

Extensions to PCP

draft-boucadair-pcp-extensions

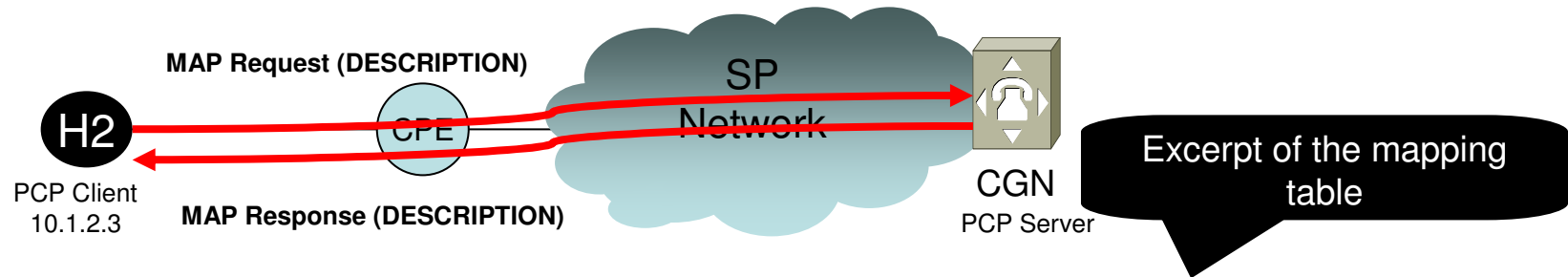
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Scope

- This document defines several extensions to PCP
 - Presented as PCP Options
 - But some of them can be promoted to be defined as PCP OpCodes

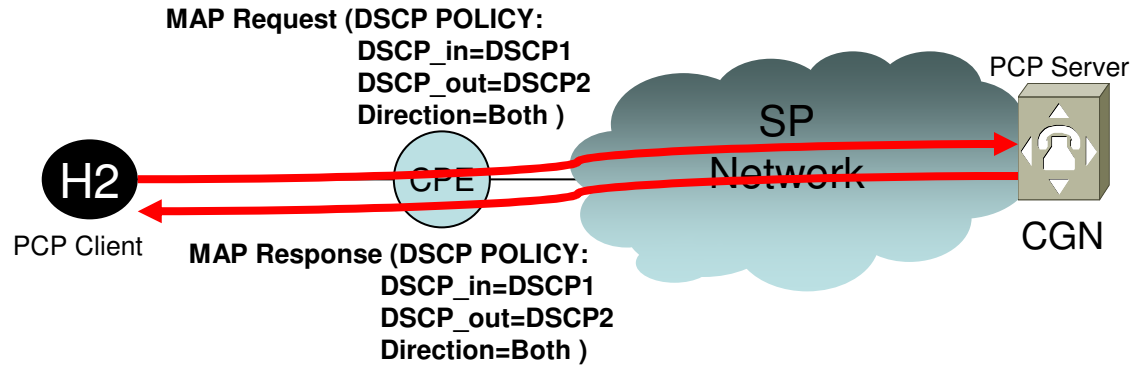
DESCRIPTION Option



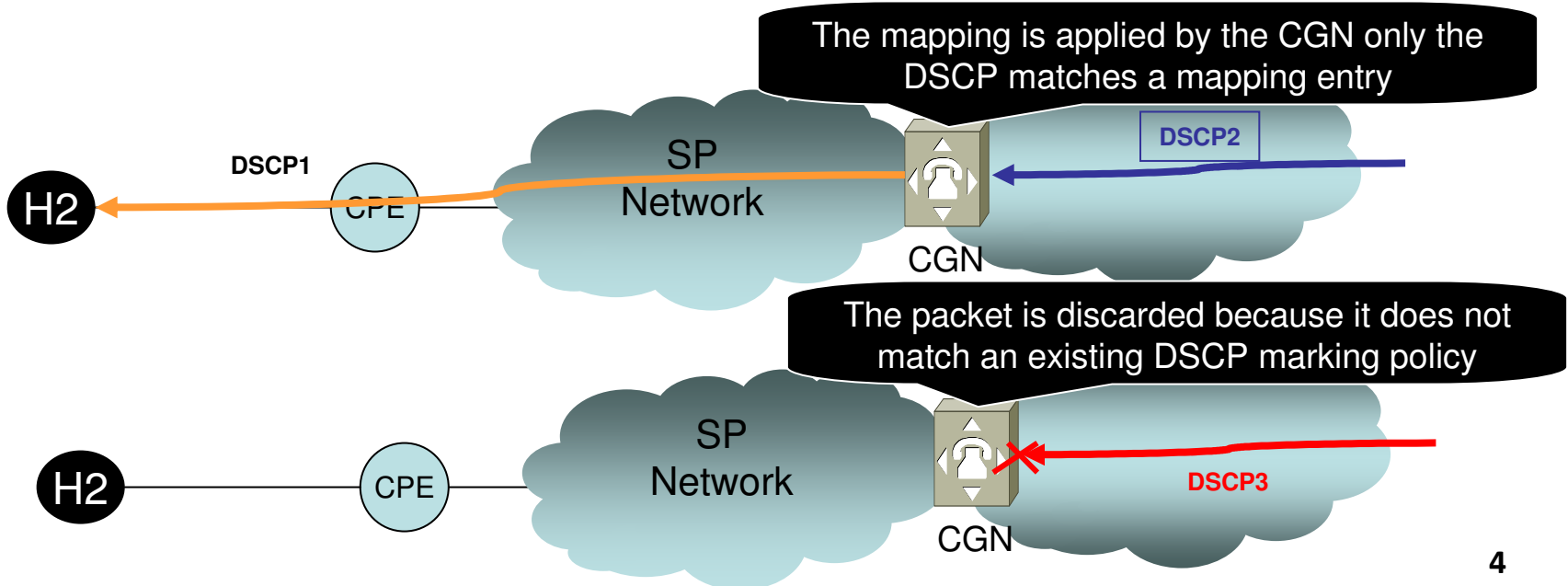
Internal IP Address	Internal Port	External IP address	External Port	Description
10.1.2.6	5060	1.2.3.4	41556	My SIP Server
10.1.2.11	15426	1.2.3.4	12451	Game
10.1.2.3	15685	1.2.3.4	16597	To access my WebCam from outside

Associate a free description text with a mapping
 The PCP Server limits the length of the description text
 It returns the stored description data to the PCP Client in the PCP Response

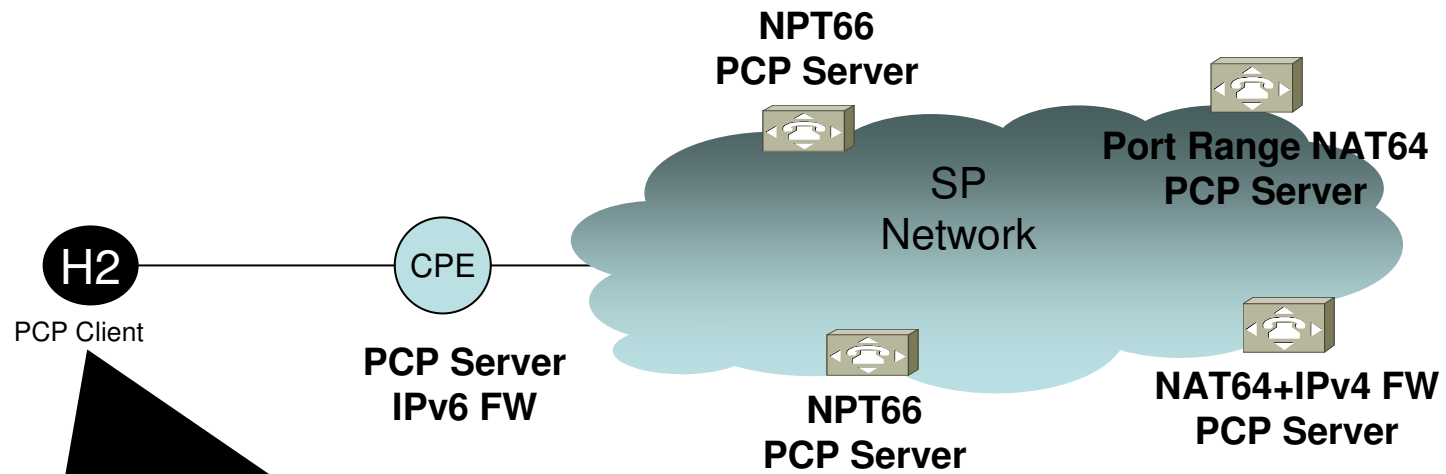
DSCP Marking Policy



Internal IP Address	Internal Port	External IP address	External Port	DSCP_IN	DSCP_OUT	Direction
10.1.2.3	5060	1.2.3.4	16597	DSCP1	DSCP2	Both

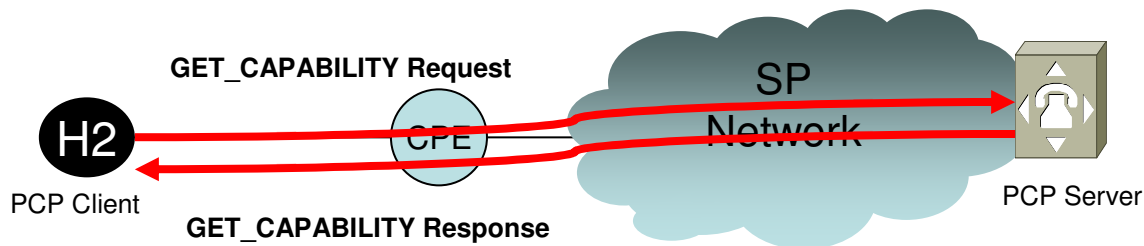


Capabilities: The Issue



How the PCP Client is aware of the capabilities of each PCP Server so that it can tweak the PCP request(s)?

GET_CAPABILITY



```

GET_CAPABILITY OPCODE
0          1          2          3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-----+-----+-----+-----+
| F T P A S C I O | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
+-----+-----+-----+-----+

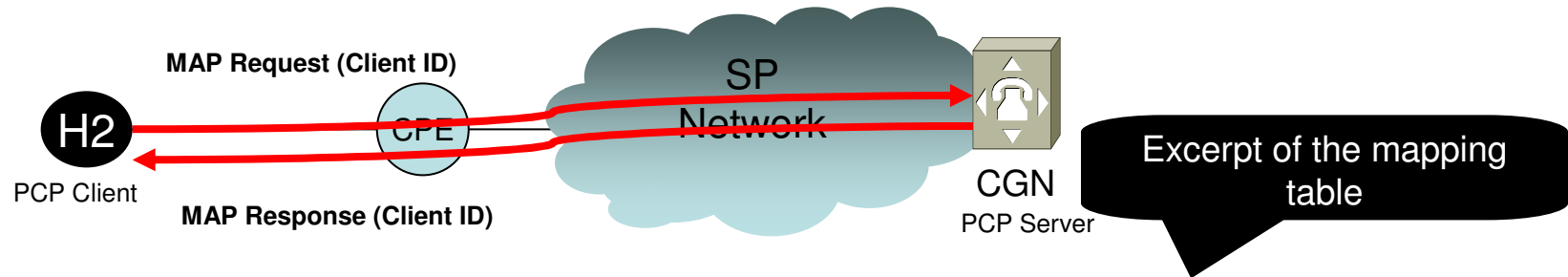
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Position	Name	Meaning
1	From (F)	0=from IPv4, 1=from IPv6
2	To (T)	0=to IPv4, 1=to IPv6
3	Port-Xlate (P)	1=translated, 0=not translated
4	Addr-Xlate (A)	1=translated, 0=not translated
5	Port-Set (S)	1=enabled, 0=not supported
6	Packet-Control (C)	1=enabled, 0=not supported
7	Direction-Out (I)	1=enabled, 0=disabled
8	Direction-In (O)	1=enabled, 0=disabled

A NAT44 would be characterized as

- From=0 (IPv4)
- To=0 (IPv4)
- Port-Xlate=1 (Yes)
- Addr-Xlate=1 (Yes)
- Port-Set=0 (No)
- Packet-control=0 (No)
- Direction-out (0) (No)
- Direction-In=0 (No)

CLIENT_IDENTIFIER



Client-ID	Internal IP Address	Internal Port	External IP address	External Port
4576732139 7231	10.1.2.3	5060	1.2.3.4	16597

Persistent PCP Identifier during CPE reboot or IP address change

1. Avoid stale mapping entries in the PCP Server
2. Allows to refresh the mapping when a new IP prefix/address is assigned
3. Avoid accidental delete-all when several PCP clients are located behind the same CPE

Next Steps

- What is the next step for this I-D?
 - Should we define each Option/OpCode in individual documents?