Intel® Ethernet Controller X710/ XXV710/XL710

Dynamic Device Personalization for IPv4 Multicast

Ethernet Products Group (EPG)

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Revision 1.2

Revision History

Revision	Date	Comments
1.2	July 13, 2020	Added support for new device ids.
1.1	June 24, 2019	Final version.
1.0	June 7, 2019	Initial release (Intel Confidential).

1.0   Introduction

This documents describes the Dynamic Device Personalization (DDP) functionality supported by the Intel® EthernetIntel® Ethernet Controller X710/XXV710/XL710 starting with firmware version 6.01.

The DDP profile (0x8000000B) contains the X710/XXV710/XL710 parser graph for IPv4 Multicast .The IPV4 Multicast profile can be used to enhance performance and optimize core utilization for virtual network functions extensively processing IPv4 multicast traffic requiring separation of multicast and unicast IPv4 flows.

Table 1-1. Terms and Definitions

Term	Definition
DPDK	Data Plane Development Kit

Table 1-2. Version History

Version	Description
1.0.0.0	Initial release of IPV4-Multicast parser graph for the X710/XXV710/XL710.

Table 1-3. Firmware/NVM Support Matrix

FW Version	NVM Map Version	Description
6.01	6.36	Operating system and device independent.
6.02	6.48	
7.0	8.77	

Table 1-4. IPV4 Packet Field Vector

Word Num	Protocol Layers
	L2 Protocol Layers
0:2	Destination MAC address (in outer or single L2 header)

Table 1-4. IPV4 Packet Field Vector

3:5	Source MAC address (in outer or single L2 header)
6	Default S-tag (DPDK: word 37)
7	0x00.
8	Inner or single VLAN tag (in outer or single L2 header)
	L3 Protocol Layers
9	First 8 words of the IPv4 header (up to including the source IP address).
10	
11:12	
13:16	
17:20	0x00
21:22	0x00
23:26	0x00
27:28	Destination IP address.
	L4 Protocol Layers

	TCP	UDP	SCTP	ICMP
29:30	First 16 bytes of the TCP header.	First 8 bytes of the UDP header.	First 8 bytes of the SCTP header.	Words 0, 1 of the header.
31:32				0x00
33:36		0x00	0x00	

	DPDK Outer VLAN for QinQ			
37	S-tag (DPDK)	S-tag (DPDK)	S-tag (DPDK)	S-tag (DPDK)

	Tunnel Layer and Flexible Payload
38:43	0x00
42:4	0x00
44:45	0x00
	Tunnel Layer and Flexible Payload
46:49	0x00
50:57	Outer destination IP address or flexible payload.

Note: DPDK (up to release 17.11) forces flexible payload to the first 16 bytes of the payload and overrides the outer destination IP address. Starting from DPDK 18.02, the flexible payload is extracted only if enabled by the flow director configuration.

Table 1-5. Packet Classifier Types and Its Input Set

PCTYPE	PCTYPE Description	Hash Input Set	FD Input Set
30	IPV4MCAST0	IPv4 Destination address	IPv4 Destination address
	IPV4MCAST1		
	IPV4MCAST2		
	IPV4MCAST3		

Table 1-6. Packet Types

	The recipe does not add new PTYPE		

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