

MAP Provisioning over DHCPv6

IETF82

draft-mdt-softwire-map-dhcp-option-01

MAP Design Team
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History

- Result of MAP Design Team work
 - 5 authors with varied backgrounds
 - Tomek Mrugalski (DHCP implementor)
 - Ole Troan (vendor)
 - Mohamed Boucadair (operator)
 - Xiaohong Deng (operator)
 - Congxiao Bao (dIVI/dIVI-PD)
 - The whole MAP Design Team contributed
- Reused parts of previous work
 - 4rd: draft-mrugalski-dhc-dhcpv6-4rd-00
 - A+P: draft-boucadair-dhcpv6-shared-address-option-01
- Tight schedule:
 - Work began early October
 - draft-mdt-softwire-map-dhcp-option-00 (24 Oct.)
 - draft-mdt-softwire-map-dhcp-option-01(31 Oct.)

Design principles

- Closely ***follows*** MAP design draft
- Design principles:
 - 1) Use least # of parameters (avoid redundancy)
 - 2) Choose simpler form if not contradicts 1)
 - 3) Reuse what we have now
 - 1) DHCPv6-PD
 - 2) DHCPv6 address



Options layout

- One or more MAP rules need to be provisioned to CE
- BR configuration is outside of scope
- Each MAP rule consists of:
 - ~~Rule-id~~ (to be removed in -02)
 - Rule IPv4 prefix/length
 - Rule IPv6 prefix/length
 - EA-Len (Embedded Address Length)
 - Port Set Parameters (optional)
- Port Set Parameters (optional one sub-option per rule):
 - Excluded ports
 - Offset bits (currently 4 or 6)
 - Offset base: a or m
- MAP Flags (one option per whole configuration):
 - Transport: encap or translation

-02 Changes

- Removed rule-id field in MAP rule
 - Simple (2x if) algo for detecting rule type
- Redundant parameter to be removed
 - Prefix4-len, prefix6-len, ea-len, excluded-ports, offset (only 4 are independent, one has to go)
- Options layout simplified (flatter)

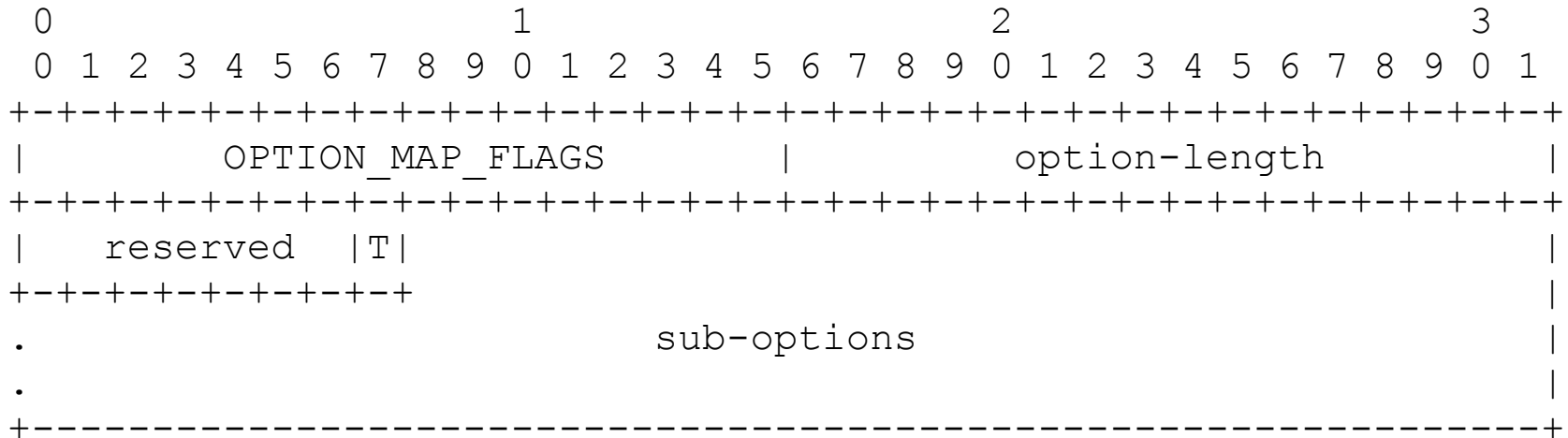
-01 (old)

```
<MAP_FLAGS>
  <MAP_RULE1>
    <MAP_PORTPARAMS>
  <MAP_RULE2>
  ...
  <MAP_RULEN>
</MAP_FLAGS>
```

-02 (new)

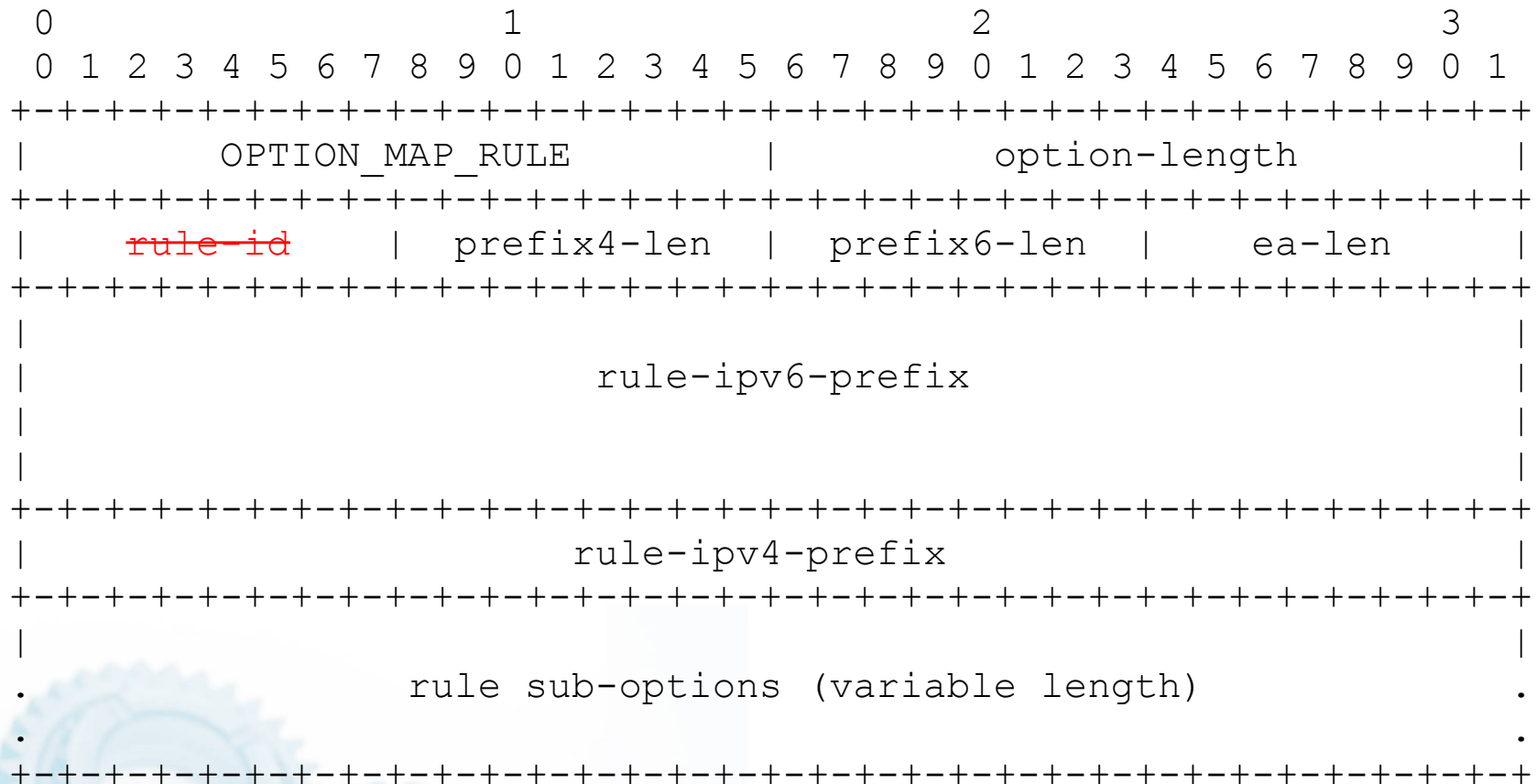
```
<MAP_FLAGS>
  <MAP_RULE1>
    <MAP_PORTPARAMS>
  <MAP_RULE2>
  ...
  <MAP_RULEN>
```

Proposed options (1): MAP Flags



- A single container option
- Parameters applicable to the whole MAP domain
 - Only one for now
- Extensibility
 - May convey other options
 - Used to convey MAP rule options in -01
 - MAP rule options are top-level options in -02

Proposed options (2): MAP Rule



- May convey default, basic or forwarding rule
- -02 changes: rule-id field removed

Proposed options (3): MAP Port Set Params

```

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
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|      OPTION_MAP_PORTPARAMS      |      option-length      |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|      excluded-ports      |A|  rsv  | off |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
```

- Optional Port set parameters
- MAY appear as sub-option in MAP Rule Option



Next steps

- Requesting broader feedback
- Follow draft-mdt-softwire-mapping-address-and-port
- Requesting for adoption





Thank you