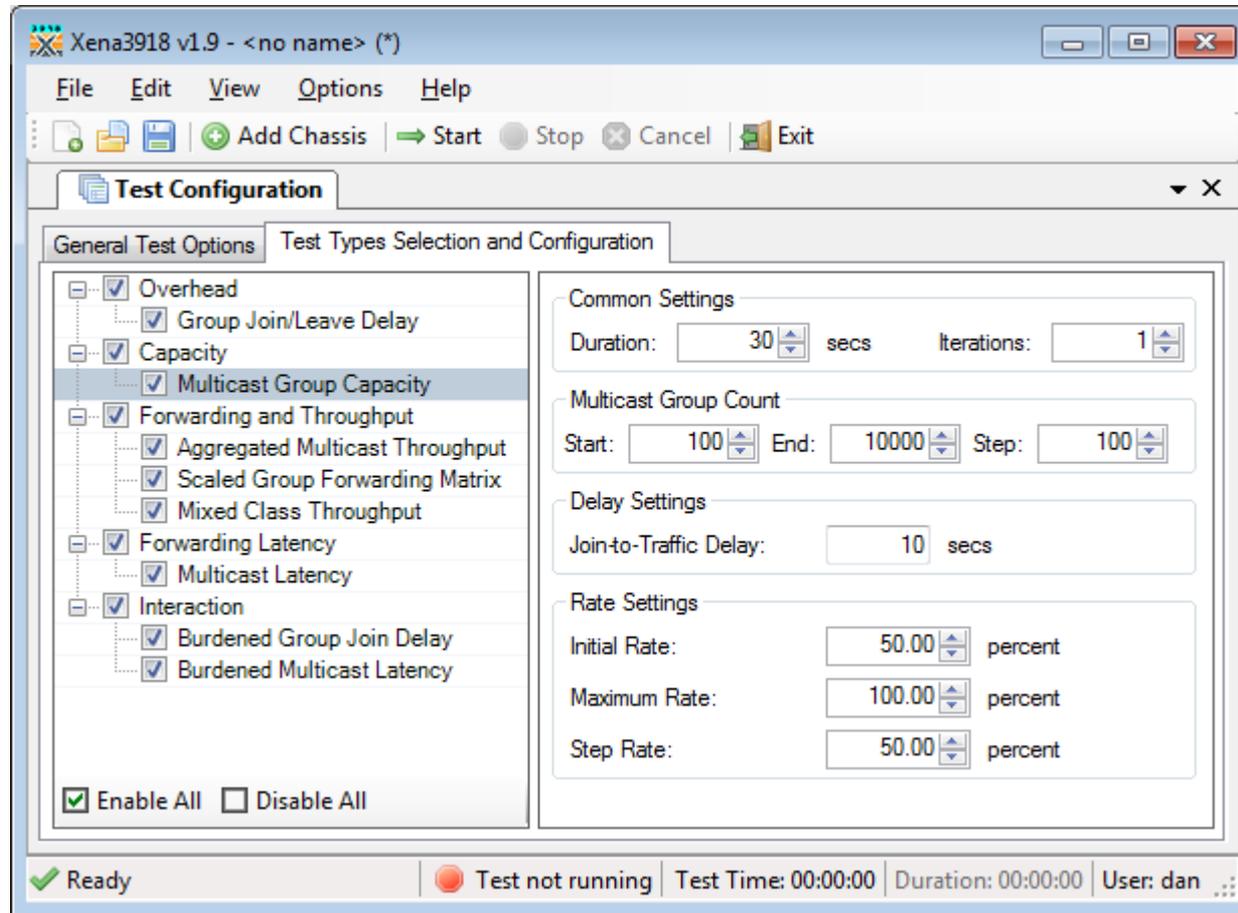


Test Types Configurations

Duration:	The duration in seconds of the time used in each trial for the actual measurement. This does not include the test setup and teardown phases so the total duration of a test will be longer.
Iterations:	The number of times a test is repeated using the same set of variable parameters (packet size, rate, etc.)
Traffic-to-Join Delay:	The number of seconds to wait between starting the multicast traffic on the server and sending the Join requests from the clients. This delay ensures that we can accurately check that traffic is not received by clients before they Join the multicast groups.
Leave-to-Stop Delay:	The number of seconds to wait between sending the Leave requests from the clients and stopping the multicast traffic on the server. This delay ensures that we can accurately check that the Leave requests from clients are actually honored by the server before stopping the traffic.
Initial Rate:	If present this option denotes the initial rate in percent of the overall rate configured in the Multicast Stream panel.
Maximum Rate:	If present this option denotes the maximum rate in percent of the overall rate configured in the Multicast Stream panel.
Minimum Rate:	If present this option denotes the minimum rate in percent of the overall rate configured in the Multicast Stream panel.
Step Rate:	if present this option is used to increment the rate percentage when iterating from a starting to a maximum rate.



Test Types Configurations





Test Types Configurations

Duration:	The duration in seconds of the time used in each trial for the actual measurement. This does not include the test setup and teardown phases so the total duration of a test will be longer.
Iterations:	The number of times a test is repeated using the same set of variable parameters (packet size, rate, etc.)
Multicast Group Count:	If present this option allows you to define a multicast group count sweep with a start, end and step value.
Join-to-Traffic Delay:	The delay between the sent Joins and the start of the traffic. It is meant to give the DUT time to process the joins before burdening it with traffic.
Initial Rate:	If present this option denotes the initial rate in percent of the overall rate configured in the Multicast Stream panel.
Maximum Rate:	If present this option denotes the maximum rate in percent of the overall rate configured in the Multicast Stream panel.
Step Rate:	if present this option is used to increment the rate percentage when iterating from a starting to a maximum rate.



Test Types Configurations

The screenshot displays the 'Test Configuration' window for Xena3918 v1.9. The window is titled 'Xena3918 v1.9 - <no name> (*)' and features a menu bar with 'File', 'Edit', 'View', 'Options', and 'Help'. Below the menu bar is a toolbar with icons for 'Add Chassis', 'Start', 'Stop', 'Cancel', and 'Exit'. The main area is divided into two tabs: 'General Test Options' and 'Test Types Selection and Configuration'. The 'Test Types Selection and Configuration' tab is active, showing a tree view of test types on the left and configuration fields on the right. The tree view includes categories like 'Overhead', 'Capacity', 'Forwarding and Throughput', 'Forwarding Latency', and 'Interaction', with sub-items such as 'Aggregated Multicast Throughput' and 'Burdened Group Join Delay'. The right panel contains sections for 'Common Settings' (Duration: 30 secs, Iterations: 1), 'Multicast Group Count Selection' (Count List: 1), 'Delay Settings' (Join-to-Traffic Delay: 10 secs), and 'Rate Settings' (Initial Rate: 100.00 percent, Maximum Rate: 100.00 percent, Minimum Rate: 0.10 percent, Resolution: 0.50 percent). At the bottom, a status bar shows 'Ready', 'Test not running', 'Test Time: 00:00:00', 'Duration: 00:00:00', and 'User: dan'.

Test Configuration

General Test Options | Test Types Selection and Configuration

Overhead

- Group Join/Leave Delay

Capacity

- Multicast Group Capacity

Forwarding and Throughput

- Aggregated Multicast Throughput
- Scaled Group Forwarding Matrix
- Mixed Class Throughput

Forwarding Latency

- Multicast Latency

Interaction

- Burdened Group Join Delay
- Burdened Multicast Latency

Enable All Disable All

Common Settings

Duration: secs Iterations:

Multicast Group Count Selection

Count List:

Count Range: Start: End: Step:

Delay Settings

Join-to-Traffic Delay: secs

Rate Settings

Initial Rate: percent

Maximum Rate: percent

Minimum Rate: percent

Resolution: percent

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

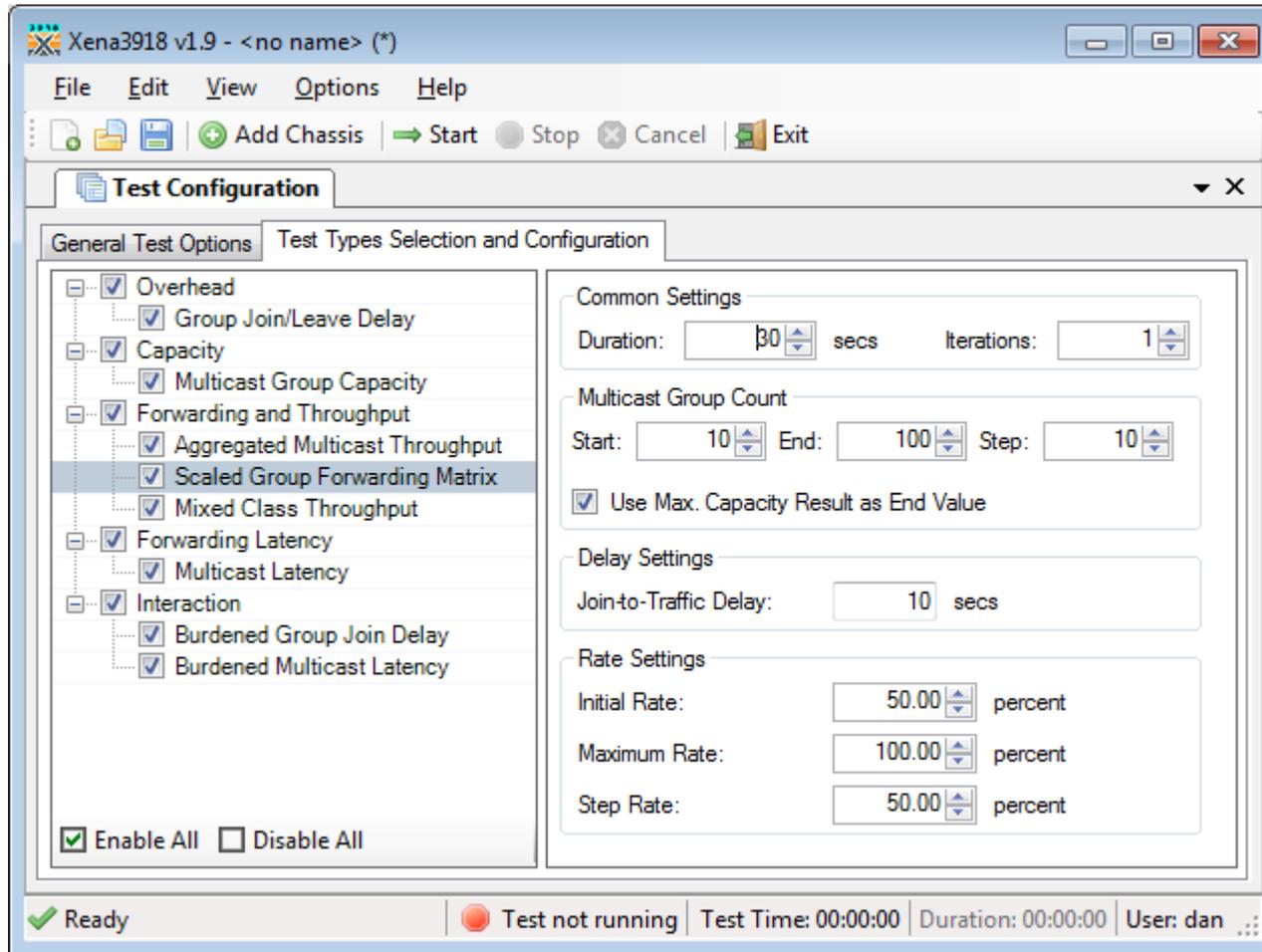


Test Types Configurations

Duration:	The duration in seconds of the time used in each trial for the actual measurement. This does not include the test setup and teardown phases so the total duration of a test will be longer.
Iterations:	The number of times a test is repeated using the same set of variable parameters (packet size, rate, etc.)
Count List:	The test will run for each group count listed (e.g. 1,10,100)
Count Range:	The test will run for <i>Start #</i> of groups and increment till <i>End</i> by increments of <i>Step</i> .
Join-to-Traffic Delay:	The delay between the sent Joins and the start of the traffic. It is meant to give the DUT time to process the joins before burdening it with traffic.
Initial Rate:	If present this option denotes the initial rate in percent of the overall rate configured in the Multicast Stream panel.
Maximum Rate:	If present this option denotes the maximum rate in percent of the overall rate configured in the Multicast Stream panel.
Minimum Rate:	If present this option denotes the minimum rate in percent of the overall rate configured in the Multicast Stream panel.
Resolution:	If present this option denotes a minimum difference between rates which will be used to stop the iteration.



Test Types Configurations



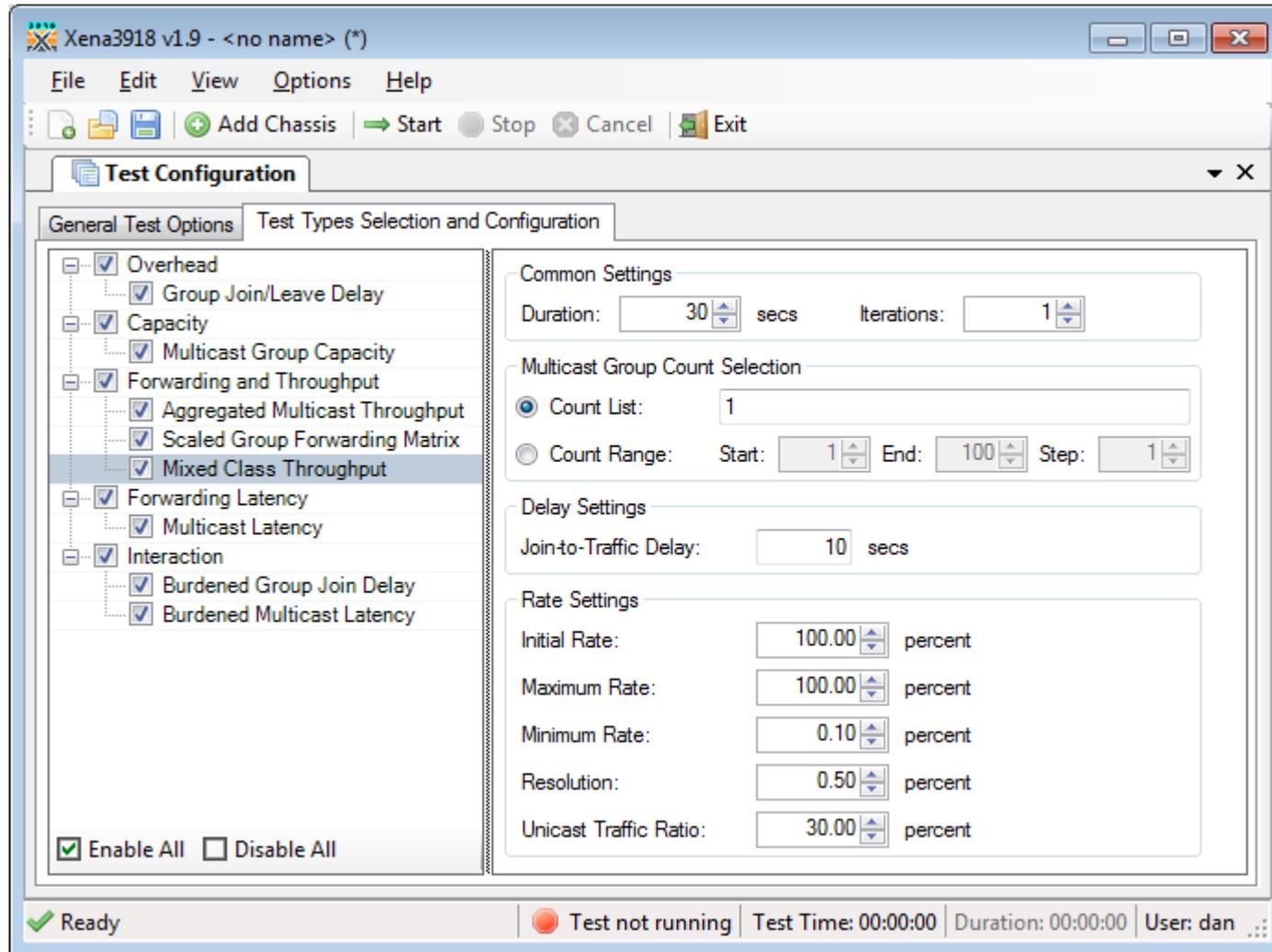


Test Types Configurations

Duration:	The duration in seconds of the time used in each trial for the actual measurement. This does not include the test setup and teardown phases so the total duration of a test will be longer.
Iterations:	The number of times a test is repeated using the same set of variable parameters (packet size, rate, etc.)
Multicast Group Count Selection:	If present this option allow you to specify a series of multicast group counts which can be used if multiple iterations have been configured.
Use Max. Capacity Result as End Value	Enable in order to have the test use the “Max Capacity” result – This value will be achieved after running the Max Group Capacity test.
Join-to-Traffic Delay:	The delay between the sent Joins and the start of the traffic. It is meant to give the DUT time to process the joins before burdening it with traffic.
Initial Rate:	If present this option denotes the initial rate in percent of the overall rate configured in the Multicast Stream panel.
Maximum Rate:	If present this option denotes the maximum rate in percent of the overall rate configured in the Multicast Stream panel.
Step Rate:	if present this option is used to increment the rate percentage when iterating from a starting to a maximum rate.



Test Types Configurations



The screenshot shows the 'Test Configuration' window for Xena3918 v1.9. The window is titled 'Xena3918 v1.9 - <no name> (*)' and has a menu bar with 'File', 'Edit', 'View', 'Options', and 'Help'. Below the menu bar is a toolbar with icons for 'Add Chassis', 'Start', 'Stop', 'Cancel', and 'Exit'. The main area is divided into two tabs: 'General Test Options' and 'Test Types Selection and Configuration'. The 'Test Types Selection and Configuration' tab is active, showing a tree view on the left and configuration fields on the right. The tree view includes categories like 'Overhead', 'Capacity', 'Forwarding and Throughput', 'Forwarding Latency', and 'Interaction', each with sub-items and checkboxes. The 'Mixed Class Throughput' item is selected. The configuration fields on the right are organized into sections: 'Common Settings' (Duration: 30 secs, Iterations: 1), 'Multicast Group Count Selection' (Count List: 1, Count Range: Start: 1, End: 100, Step: 1), 'Delay Settings' (Join-to-Traffic Delay: 10 secs), and 'Rate Settings' (Initial Rate: 100.00 percent, Maximum Rate: 100.00 percent, Minimum Rate: 0.10 percent, Resolution: 0.50 percent, Unicast Traffic Ratio: 30.00 percent). At the bottom left, there are checkboxes for 'Enable All' (checked) and 'Disable All'. The status bar at the bottom shows 'Ready', 'Test not running', 'Test Time: 00:00:00', 'Duration: 00:00:00', and 'User: dan'.

Xena3918 v1.9 - <no name> (*)

File Edit View Options Help

Add Chassis Start Stop Cancel Exit

Test Configuration

General Test Options Test Types Selection and Configuration

Overhead
Group Join/Leave Delay
Capacity
Multicast Group Capacity
Forwarding and Throughput
Aggregated Multicast Throughput
Scaled Group Forwarding Matrix
Mixed Class Throughput
Forwarding Latency
Multicast Latency
Interaction
Burdened Group Join Delay
Burdened Multicast Latency

Common Settings
Duration: 30 secs Iterations: 1

Multicast Group Count Selection
Count List: 1
Count Range: Start: 1 End: 100 Step: 1

Delay Settings
Join-to-Traffic Delay: 10 secs

Rate Settings
Initial Rate: 100.00 percent
Maximum Rate: 100.00 percent
Minimum Rate: 0.10 percent
Resolution: 0.50 percent
Unicast Traffic Ratio: 30.00 percent

Enable All Disable All

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



Test Types Configurations

Duration:	The number of seconds used in each trial for the actual measurement. Does not include the test setup and teardown phases so the total duration of a test will be longer.
Iterations:	The number of times a test is repeated using the same set of variable parameters (packet size, rate, etc.)
Count List:	The test will run for each group count listed (e.g. 1,10,100)
Count Range:	The test will run for <i>Start #</i> of groups and increment till <i>End</i> by increments of <i>Step</i> .
Join-to-Traffic Delay:	The delay between the sent Joins and the start of the traffic. It is meant to give the DUT time to process the joins before burdening it with traffic.
Initial Rate:	The initial rate in percent of the overall rate configured in the Multicast Stream panel.
Maximum Rate:	The maximum rate in percent of the overall rate configured in the Multicast Stream panel.
Minimum Rate:	The minimum rate in percent of the overall rate configured in the Multicast Stream panel.
Resolution:	Denotes a minimum difference between rates that will be used to stop the iteration.
Unicast Traffic Ratio:	<p>If present this option denotes the percentage of the overall rate configured in the Multicast Stream panel to be used for unicast traffic.</p> <p>Note that the unicast rate will be <u>added</u> to the configured multicast rate. So if the multicast rate has been set to e.g. 10% and the UC traffic ratio is set to 50% the total rate for the port will be $10\% + (50\% \text{ of } 10\%) = 15\%$.</p>



Test Types Configurations

Xena3918 v1.9 - <no name> (*)

File Edit View Options Help

Add Chassis Start Stop Cancel Exit

Test Configuration

General Test Options Test Types Selection and Configuration

Overhead
Group Join/Leave Delay

Capacity
Multicast Group Capacity

Forwarding and Throughput
Aggregated Multicast Throughput
Scaled Group Forwarding Matrix
Mixed Class Throughput

Forwarding Latency
Multicast Latency

Interaction
Burdened Group Join Delay
Burdened Multicast Latency

Enable All Disable All

Common Settings
Duration: 30 secs Iterations: 1

Multicast Group Count Selection
Count List: 1
Count Range: Start: 1 End: 100 Step: 1

Delay Settings
Join-to-Traffic Delay: 10 secs

Rate Settings
Initial Rate: 50.00 percent
Maximum Rate: 100.00 percent
Step Rate: 50.00 percent

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

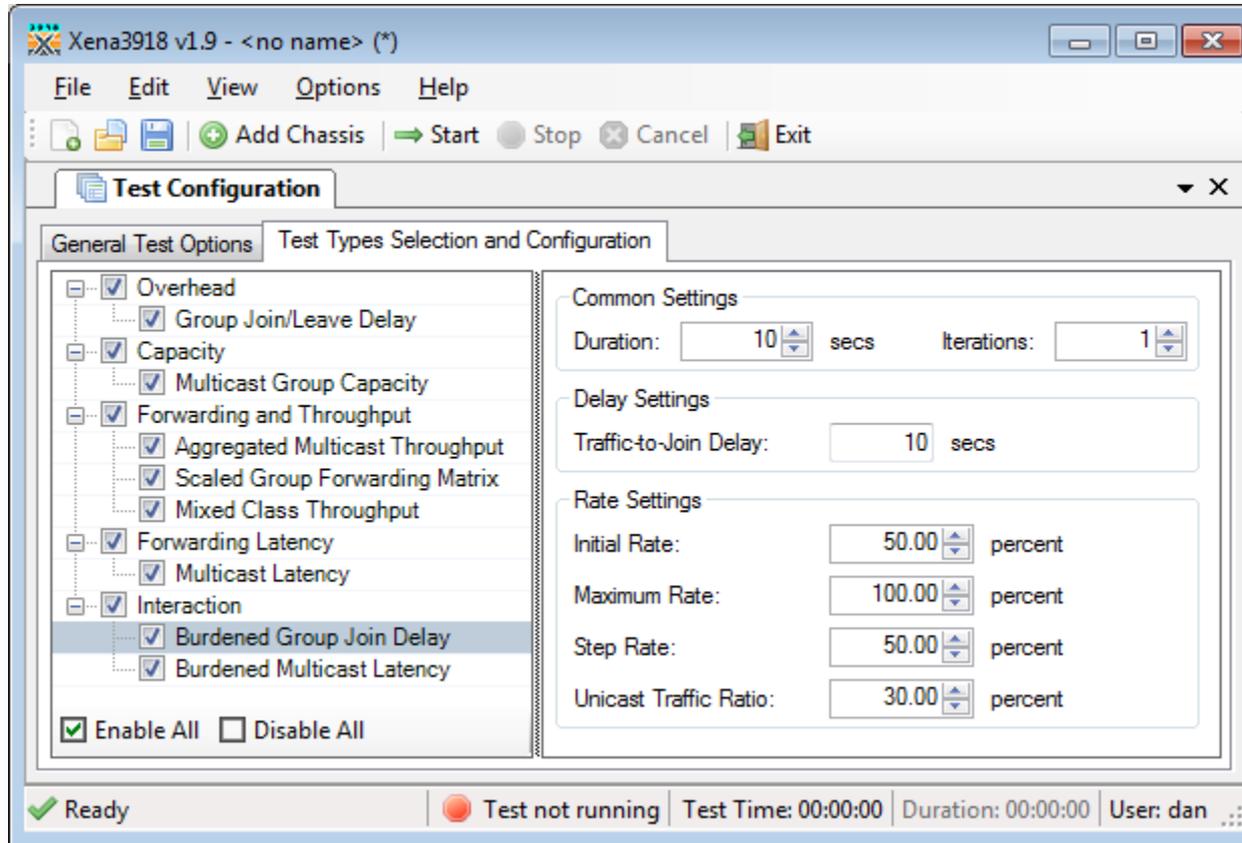


Test Types Configurations

Duration:	The duration in seconds of the time used in each trial for the actual measurement. This does not include the test setup and teardown phases so the total duration of a test will be longer.
Iterations:	The number of times a test is repeated using the same set of variable parameters (packet size, rate, etc.)
Count List:	The test will run for each group count listed (e.g. 1,10,100)
Count Range:	The test will run for <i>Start #</i> of groups and increment till <i>End</i> by increments of <i>Step</i> .
Join-to-Traffic Delay:	The delay between the sent Joins and the start of the traffic. It is meant to give the DUT time to process the joins before burdening it with traffic.
Initial Rate:	If present this option denotes the initial rate in percent of the overall rate configured in the Multicast Stream panel.
Maximum Rate:	If present this option denotes the maximum rate in percent of the overall rate configured in the Multicast Stream panel.
Step Rate:	if present this option is used to increment the rate percentage when iterating from a starting to a maximum rate.



Test Types Configurations





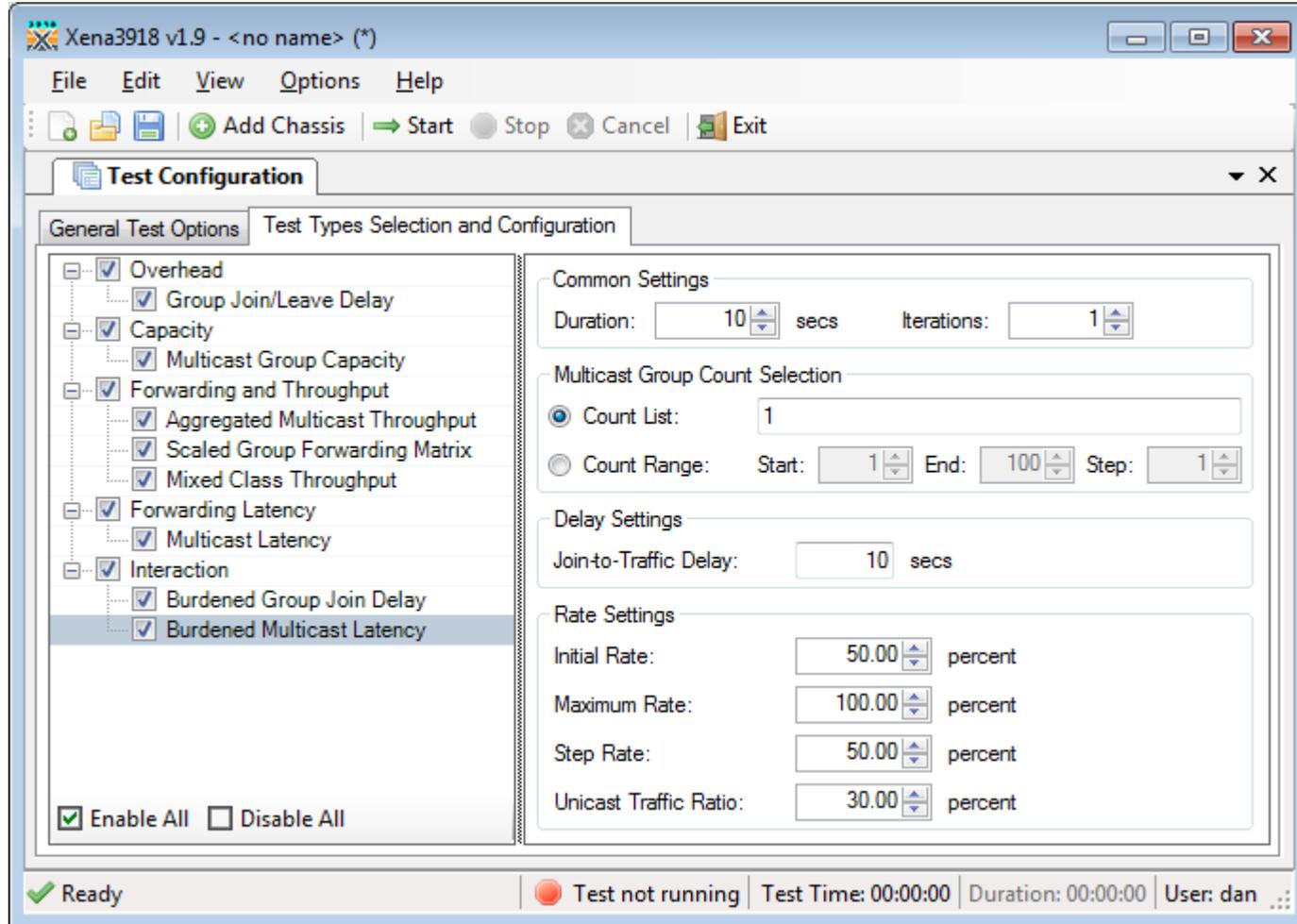
Test Types Configurations

Duration:	The duration in seconds of the time used in each trial for the actual measurement. This does not include the test setup and teardown phases so the total duration of a test will be longer.
Iterations:	The number of times a test is repeated using the same set of variable parameters (packet size, rate, etc.)
Traffic-to-Join Delay:	The number of seconds to wait between starting the multicast traffic on the server and sending the Join requests from the clients. This delay ensures that we can accurately check that traffic is not received by clients before they Join the multicast groups.
Initial Rate:	If present this option denotes the initial rate in percent of the overall rate configured in the Multicast Stream panel.
Maximum Rate:	If present this option denotes the maximum rate in percent of the overall rate configured in the Multicast Stream panel.
Step Rate:	if present this option is used to increment the rate percentage when iterating from a starting to a maximum rate.
Unicast Traffic Ratio:	<p>If present this option denotes the percentage of the overall rate configured in the Multicast Stream panel to be used for unicast traffic.</p> <p>Note that the unicast rate will be <u>added</u> to the configured multicast rate. So if the multicast rate has been set to e.g. 10% and the UC traffic ratio is set to 50% the total rate for the port will be $10\% + (50\% \text{ of } 10\%) = 15\%$.</p>



GENERAL TEST CONFIGURATION

Test Types Configurations





Test Types Configurations

Duration:	The duration in seconds of the time used in each trial for the actual measurement. This does not include the test setup and teardown phases so the total duration of a test will be longer.
Iterations:	The number of times a test is repeated using the same set of variable parameters (packet size, rate, etc.)
Count List:	The test will run for each group count listed (e.g. 1,10,100)
Count Range:	The test will run for <i>Start #</i> of groups and increment till <i>End</i> by increments of <i>Step</i> .
Join-to-Traffic Delay:	The delay between the sent Joins and the start of the traffic. It is meant to give the DUT time to process the joins before burdening it with traffic.
Initial Rate:	If present this option denotes the initial rate in percent of the overall rate configured in the Multicast Stream panel.
Maximum Rate:	If present this option denotes the maximum rate in percent of the overall rate configured in the Multicast Stream panel.
Step Rate:	if present this option is used to increment the rate percentage when iterating from a starting to a maximum rate.
Unicast Traffic Ratio:	<p>If present this option denotes the percentage of the overall rate configured in the Multicast Stream panel to be used for unicast traffic.</p> <p>Note that the unicast rate will be <u>added</u> to the configured multicast rate. So if the multicast rate has been set to e.g. 10% and the UC traffic ratio is set to 50% the total rate for the port will be $10\% + (50\% \text{ of } 10\%) = 15\%$.</p>



Xena3918 v1.9 - <no name> (*)

File Edit View Options Help

Add Chassis Start Stop Cancel Exit

Reporting Options

Report Identification

Customer Name:

Customer Service ID:

Customer Access ID:

Comments:

Report Generation Options

Report Naming

Report Filename Prefix:

Append Timestamp to Filename:

Report Content

Include Detailed Port Information in Report:

Include Charts in Report:

Throughput Unit for Charts:

Report Fomats

- Generate PDF Report
- Generate XML Report
- Generate CSV Report

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



1 *Report Identification:*

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

Customer Name:

Customer Name:

The name of the customer for which the test is performed.

Customer Service/Access Id:

These two options allow you to provide details about the network circuits you are testing.

Customer Service ID:

Customer Access ID:

Comments:

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

Comments:



2 Report generation Options:

Report Naming

Report Filename Prefix:

Specifies the prefix for the report filename.

Append Timestamp to Filename:

If checked a <YYYYMMDD-HHMMSS> timestamp is added to the filename prefix.

Report Content

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

Include Detailed Port Information in Report: If checked the report will also contain detailed results for each port. If unchecked only the totals will be reported.

Include Charts in Report: If checked the report will include bar charts showing the test results. This is only applicable for PDF type reports.

Throughput Unit for Charts: Use this to select whether to use frames/second or bits/second as the unit for throughput charts.



3

Report Formats:

Select which type(s) of reports will be generated.

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**

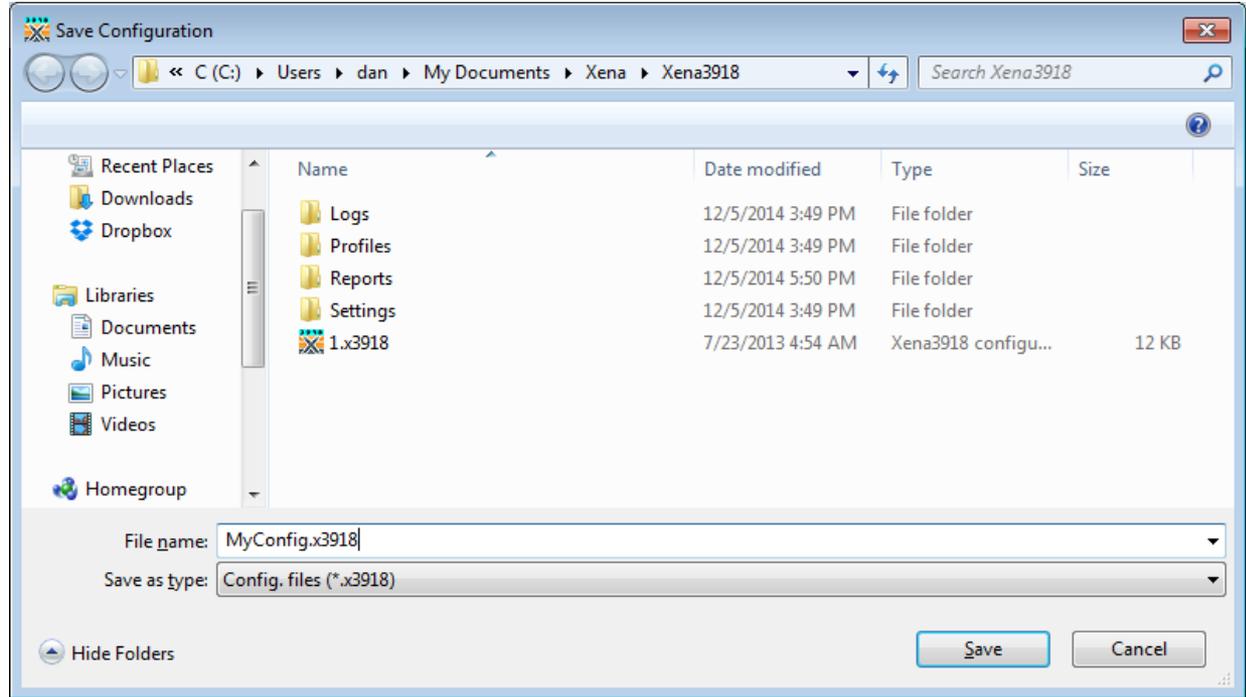
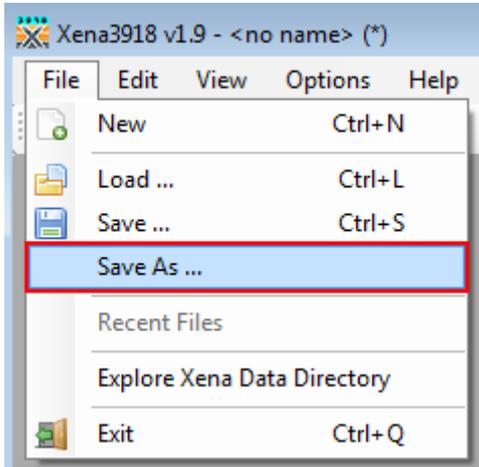
You can find the [specification for the XML Report here.](#)



REPORTING

CLI Option

Save the configuration with an appropriate name.



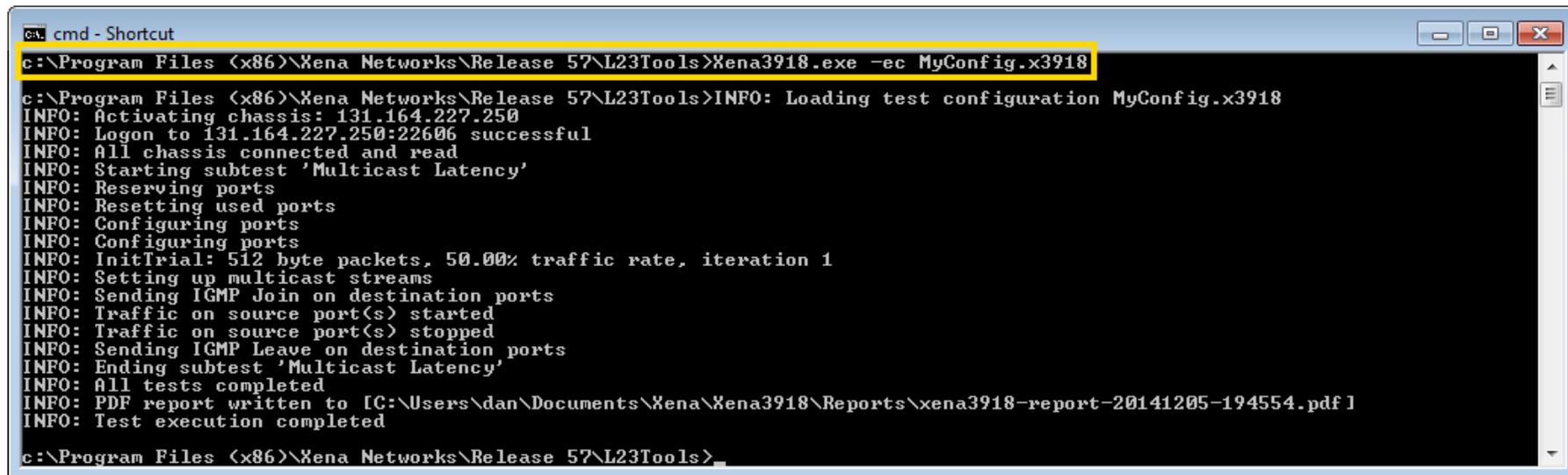
RFC3918 CLI Option

2

Use the Xena3918.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:/.../Xena3918.exe -ec MyConfig.x3918"**



```
cmd - Shortcut
c:\Program Files (x86)\Xena Networks\Release 57\L23Tools>Xena3918.exe -ec MyConfig.x3918
c:\Program Files (x86)\Xena Networks\Release 57\L23Tools>INFO: Loading test configuration MyConfig.x3918
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 'Multicast Latency'
INFO: Reserving ports
INFO: Resetting used ports
INFO: Configuring ports
INFO: Configuring ports
INFO: InitTrial: 512 byte packets, 50.00% traffic rate, iteration 1
INFO: Setting up multicast streams
INFO: Sending IGMP Join on destination ports
INFO: Traffic on source port(s) started
INFO: Traffic on source port(s) stopped
INFO: Sending IGMP Leave on destination ports
INFO: Ending subtest 'Multicast Latency'
INFO: All tests completed
INFO: PDF report written to [C:\Users\dan\Documents\Xena\Xena3918\Reports\xena3918-report-20141205-194554.pdf]
INFO: Test execution completed
c:\Program Files (x86)\Xena Networks\Release 57\L23Tools>
```

Xena RFC3918 CLI Option

3

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

```

cmd - Shortcut
c:\Program Files (x86)\Xena Networks\Release 57\L23Tools>Xena3918.exe --help
c:\Program Files (x86)\Xena Networks\Release 57\L23Tools>Xena3918 version 1.9
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, --logfile         Path to logfile receiving console output
-h, --help           Display this help screen.

c:\Program Files (x86)\Xena Networks\Release 57\L23Tools>_

```

-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.



RESOURCES

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