

Operational Issues with DHCPv6

Purpose and Outcomes

- List potential operational issues around DHCPv6
- Are there other, similar issues?
- Does each issue require action?
- What needs to be done and who should take ownership?

DHCP == “stateful autoconfiguration”?

- DHCP is loosely referred to (e.g., RFC2461, RFC2462) as “stateful autoconfiguration” mechanism
- Does this loose reference require clarification?

'M', 'O' and 'A' bits

1. 'A' bit set in prefix advertisement causes SLAAC, independent of 'M' or 'O' bits in RA

2. 'M' bit set in RA causes DHCP for address assignment (and implies 'O' bit), independent of SLAAC (1); 'M' bit not set gives no guidance on use of DHCP

3. 'O' bit set in RA causes DHCP for other configuration (but not address assignment); 'O' bit not set gives no guidance on use of DHCP

Net admin restricts hosts to DHCP addresses by not setting 'A' bits in any prefixes

Requirement for DHCP

- An IPv6 stack MUST include DHCP
- Required for use when 'M' or 'O' bit set

Authentication for DHCPv6

- Evolved from RFC3118 (DHCPv4 authentication)
- Incorporates input from Steve Bellovin
- Keys now include:
 - “DHCP realm” for roaming
 - Lifetime and key selection for key rollover

Inconsistencies between DHCP and other sources

- Preferred and valid lifetimes on advertised prefixes do not apply to addresses assigned through DHCP
- Other inconsistencies are not fatal and are resolved by “latest information wins” [RFC246?]
- (Vaguely related question) Are these three situations equivalent?
 - Not advertising a prefix
 - Advertising a prefix as not on link
 - Letting the lifetime of a prefix expire

DNS configuration

- Net admin can select DNS resolver autoconfiguration with 'O' bit not set and DNS resolver configuration through DHCP with 'O' bit set
- Requires stack MUST have DHCP for use with 'O' bit set

SLAAC and DHCP from same prefix

- Does current DAD specification protect against conflict among SLAAC addresses and DHCP assignment from prefix advertised with 'A' bit set?
- Should there be a recommendation against DHCP assignment from an SLAAC prefix?

Reserved interface identifiers

- Should there be a recommendation against assigning DHCP that use any reserved interface identifiers?