

# BGP Configuration Through Wizard

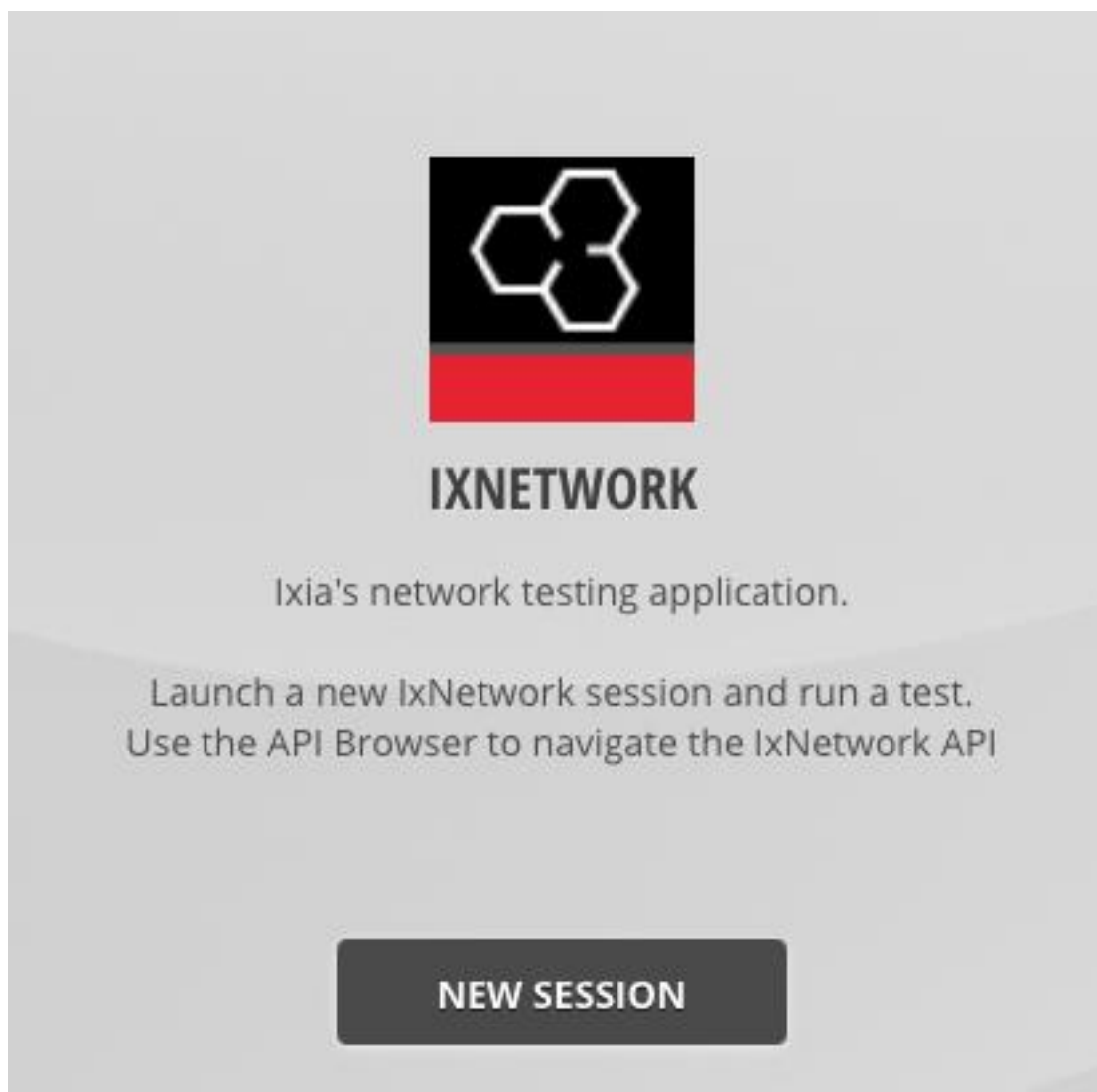
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## Connect to the IxNetworkWeb

1. Connect to <https://<chassis>/ixnetworkweb>
2. Use credentials to enter.
3. Click on New Session for IxNetwork.



*Figure 1 IxNetwork New Session*

4. This will open following page.

## Configure Base Configuration

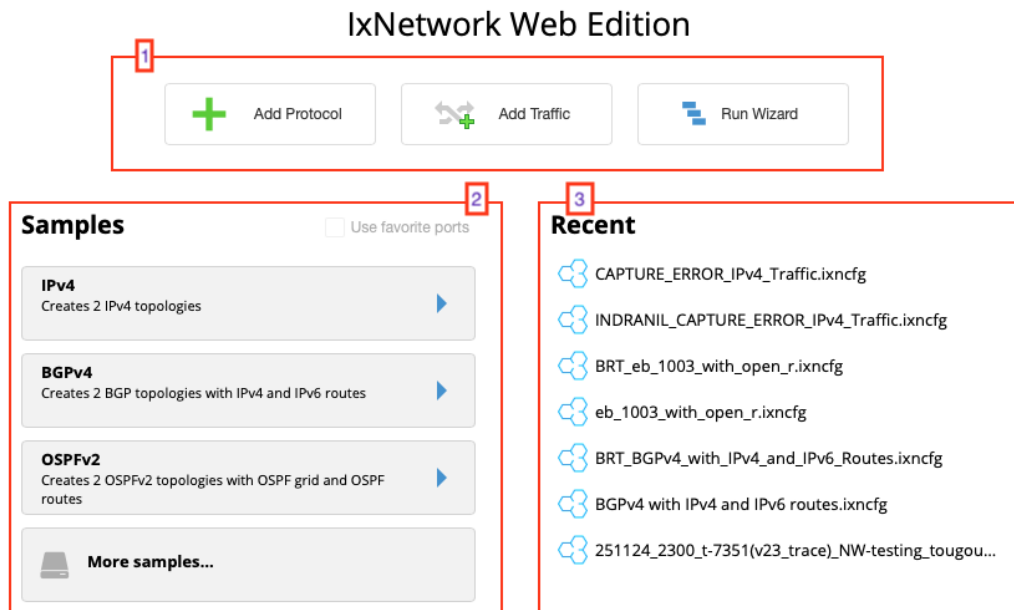


Figure 2 Landing Page

5. In Figure 2, boxes marked as [1] will have controls to perform user operation such as add protocol, add traffic, or run wizard.
6. Boxes marked as [2] contains options to create configuration quickly.
7. And boxes marked as [3] contains latest files saved on this system. Clicking them can quickly open that configuration.

8. On the landing page we can also find File control to perform various operations such as save, open etc.

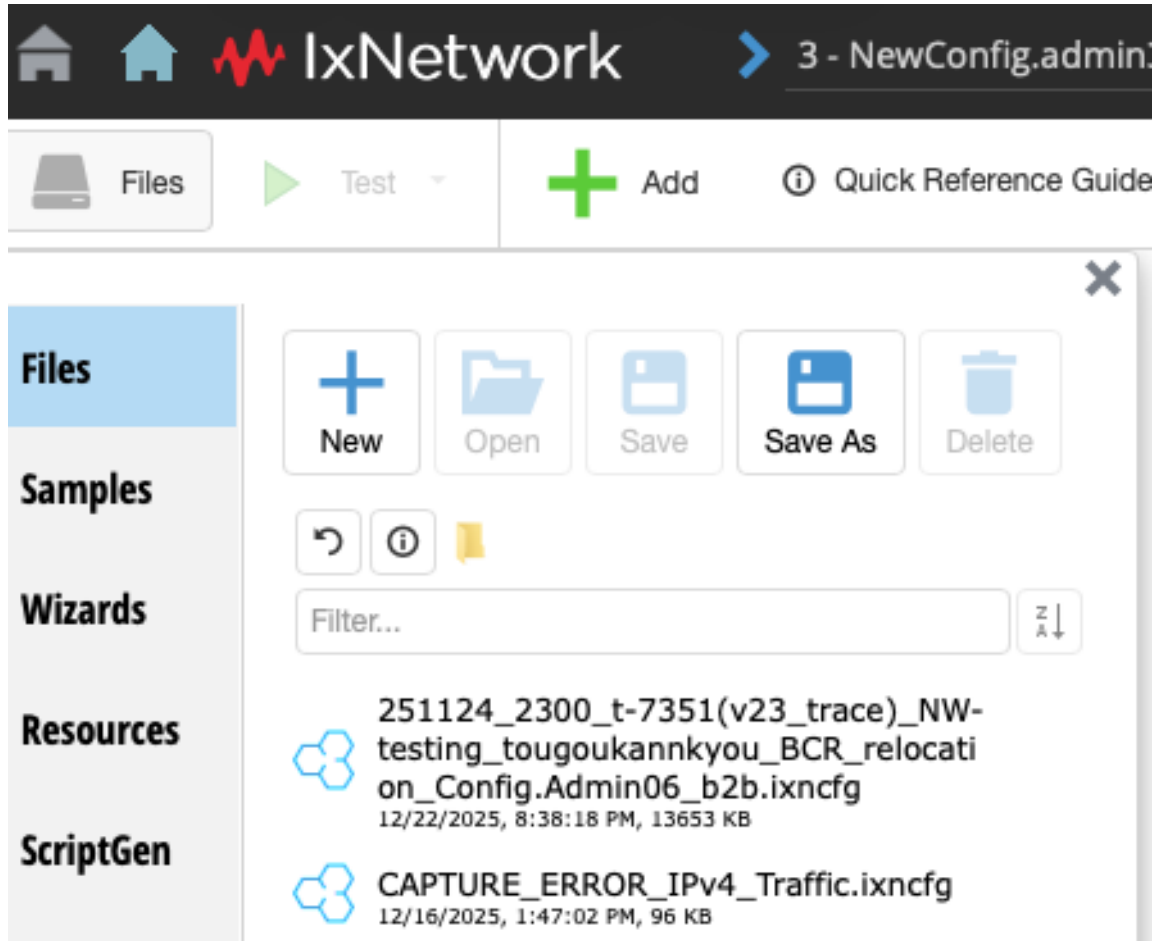


Figure 3 File Control

9. We can also see other operations in Figure 3. Among them Wizards will be of our interest.
10. We can reach to Wizards, from the option as shown in Figure 3, or we can trigger “Run Wizard” option in Figure 2. That operation will also bring us in same area.



11. Click on Device Wizard, and then New Wizard.
12. We'll arrive step 1 of the process.

**Device Wizard**

**Step 1: Add Components**

**Add To New Topologies**

DeviceGroups ☐

**Add To DeviceGroups**

Protocols ☐

**Add To Existing Topologies**

DeviceGroups (DG) ☐

NetworkGroups (NG) ☐

DG behind NG ☐

Import BGP Routes ☐

*Figure 5 Wizard Step 1*

13. Since this is a fresh configuration, chose DeviceGroups to be added to new topologies. All other options will be disabled once we click on this checkbox. Proceed to Next. Following page will appear.



## Device Wizard

### Step 2: Topology and DeviceGroup

Maximum 255 DeviceGroups can be created

#### Topology

Number of Topologies

Topology Prefix Name

#### DeviceGroup

DeviceGroups per Topology

Multiplier

DeviceGroup Prefix Name

Figure 6 Wizard Step 2

14. Modify this page as shown in Figure 6 in following manner:

- a. Number of Topologies = 2
- b. Topology Prefix Name = AS100
- c. Multiplier = 1
- d. DeviceGroup Prefix Name = BGP

15. Proceed to Next.

16. We'll now have a selection of protocols; from there we shall choose BGP.  
We can use Filter text box to find any protocol of our choice.

### Device Wizard

Step 3: Protocol Selection

Filter...

**Interfaces**

<input type="checkbox"/> Ethernet	<input type="checkbox"/> IPv4 Loopback	<input type="checkbox"/> IPv4	<input type="checkbox"/> IPv6 Loopback
<input type="checkbox"/> IPv6	<input type="checkbox"/> GREoIPv4	<input type="checkbox"/> GREoIPv6	

**Access**

<input type="checkbox"/> IPv6 Autoconfiguration	<input type="checkbox"/> DHCPv4 Client	<input type="checkbox"/> DHCPv6 Client	<input type="checkbox"/> DHCPv4 Server
<input type="checkbox"/> DHCPv6 Server	<input type="checkbox"/> DHCPv4 Relay Agent	<input type="checkbox"/> Lightweight DHCPv6 Relay Agent	<input type="checkbox"/> DHCPv6 Relay Agent
<input type="checkbox"/> PPPoX Client	<input type="checkbox"/> PPPoX Server	<input type="checkbox"/> L2TP Access Concentrator	<input type="checkbox"/> L2TP Network Server
<input type="checkbox"/> ANCP	<input type="checkbox"/> IEEE 802.1X	<input type="checkbox"/> BondedGRE	<input type="checkbox"/> CUSPv4 CP
<input type="checkbox"/> CUSPv4 UP	<input type="checkbox"/> UP Group Info		

**MPLS**

<input type="checkbox"/> Static-MPLS	<input type="checkbox"/> RSVP-TE	<input type="checkbox"/> RSVP-TE (P2MP)	<input type="checkbox"/> Basic LDPv6
<input type="checkbox"/> Basic LDP	<input type="checkbox"/> mLDP	<input type="checkbox"/> Targeted LDP	<input type="checkbox"/> Targeted LDPv6
<input type="checkbox"/> MPLSOAM			

**Routing/Switching**

<input type="checkbox"/> BFDv4	<input type="checkbox"/> BFDv6	<input type="checkbox"/> OSPFv2	<input type="checkbox"/> OSPFv3
<input type="checkbox"/> ISIS-L3	<input checked="" type="checkbox"/> BGP	<input type="checkbox"/> BGP+	

**Multicast**

<input type="checkbox"/> PIMv4	<input type="checkbox"/> PIMv6	<input type="checkbox"/> IGMP Host	<input type="checkbox"/> IPTVv4
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Figure 7 Protocol Selection

17. Proceed Next.

18. On the Interface Configuration Page, leave everything as default for this course. If any auto generation is turned off, we can create the addresses according to the requirement of the connectivity. Proceed to the next step.

19. Enable Summary and check the configuration summary. Once satisfied, click Finish.

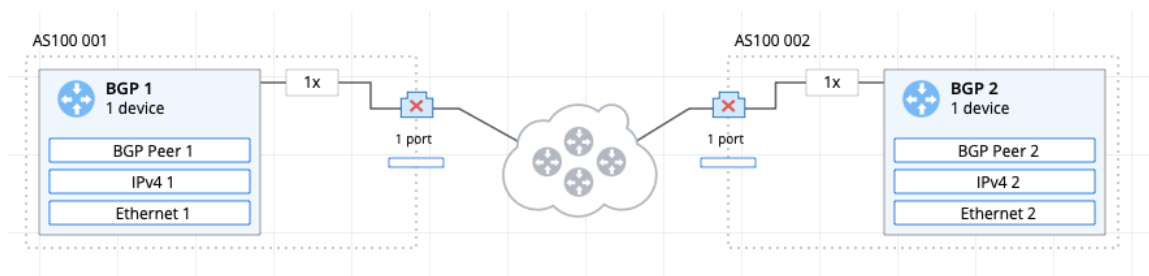


Figure 8 Creation of Topologies

## Configure Connectivity

20. Now Click on IPv4 1 Layer. From the below grid set:
  - a. IP Address as 10.10.10.10 and gateway as 10.10.10.20.
21. Click IPv4 2 Layer on second topology. From the below grid set:
  - a. IP Address as 10.10.10.20 and gateway as 10.10.10.10.
22. Click BGP Peer 1, and from Basic Tab set DUT IP as 10.10.10.20
23. For BGP Peer 2, set DUT IP as 10.10.10.10.
24. Click on BGP Peer 1 Layer and from Learned Routes Filters enable "Filter IPv4 Unicast". Do the same thing for BGP Peer 2.

Protocol Settings		BGP Peer		Global Settings		BGP Peer	
Basic	Advanced	Capabilities	Learned Routes Filters	Flap	Graceful Restart	SR TE Pr	
	Index	Topology	Port	Session	Filter IPv4 Unicast	Fi	
[-]		AS100 001	BGP Peer 1: 1 port	1 ranges	<input checked="" type="checkbox"/>		
	1	AS100 001	Ethernet - 001	# 1	<input checked="" type="checkbox"/>		

Figure 9 Enable Learned Filter

25. Select BGP Peer 1 and use Add option to add network group.

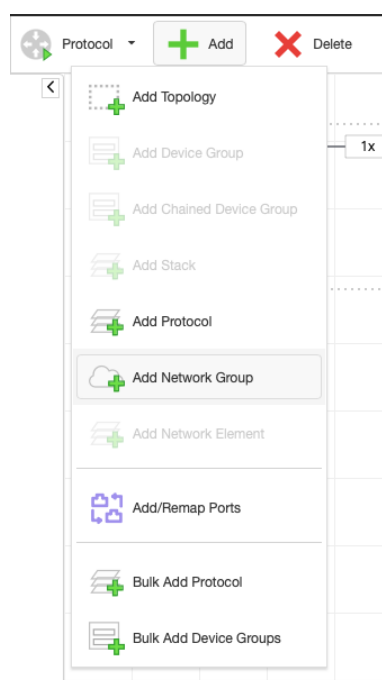


Figure 10 Adding a Network Group

26. Choose IPv4 Addresses. And select Append option to append. Do the same operation for BGP Peer 2.

## Select Protocols

Filter...

### IPv4 ADDRESS POOLS

- ☒ Basic IPv4 Addresses
- ☐ IPv4 Prefixes using Statistical Route Distribution
- ☐ BGP IPv4 Prefixes using Route Table Import

### IPv6 ADDRESS POOLS

- ☐ Basic IPv6 Addresses
- ☐ IPv6 Prefixes using Statistical Route Distribution
- ☐ BGP IPv6 Prefixes using Route Table Import

Figure 11 Basic IPv4 Addresses

27. Refer to figure 10. Choose Add/Remap ports to add ports to the topology.  
 28. After adding ports, connect all ports.  
 29. Once ports are connected Start the test from Test -> Start.  
 30. Protocols will come up.

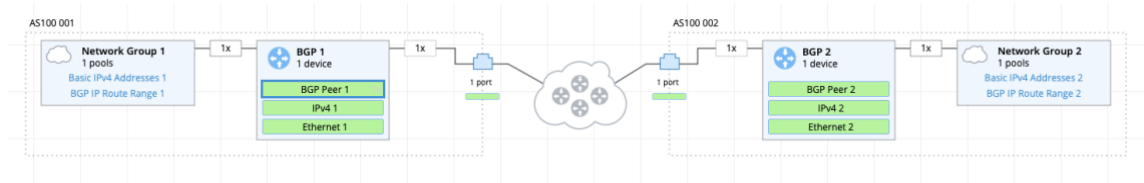


Figure 12 All Green!

## Learned Information

31. Let us fetch learned information. From Action button choose the option BGP Peer Get Non-VPN Learned Info.

**BGP PEER GET NON-VPN LEARNED INFO (SESSION #1)**

- ☒ Get IPv4 Learned Info
- ☐ Get IPv6 Learned Info
- ☐ Get IPv4 MPLS Learned Info
- ☐ Get IPv6 MPLS Learned Info
- ☐ Get Link State Learned Info
- ☐ Get IPv4 Flow Spec Learned Info
- ☐ Get IPv6 Flow Spec Learned Info
- ☐ Get SR-TE Policy Learned Info
- ☐ Get Traceroute Learned Info

Figure 13 Fetch Learned Info

32. Following learned information will be visible.

Protocol Settings		BGP Peer		Global Settings		BGP Peer		Learned Information		IPv4 Prefixes	
All											
	Index	Topology	Port	Session	IPv4 Prefix	Prefix Length	Path...	IPv4 Next Hop	IPv		
Session 10.10.10.10-...											
1 ranges											
	1	AS100 001	Ethernet - 001   10.36.84.1...	# 1	201.1.0.0	24	NA	10.10.10.20			

Figure 14 Learned Information on BGP Peer 1

## Traffic and Stats

33. Now click on Traffic option. Following page will open. Choose Add Traffic Item.

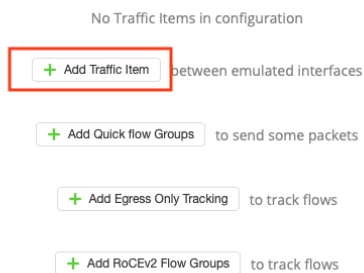
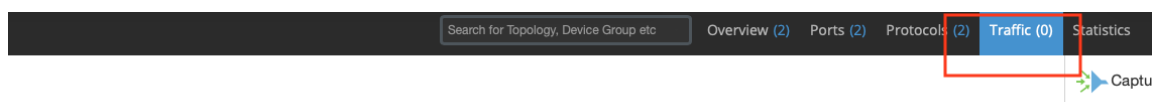


Figure 15 Traffic Addition

34. In Add Traffic page select IPv4, then chose the source end point and destination end point. Then click New Traffic Item.

**Add Traffic** IPv4 New Traffic Item

Src/Dst Mesh: **One - One**, Route/Host Mesh: **One - One**, Uni-Dlr

**Sources**

- ☒ All Ports
- ☒ AS100 001
  - ☒ BGP 1
    - ☒ Network Group 1
      - ☒ Basic IPv4 Addresses 1 - All
    - ☐ IPv4 1
  - ☐ AS100 002

**Destinations**

- ☒ All Ports
- ☐ AS100 001
- ☒ AS100 002
  - ☒ BGP 2
    - ☒ Network Group 2
      - ☒ Basic IPv4 Addresses 2 - All
    - ☐ IPv4 2

Figure 16 Endpoint Selection

35. Following Traffic Item will be created.

Traffic Item	State	Enabled	Src/Dst Mesh	Route Mesh	Bi-Directional	Statistics Tracking	Sources	Destinations	Stack	Frame Size	Frame Rate	Frame Rate D...	Payload	Protocol Behaviors
Traffic Item	UNAPPLIED	<input checked="" type="checkbox"/>	One - One	One - One	<input type="checkbox"/>	<none>	Network Group 1	Network Group 2	Ethernet II   IPv4	Fixed: 64	10% Line Rate	Port: Apply to...	Increment Byte	Traffic Item

Figure 17 Traffic Item

36. Start traffic and check the port statistics to see the frame transfer.

Row #	Stat Name	Port Name	Line Speed	Link State	Frames Tx...	Valid Frames...	Frames Tx...	Valid Frames Rx...	Data Integrity Frames Rx...	Data Integrity Errors	Bytes Tx...	Bytes Rx...	Bits Sent	Bits
1	10.36.84.12/Card03/Port03	Ethernet - 001	100GE	Link Up	1,414,651,349	5	14,880,952	0	0	0	90,537,686,495	461	724,301,491,960	
2	10.36.84.12/Card03/Port04	Ethernet - 002	100GE	Link Up	5	1,414,651,306	0	14,880,950	0	0	461	90,537,685,472	3,688	724,301

Figure 18 Port Stats

37. Stop traffic and enable tracking. Go back to traffic item and click Statistics Tracking column. Choose Dest Endpoint.

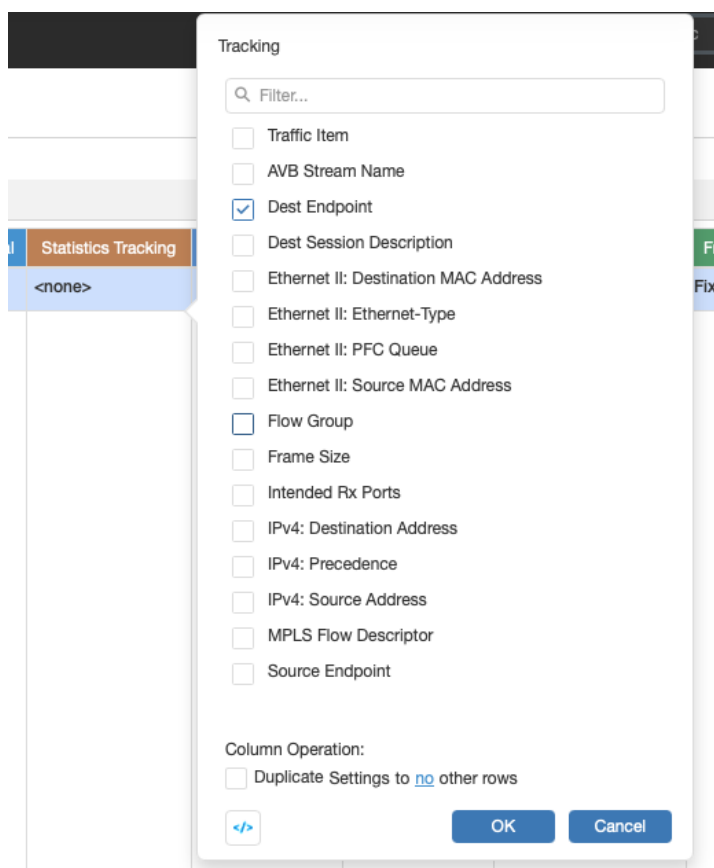


Figure 19 Enable Stats Tracking

38. Now start traffic, and from Statistics option choose Flow Statistics to check the stats.