

# Turning off IPv4 Using DHCPv6

draft-perreault-sunset4-noipv4-03

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IETF 87, Berlin  
SUNSET4 meeting

2013-07-31

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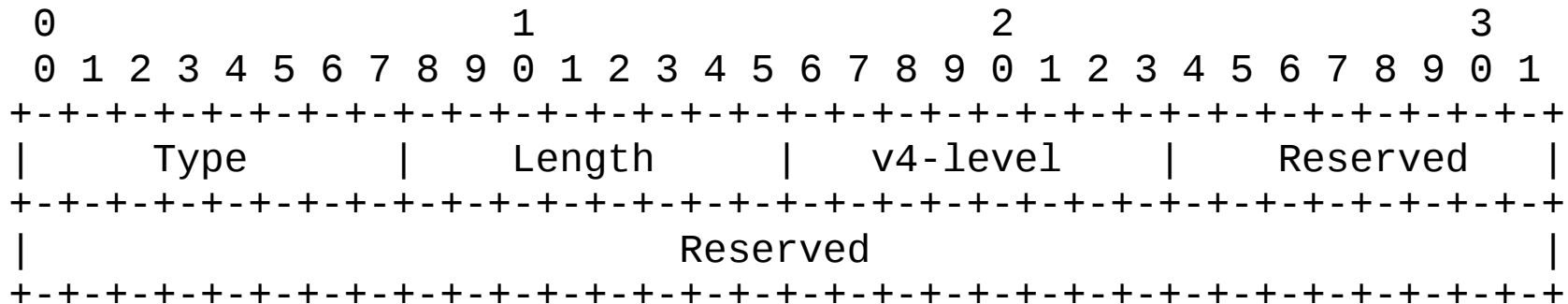
2013-07-31

# Status

- Guidance received at IETF 86:
  - An RA option could also work
  - WG undecided between DHCPv6 and/or RA
- Since IETF 86:
  - Published -03, introducing a No-IPv4 RA option

# The No-IPv4 RA option

- Exactly the same semantics as the DHCPv6 option
- Optionally propagated downstream



Type                    TBD

Length                    1.

v4-level                    Level of IPv4 functionality.

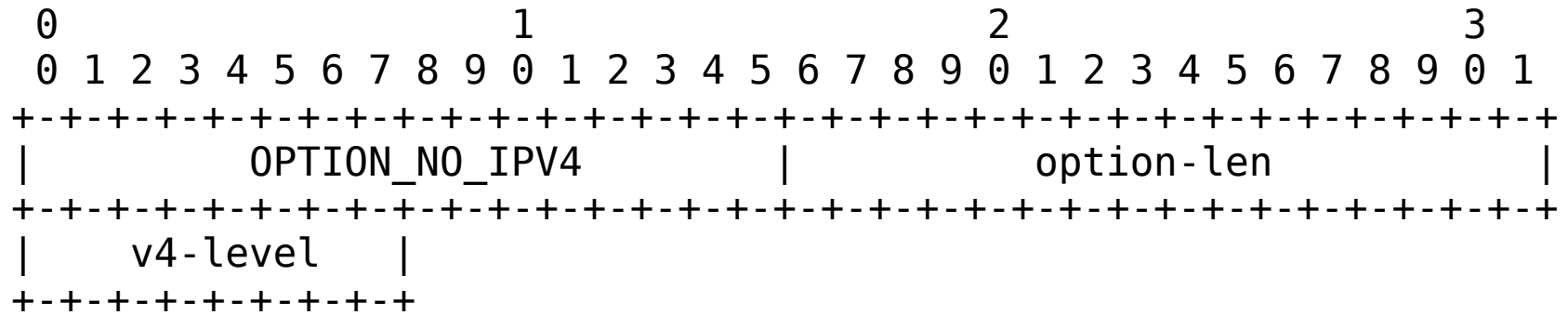
Reserved                    These fields are unused. They MUST be initialized to zero by the sender and MUST be ignored by the receiver.

# DHCPv6 vs RA

- The usual arguments
- For RA:
  - Router on link is best placed to know if IPv4 is available or not
  - No-IPv4 semantics apply to a link
- For DHCPv6:
  - Selectively disabling IPv4 on some clients within a link based on central provisioning parameters
- WG expected to decide whether both solutions, only one, or none are desirable

A reminder of what this is about  
for our friends from DHC

# The No-IPv4 DHCPv6 option



option-code	OPTION_NO_IPV4 (TBD).
option-len	1.
v4-level	Level of IPv4 functionality.

# v4-level

- 0 – IPv4 fully enabled
- 1 – No IPv4 upstream
- 2 – No IPv4 upstream, local IPv4 restricted
- 3 – No IPv4 at all



# Example

- Dual-stack home router
  - Single WAN link
    - DHCPv4
    - SLAAC + DHCPv6
  - Single LAN link with multiple hosts
- On boot:
  - Assign 192.168.1.1/24 to LAN
  - Starts DHCPv4 server on LAN
    - Hands out 192.168.1.100-199 to clients
  - Starts IPv6 RA daemon and stateless DHCPv6 server on LAN

# Example (cont.)

- Starts two provisioning processes in parallel: one for IPv4, one for IPv6
- In IPv6 process:
  - Router puts OPTION\_NO\_IPV4 in ORO in Request
  - Receives Reply with No-IPv4 level 2
  - Router aborts IPv4 provisioning process (if still running)
  - Deactivates all IPv4 functionality
  - Configures stateless DHCPv6 server to send the No-IPv4 option to LAN clients that request it
- Optimization: delay IPv4 provisioning process (10 seconds?) to avoid any IPv4 set up

# Next steps

- Authors believe the RA vs DHCPv6 debate should happen after adoption
- Are there issues that would prevent adoption?