



**I E T F**<sup>®</sup>

# IPv6 RA IPv6-Only Flag

## <draft-ietf-6man-ipv6only-flag-01>

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# Background



- Observation at IETF100 IPv6 Only network that dual stack hosts were
  - Creating IPv4 auto-configured IPv4 addresses
  - Attempting to reach IPv4 services
- Proposal came of discussion on how to stop this
- Large Enterprise planning IPv6-Only has supported proposal
- Draft was adopted as 6MAN document after IETF101 on 15 May 2018

# Dual Stack host behavior



- Layer 2 Broadcast Traffic
- Doubles state in switches
- Drains battery on wireless hosts (see RFC7772)
- Possible use of IPv4 for malicious traffic

# Main Draft Content



- New flag for Router Advertisement (RA) that allows administrator to notify dual stack hosts on link that this is an IPv6-Only link

```
 0 1 2 3 4 5 6 7
+--+--+--+--+--+--+
|M|O|H|Prf|P|6|R|
+--+--+--+--+--+--+
```

Bit 6, named 6, is for IPv6-Only 😊

Values:

```
0    This is not an IPv6-Only link
1    This is an IPv6-Only link
```

- Draft updates the IANA RA Flags Registry to add this flag

# Changes Since IETF101



- Changed the name to be IPv6-Only flag
- Changed focus to Administrator notify hosts that the link is IPv6-Only
- Added Applicability statements and Definition of IPv6-Only
- Added clarifications based on list discussion
  - If lifetimes of all routers expire
  - Only relates to other versions of the Internet Protocol
  - Expanded discussion of L2 filtering

# Next Steps



- Open Issues?
- Ready for working group. last call to advance to Proposed Standard?



# QUESTIONS / COMMENTS?



# BACKGROUND



# Router Considerations



- Only applies to Default Routers
- Administrator sets flag to desired value
  - Router doesn't set flag autonomously

# Host Considerations



- Host SHOULD only look at flag if RA is from a default router
  - Lifetime field  $\neq 0$
- If all RAs received have flag = 1, then host should assume link is IPv6-Only
- Hosts SHOULD follow Flag state
- Hosts MAY delay IPv4 operations until RAs are received, and/or only if an application requests to use IPv4