

NAT64/DNS64 detection via SRV Records

draft-ietf-v6ops-nat64-srv-00

Martin Hunek <martin.hunek@tul.cz>

Why?

- There are solutions for NAT64 detection, but:
- RFC7050 doesn't work with „foreign“ DNS
- RFC8484 (DoH) introduces „foreign“ DNS
- Undetected DNS64 breaks DNSSEC
- Undetected NAT64 prefix = no IPv4

Current solutions

- RFC7050 (via local DNS)
- RFC7225 (via PCP)
- draft-pref64folks-6man-ra-pref64-02 (via RA)
- draft-ietf-v6ops-nat64-srv-00 (via global DNS)

RFC7050

- Pros:

- Works without modifications to protocols
- Solves most of the RFC7051 issues

- Cons:

- Requires DNS64 with same NSP/WKP
- No priorities
- WKP not secured by DNSSEC
- The first step is insecure

RFC7225

- Pros:
 - Solves all of RFC7051 issues
- Cons:
 - Requires both client and server to have PCP support
 - Requires effort

draft-pref64folks-6man-ra-pref64-02

- Pros:
 - Single packet configuration
 - Solves all RFC7051 issues
- Cons:
 - Requires local DNS64
 - For now /96 only
 - System level change

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- Pros:

- Solves most of the RFC7051 issues
- Allows priorities
- Works with „foreign“ DNS
- Application level change
- No changes in protocols

- Cons:

- Requires local domain detection
- Requires DNS

Local domain detection

- SLAAC-DNSSSL option
- DHCPv6 option 24
- PTR record
- RIR whois
- ...

Detection of NAT64 prefix

- By asking of SRV record for each local domain
- `_nat64._ipv6 IN SRV 5 10 9632 nat64pool.example.com.`
- Then AAAA MUST point to NAT64 IPv6 prefix
- A MAY point to IPv4 prefix used for NAT64
- „Port“ MAY be used to indicate prefix length

Detection of DNS64

- By asking of SRV record for each local domain
- `_dns64._<proto> IN SRV 5 10 <port>`
`dns64.example.com.`
- Optional vs. Required? MUST/SHOULD?

Inputs from WG

- Name of the draft
- Negative answer → SRV allows „“
- Change in configuration → TTL, CNAME
- Multiple area specific prefixes → view, subzone
- Detection of local domain after the CPE

Next step

- Input required
 - DNS64 record MUST/SHOULD be supported
 - How to resolve naming issue?
 - Or any other input, so I can prepare next version
- Then v01
- Then maybe WG item?

Discussion