

Day 47-Identify interesting flows with Flow Filter and Flow Detective

Testing Challenge:

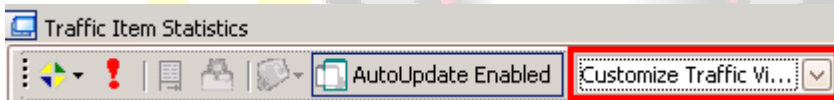
With increased scalability and complexity, the number of measured flows in a test has grown significantly to up to Millions flows. Test Engineers face great challenges to analyze large numbers of flows to quickly identify problematic and/or interesting flows.

IxNetwork 5.40 Solution:

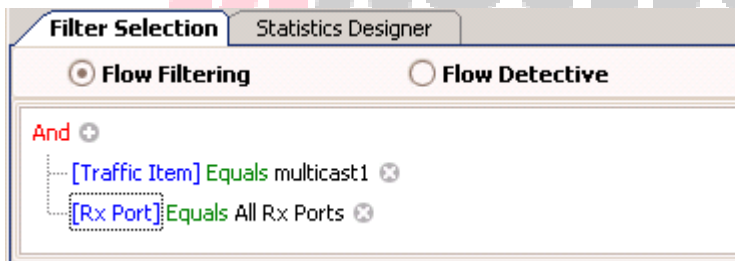
IxNetwork 5.40 provides Flow Filtering and Flow Detective functions to help ease such challenges. Flow Filtering provides real-time filtering based on traffic item, Rx port and other pre-defined ingress/egress tracking options. Flow Detective identifies best/worst performing flows that match user defined criteria in real time. Flow Detective can be applied not only to all flows defined in a test session but also to selected flows filtered by Flow Filtering to provide an even more granular search of interesting flows.

How to do this?

1. Click on “Customize Traffic View” dropdown at any Traffic Statistic view to bring up Flow Filtering and Flow Detective configuration window.



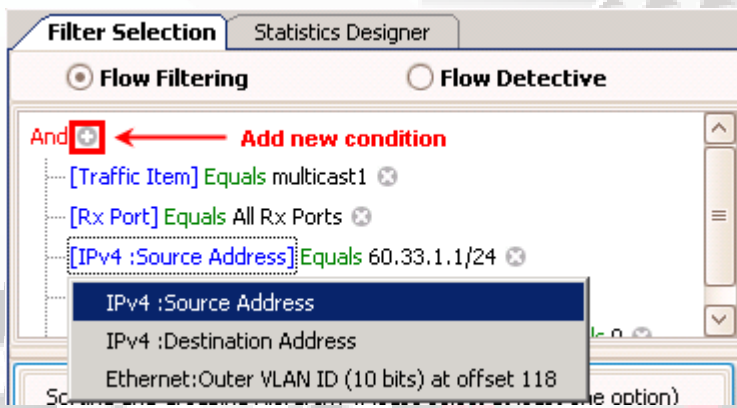
2. Flow Filtering has “Traffic Item” and “Rx port” as default filters. Click on dropdown to select desired traffic item and Rx port(s). Please note that Flow Filtering can be performed for one traffic item at a time.



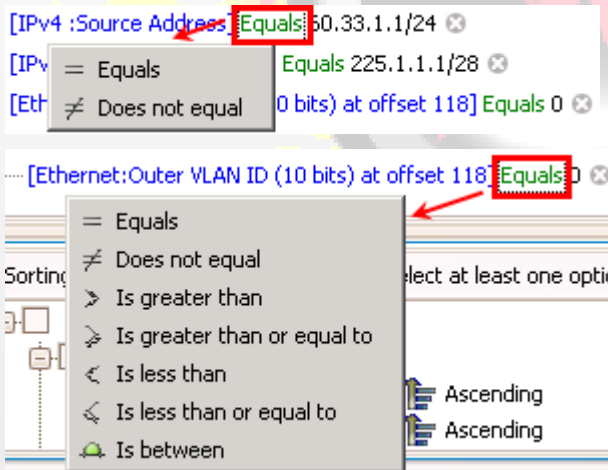
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3. Additional criteria for filtering can be added from pre-defined ingress/egress tracking options.

Ingress/Egress tracking is found in Traffic Wizard.



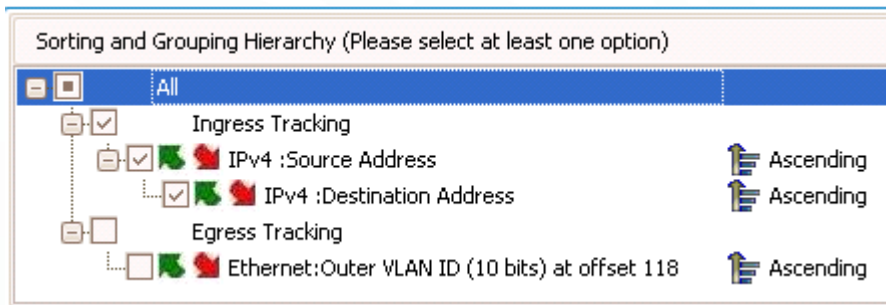
4. Applicable operations are available for each condition.







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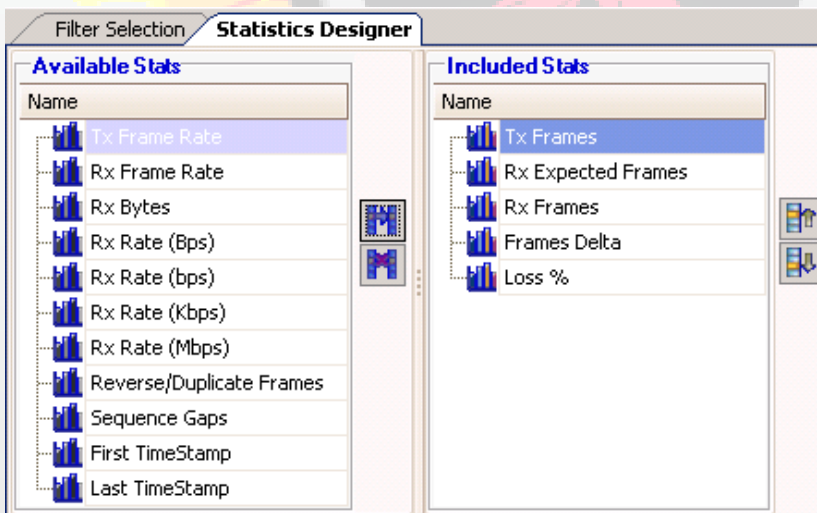
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5. After setting the filtering conditions, user can also customize grouping and sorting option at lower pane.



Use  and  to move the field up and down to change grouping order. Select  Ascending and  Descending as sorting order for a field.

6. (Optional) User can also go to Statistics Designer tab to customize the statistics fields for the view. Use various arrow buttons to move stats up/down or between left and right pane.



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7. Below is a sample flow filtering setting and generated flow filtering view.

Flow Filtering Flow Detective

And

- [Traffic Item] Equals multicast1
- [Rx Port] Equals All Rx Ports
- [IPv4 :Source Address] Equals 60.33.1.2/32
- [IPv4 :Destination Address] Equals 225.1.1.1/28

Sorting and Grouping Hierarchy (Please select at least one option)

- All
 - Ingress Tracking
 - IPv4 :Source Address Ascending
 - IPv4 :Destination Address Ascending
 - Egress Tracking
 - Ethernet:Outer VLAN ID (10 bits) at offset 118 Ascending

Rx Port	IPv4 :Source Address	IPv4 :Destination Address	Tx Frames	Rx Expected Frames	Rx Frames	Frames Delta	Loss %
P2	60.33.1.2	225.1.1.1	1,242,352	6,211,760	6,211,595	165	0.003
P3	60.33.1.2	225.1.1.1	1,242,352	6,211,760	6,211,595	165	0.003
P2	60.33.1.2	225.1.1.2	1,242,352	6,211,760	6,211,700	60	0.001
P3	60.33.1.2	225.1.1.2	1,242,352	6,211,760	6,211,700	60	0.001
P2	60.33.1.2	225.1.1.3	1,242,352	6,211,760	6,211,750	10	0.000
P3	60.33.1.2	225.1.1.3	1,242,352	6,211,760	6,211,750	10	0.000
P2	60.33.1.2	225.1.1.4	1,242,352	6,211,760	6,211,570	190	0.003
P3	60.33.1.2	225.1.1.4	1,242,352	6,211,760	6,211,570	190	0.003
P2	60.33.1.2	225.1.1.5	1,242,352	6,211,760	6,211,683	77	0.001
P3	60.33.1.2	225.1.1.5	1,242,352	6,211,760	6,211,684	76	0.001

8. Flow Detective can now run either on all flows or on filtered flows. At Flow Detective view, the flow detective is by default on ALL flows.

Filter Selection Statistics Designer

Flow Filtering Flow Detective

And

- [Flow State] Equals All Flows

Show 50

Best Performers (Selected) / Worst Performers

Sorted By Rx Frames

Declare flows Dead if no frames are provided for 5 seconds

- Traffic (Total: 5)
 - L2-L3 (Total: 5)
 - Data Plane Port Statistics
 - Traffic Item Statistics
 - User Defined Statistics
 - Flow Statistics
 - Flow Detective**

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- To run Flow Detective for filtered flows, add desired filter in either Flow Detective window directly or through Flow Filtering window. The flow detective will then be run on filtered flows.

Flow Detective - Rx Frames/Best Performers

Tx Port	Rx Port	Traffic Item	IPv4 :Source Address	IPv4 :Destination Address	Tx Frames	Rx Expected Frames	Rx Frames	Frames Delta	Loss %
P1	P2	multicast1	60.33.1.2	225.1.1.2	407,682,939	2,038,414,695	2,038,414,695	0	0.000
P1	P2	multicast1	60.33.1.2	225.1.1.1	407,682,939	2,038,414,695	2,038,414,695	0	0.000
P1	P3	multicast1	60.33.1.2	225.1.1.2	407,682,939	2,038,414,695	2,038,414,695	0	0.000
P1	P3	multicast1	60.33.1.2	225.1.1.1	407,682,939	2,038,414,695	2,038,414,695	0	0.000
P1	P2	multicast1	60.33.1.2	225.1.1.5	407,682,938	2,038,414,690	2,038,414,690	0	0.000
P1	P2	multicast1	60.33.1.2	225.1.1.4	407,682,938	2,038,414,690	2,038,414,690	0	0.000
P1	P2	multicast1	60.33.1.2	225.1.1.3	407,682,938	2,038,414,690	2,038,414,690	0	0.000
P1	P3	multicast1	60.33.1.2	225.1.1.5	407,682,938	2,038,414,690	2,038,414,690	0	0.000
P1	P3	multicast1	60.33.1.2	225.1.1.4	407,682,938	2,038,414,690	2,038,414,690	0	0.000
P1	P3	multicast1	60.33.1.2	225.1.1.3	407,682,938	2,038,414,690	2,038,414,690	0	0.000

0 flows are detected as dead

- To revert back Flow Detective for all flows, simply delete filter in Flow Detective view.

And

- [Traffic Item] Equals multicast1
- [Rx Port] Equals All Rx Ports
- [IPv4 :Source Address] Equals 60.33.1.2
- [IPv4 :Destination Address] Equals 225.1.1.1
- [Flow State] Equals All Flows

(Use the Delete or Subtract key) Removes this condition

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Conclusion:

With Flow Filtering and Flow Detective, test engineers can quickly isolate and identify interesting flows. IxNetwork 5.40 not only provide carrier class traffic generation for millions flows, it also provides real time traffic flows analysis functions – Flow Filtering and Flow Detective. These functions combined with aggregated and multi-fields drill down statistics provide test engineer unsurpassable capabilities to save valuable test resource and reduced testing cycle.



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