DNS64 Exclusion List RA Option
draft-andrews-6man-dns64-exclude-00

Abstract

To allow automatic device configuration to a DNS64 process behind a IPv6-only link it is necessary to provide AAAA and A record exclusion lists. This document provide such a mechanism.

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1. Introduction

To allow automatic device configuration to a DNS64 process behind an IPv6-only link it is necessary to provide AAAA and A record exclusion lists. This document provides such a mechanism.

When an DNS64 implementation needs to be configured behind DNS64 server, for example when performing DNSSEC [RFC4034] validation, the AAAA exclusion list from [RFC6147] needs to be made available. When the DNS64 implementation implementation is also on a local dual-stack network the local A records also need to be excluded from DNS64 processing to prevent local traffic being sent to the NAT64.

1.1. Reserved Words

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119].

2. DNS64-EXCLUDE Option

The DNS64-EXCLUDE option (TBA) contains a DNS wire encoded name [RFC1034] which points at 1 or 2 APL records [RFC3123] where the records contain IPv4 and IPv6 exclusions lists which are encoded on a first match basis. If there are multiple records prefixes for a address family MUST NOT be split across multiple records as DNS records are not ordered.

The IPv6 prefixes are used to populate the AAAA exclusion list from [RFC6147] Section 5.1.4.

The IPv4 prefixes are used to exclude A records from translation to DNS64 mapped AAAA records.
3. Examples

dns64.example.com. IN APL !1:10.0.0/24 1:10/8 2:64:ff9b::/32

Single Record

dns64.example.com. IN APL !1:10.0.0/24 1:10/8
dns64.example.com. IN APL 2:64:ff9b::/32

Multiple Records

Exclude 10.0.0.0/8 except for 10.0.0.0/24 from DNS64 processing.

Exclude the well known DNS64 prefix 64:ff9b::/32 from DNS64 processing.

4. IANA Considerations

The IANA is requested to assign a new IPv6 Neighbor Discovery Option type for the DNS64-EXCLUDE option defined in this document.

<table>
<thead>
<tr>
<th>Option Name</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNS64-EXCLUDE option</td>
<td>(TBD)</td>
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</tbody>
</table>

The IANA registry for these options is:

https://www.iana.org/assignments/icmpv6-parameters [1]

5. Security Considerations

TBA
6. References

6.1. Normative References


6.2. Informative References


6.3. URIs

[1] https://www.iana.org/assignments/icmpv6-parameters

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