

Day 11 - Enabling Latency and Jitter Bins per Traffic Flow

Testing Challenge:

In today's converged networks, the timely delivery of packets is a critical measure of the performance of the network. Based on configured QoS policies, different data is treated differently as it traverses the network.

A critical aspect of testing network performance is to measure the latencies of packets across the network. These measurements need to be comprehensive and detailed for each traffic flow.

IxNetwork 5.40 Solution:

In IxNetwork, the user now has the ability to set different latency and Delay Variation (Jitter) modes and measure the latency or jitter distribution of each traffic flow across a number of different 'Latency bins'.

IxNetwork 5.40 lets users now configure up to 16 Latency bins and view the Latency bin statistics for each traffic flow in the system in the same traffic view.

Latency Bin configuration is now the property of the Traffic Item and can be enabled in the 'Flow Tracking' page of the Advanced Traffic Wizard. In this page, the user can define:

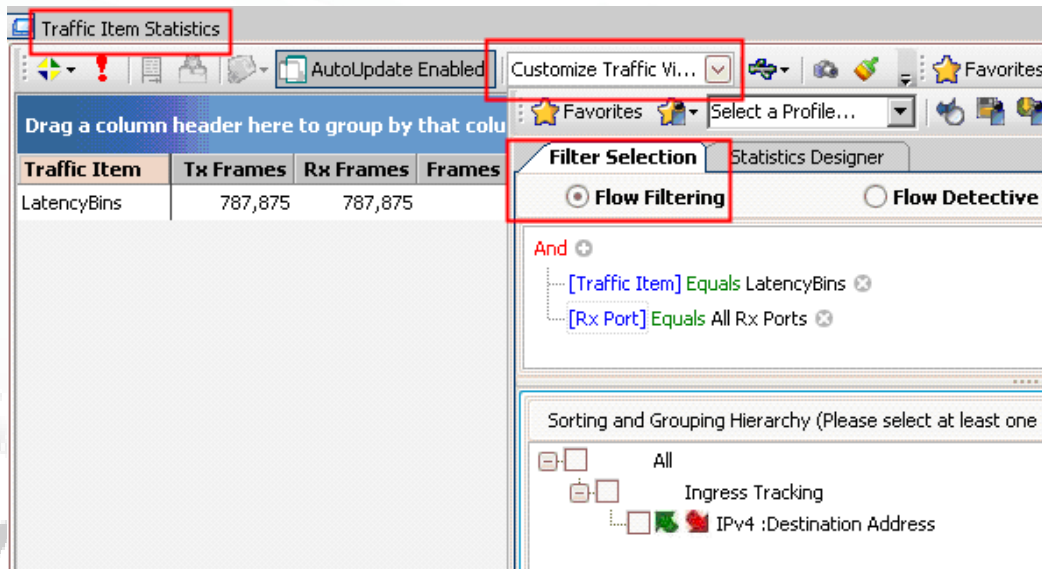
- The Number of latency bins, up to 16 bins
- The granularity of each bin (in microseconds)

	Greater Than (us)	Less Than or Equal To (us)
1	0.00	1.02
2	1.02	1.04
3	1.04	1.06
4	1.06	1.08
5	1.08	1.10
6	1.10	1.12
7	1.12	1.14
8	1.14	1.16
9	1.16	1.18

Legend: Ingress (Green), Egress (Yellow), Latency Bins (Red)

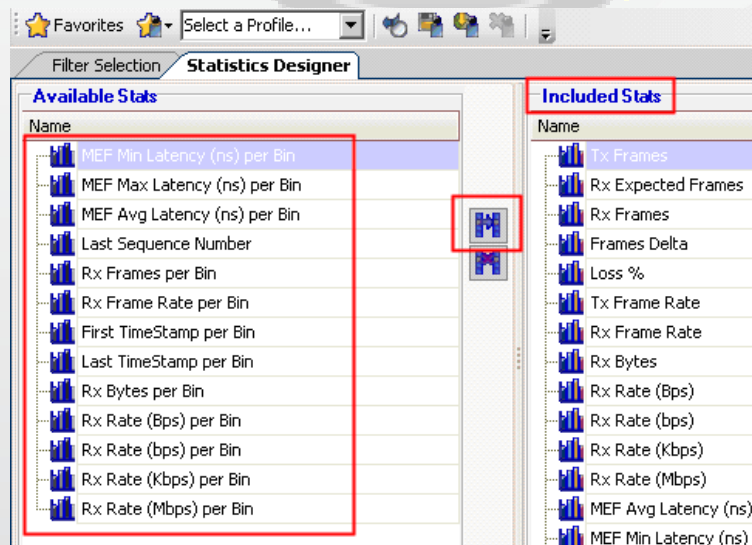
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Once configured, the user can now view the Latency Bins per Traffic flow. This view is enabled using the “Customize Traffic View” dialogue in any Traffic Statistics view.



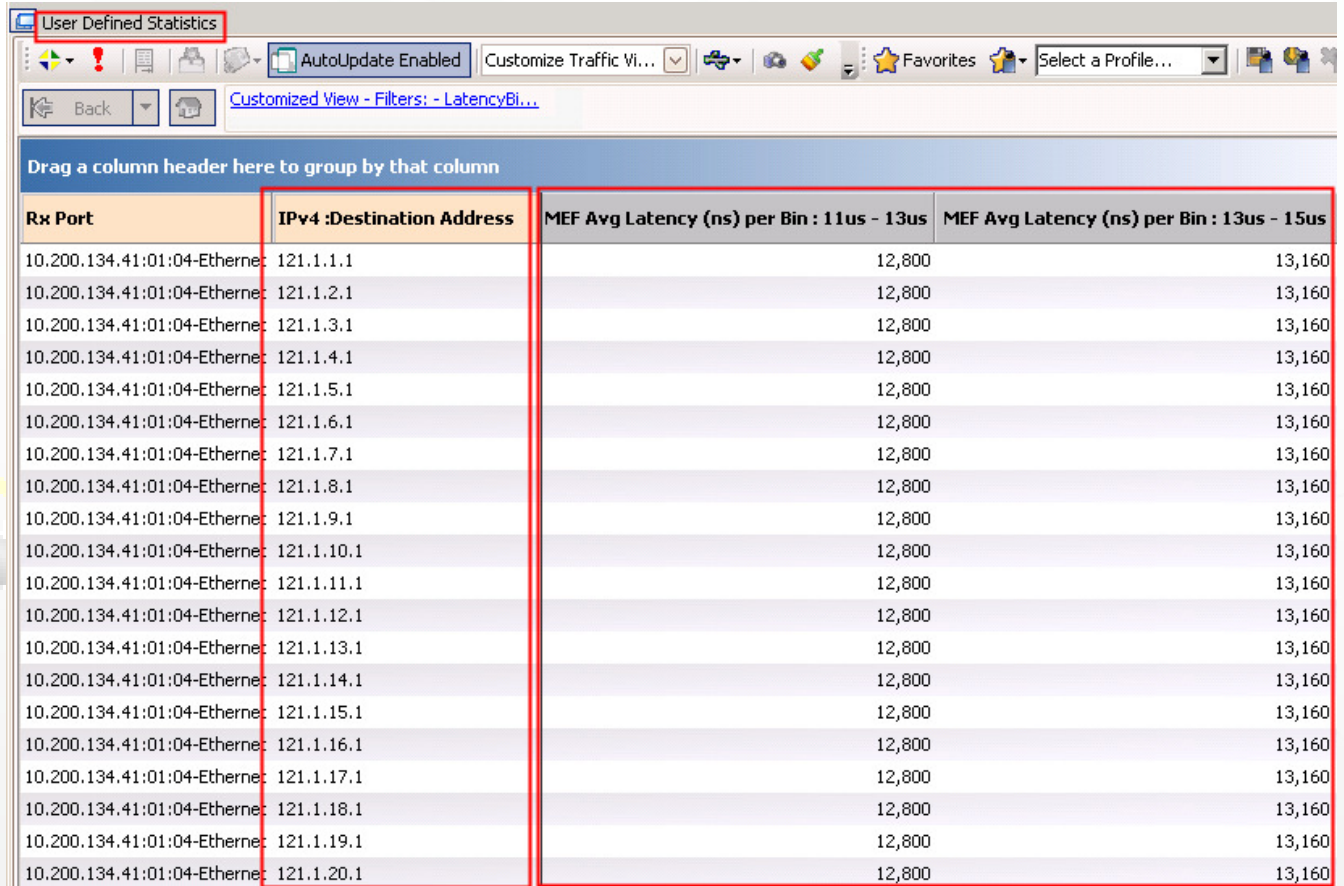
In the drop down, select the options for the customized view

- Select the Traffic Item to be filtered
- Select the filtering condition (*optional*)
- Select the sorting/grouping condition
- Select the statistic columns to be added/removed
 - Latency Bin Statistics can be added to the Traffic View
 - Select the Latency Bin Statistics to the 'Included Stats' window



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Once 'OK' is clicked, a new 'User Defined Statistic' in the Statistics tree view is created with the newly added 'Latency Bin' columns, with statistics reported per traffic flow.



The screenshot shows a software window titled 'User Defined Statistics'. The window has a toolbar with various icons and a 'Back' button. Below the toolbar, there is a section for grouping columns. The main area contains a table with the following columns: 'Rx Port', 'IPv4 :Destination Address', 'MEF Avg Latency (ns) per Bin : 11us - 13us', and 'MEF Avg Latency (ns) per Bin : 13us - 15us'. The table lists 20 rows of data, each representing a different destination address. The latency values are consistently 12,800 ns for the 11us-13us bin and 13,160 ns for the 13us-15us bin.

Rx Port	IPv4 :Destination Address	MEF Avg Latency (ns) per Bin : 11us - 13us	MEF Avg Latency (ns) per Bin : 13us - 15us
10.200.134.41:01:04-Ethernet	121.1.1.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.2.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.3.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.4.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.5.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.6.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.7.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.8.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.9.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.10.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.11.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.12.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.13.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.14.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.15.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.16.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.17.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.18.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.19.1	12,800	13,160
10.200.134.41:01:04-Ethernet	121.1.20.1	12,800	13,160

Conclusion:

With the continued growth of bandwidth hungry applications on today's networks, testing the performance of the network with regards to statistics like Latency and Jitter for each traffic type is a critical aspect. IxNetwork provides these statistics with detailed latency information for each configured flow.