

DNS discovery

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Background

- Short term issue
 - Provide a way for hosts to find the DNS servers
 - ... and potentially other DNS configuration information?
 - Needed for IPv6 implementations today
- Longer term issue
 - Investigate “service discovery without 3rd party dependencies”
 - Goal is to make the network more robust
 - This would be a fine topic for a BoF

Concerns from IESG members (E.g., Randy, Erik, ...)

- Sets an architectural precedent
 - Requires allocation of well-known unicast addresses
 - Even if only site local
 - We have not done this before – will other services also ask for such allocations?
 - Is DNS more special than e.g. SIP?
- Seems like a short term solution
 - The shape of a future “service discovery without 3rd party dependencies” approach is not known
- All unicast/anycast approaches raise these concerns

Unicast addresses per service vs. Multicast

- Security aspects of unicast and multicast
 - Hosts can securely join multicast group – all receive packets
 - Injecting unicast route can be used to “steal” packets from legitimate receiver
 - This is an authorization issue i.e., hard
- Hosts either participate in routing, or use static routes resulting in less robustness
- Do we allocate all in the same /64?
 - Do we understand the operational implications?

Other issues on the list

- What about other information?
 - Do hosts need to know their FQDN?
 - For DNS dynamic update?
 - (S)NTP server?
- DNS considerations
 - Trust relationship between the client and resolver
 - E.g., The DNS “AD” bit

If I was an implementor

- Just use DHCPv6 information request for DNS configuration
 - Allows configuration of servers, search path, host name, etc.
 - Piggyback on DHCPv6 security
- Assumes
 - Single link, or
 - Site-local multicast from relay to server, or
 - Configured relays (with address of server)

Observations

- The deep issues (e.g., relating to DNS security) are
 - Common to IPv4 and IPv6
 - Not the expertise of this group
- The DNSOP WG is being rechartered to focus on IPv6 DNS operational issues