Export BGP community information in IP Flow Information Export (IPFIX)

draft-li-opsawg-ipfix-bgp-community-00

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Background

- Traffic Engineering/Traffic Steering/Traffic load balancing Network administrators needs to get the flow information with amount a nd direction of traffic in their network in order to realize the network opti mization.
- IPFIX is designed for exporting formatted IP flow informati

on

Flow information is transferred from an exporter to a collector with infor mation elements defined in [IANA-IPFIX]

- sourceIPv4Address / destinationIPv4Address
- sourceTransportPort / destinationTransportPort
- bpgSourceAsNumber / bgpDestinationAsNumber
- etc.

BGP Community Based Flow Information

- For traffic engineering in operators' backbone networks, flow infor mation based on the existing IEs is not always suitable
 - Flow information based on IP address or IP prefix is meticulous.
 - Flow information based on AS numbers is too coarse.
- BGP community can provide the suitable flow granularity
 - Describes a group of routes sharing some common properties
- Flow information based on BGP community needs to be exported using IPFIX

 $_{\pm}$ Up to now, no existing IE is defined for BGP community informatio n.

Application

• Architecture 1

	Exporter			Mediator			Collector	
hold tl Ioo	he up-to-date BGP routin k up in the BGP routing t	g table able	hol	d the up-to-date BG look up in the BGP r	P routing tab outing table	le	Collect the flow informat based on BGP commun	ion ity
bg bg bg 	gpSourceAsNumber gpDestinationAsNumb gpNextHopIPv4Addres existing IEs	er s	Co wi m sp	orrelating BGP ith the flow info atching the rou pecific flow	community rmation by te for the	y y e		
• Δ	Architecture 2	7	NL	aw IEs for BGD co	mmunity			
	Exporter				iiiiiuiiity		Collector	
hold tl Ioo	ne up-to-date BGP routin k up in the BGP routing t	g table able					Collect the flow informati based on BGP communit	on ːy
bg bg bg	pSourceAsNumber pDestinationAsNumb pNextHopIPv4Addres	er s						
Ne	ew IEs for BGP comm	unity	IEI	F96 @ Berlin [O	PSAWG]			

IE definition

• Two information elements are defined in order to export the

BGP community information.

bgpSourceCommunityList

- bgpDestinationCommunityList
- Both IPv4 and IPv6 traffic are applicable.
- Both exporter and mediator can use these two IEs to export BGP community information in IPFIX.

IE definition: bgpSourceCommunityLi st

 bgpSourceCommunityList with its data type semantics listed as follows.

I	ElementID	I	to be assigned by IANA, 458 is suggested	
	Name	1	bgpSourceCommunityList	
	Data Type	1	basicList, as specifed in [RFC6313]	
	Data Type Semantics	I	list	
	Description		BGP community information corresponding with source IP address	
	Units		not needed	

Figure 1: bgpSourceCommunityList

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IE definition: bgpDestinationCommunit yList

• bgpDestinationCommunityList with its data type semantics listed as follows.

ElementID	to be assigned by IANA, 459 is suggested
Name	bgpDestinationCommunityList
Data Type	basicList, as specifed in [RFC6313]
Data Type Semantics	list
Description	BGP community information corresponding with destination IP address
Units	not needed

Figure 2: bgpDestinationCommunityList

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Next steps

- See if other operators have similar requirements
- Solicit comments and contributions to improve this dra ft
- Work group adoption ?

MANY THANKS

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