IPv6 RA IPv6-Only Flag
<draft-ietf-6man-ipv6only-flag-01>

I E T F ®

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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|
+-+-+-+-+-+-+-+-+

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

Bit 6, named 6, is for IPv6-Only ☺

- 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 ≠ 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