Dual Stack Hosts with DNS64
draft-cao-behave-dsdns64-00

Abstract

   If a dual stack host is configured with a DNS64 server, the packet
   will be routed through the NAT64 translator instead of the plain IPv4
   router or NAT44. This document suggest the DNS64 should handle type
   A DNS request normally to avoid packets being detoured to NAT64.

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[1](#). **Introduction**

   If a dual stack host is configured with a DNS64 server [DNS64], the
   packet will be routed through the NAT64 translator instead of the
   plain IPv4 router or NAT44. This document suggest the DNS64 should
   handle type A DNS request properly to avoid packets being detoured to
   NAT64.

   Draft [DNS64-Config] introduces serveral solutions to this problem.
   Specifically, the host destination address selection policy table is
   modified in order to give the synthesis AAAA record from the DNS64 a
   lower precedence than native IPv4 address. So the destination
   address selection algorithm will prefer the IPv4 address and
   communication will be IPv4 oriented.

   The problem is that DNS64 is only specific for AAAA request, and does
   not specify whether and how to handle A query. So in the above
   solution, DNS64 will return presumably only AAAA record. Even if the
   host policy table is modified, host won't be able to select the IPv4
   address.

2. **Workaround**

   A simple workaround way to this problem is introduced in this
   section. We suggest the DNS64 should handle A request normally. So
   dual stack host will be able to receive both A and AAAA response from
   DNS64, and then destination address selection policy will take effect
   and host will select IPv4 address for communication.


```
         +-----------+           A & AAAA Query          +----------+
         | Dualstack |--------------------------------> | DNS64    |
         |  Host     |<------------------------------- |          |
         +-----------+           A & AAAA Response       +----------+
```
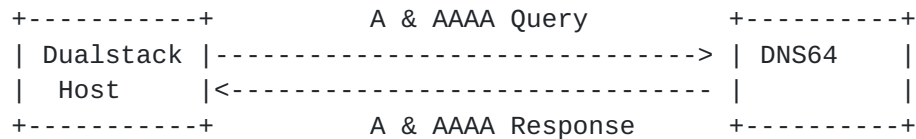

                   Figure 1: Dual stack host will DNS64

3. Security Considerations

TBD.

4. IANA Considerations

This document does not require any IANA actions.

5. Normative References

[DNS64]   Bagnulo, M., "DNS64: DNS extensions for Network Address
             Translation from IPv6 Clients to IPv4 Servers",
             December 2009, <draft-ietf-behave-dns64-05.txt (work in
             progress)>.

[DNS64-Config]
             Wing, D., "DNS64 Resolvers and Dual-Stack Hosts",
             Oct 2009, <draft-wing-behave-dns64-config-01.txt (work in
             progress)>.

Authors' Addresses

    Zhen Cao
    China Mobile
    Unit2, 28 Xuanwumenxi Ave,Xuanwu District
    Beijing 100053
    China

    Email: zehn.cao@gmail.com

    Hui Deng
    China Mobile
    Unit2, 28 Xuanwumenxi Ave,Xuanwu District
    Beijing 100053
    China

    Email: denghui@chinamobile.com