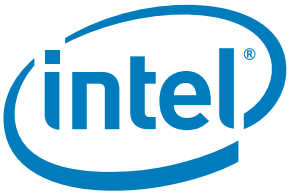

Intel® Ethernet Controller X710/ XXV710/XL710

Dynamic Device Personalization MPLS Tunneling Protocol

June 2019

Revision 1.1
June 2019

Revision History

Revision	Date	Comments
1.1	June 25, 2019	Final revision.
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® Ethernet Controller X710/XXV710/XL710 starting with firmware version 6.01.

The DDP profile (0x8000000C) contains the X710/XXV710/XL710 parser graph for MPLS.

MPLS tunneling is established in NFV deployments today.

MPLS connects with the existing router, and the MPLS profile can inspect the tunnel header so that traffic can be directed into multiple queues, which can later be processed by multiple cores.

Table 1-1. Terms and Definitions

Term	Definition
DPDK	Data Plane Development Kit

Table 1-1. Version History

Version	Description
1.0.0.0	Initial release of mplsogreudp parser graph for the X710/XXV710/XL710.

Table 1-2. 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 1-3. MPLS Packet Field Vector

Word Num	Protocol Layers			
	L2 Protocol Layers			
0:2	Destination MAC address (in outer or single L2 header).			
3:5	Source MAC address (in outer or single L2 header).			
6	0x00			
7	0x00			
8	0x00			
	L3 Protocol Layers			
	Inner IPv4			
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)
	MPLS Tunnel Layer and Flexible Payload			
38:41	0x00			
42:43	0x00			
44:45	MPLS label			

Table 1-3. MPLS Packet Field Vector

	MPLS 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 1-4. Packet Classifier Types and Its Input

	The recipe does not add new PCTYPE		

Table 1-5. Packet Types

	The recipe does not add new PTYPE		

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