IPv6 Router Advertisement
IPv4 Unavailable Flag
<draft-hinden-ipv4flag-03>

Bob Hinden
Brian Carpenter

IETF101 London
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
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
Proposal

- New flag for Router Advertisement (RA) that allows administrator to notify dual stack hosts on link that there isn’t IPv4 on this router

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

Values:
- 0  IPv4 is Available on this default Router
- 1  IPv4 is Not Available on this default Router

- Draft would update IANA RA Flags Registry to add this flag
Router Considerations

- Only applies to Default Routers
- Administrator sets flag to desired value
Host Considerations

- Host 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 not attempt IPv4 operations
  - Reasonable to assume there is no IPv4 on link
- Flag value is advisory
- Hosts may delay IPv4 operations until RAs are received, and/or only if an application requests to use IPv4
Next Steps

- 6MAN adopt as working group document?
QUESTIONS / COMMENTS?