IPv4 and IPv6 Glue

Introduction

The SRS accepts authoritative name server delegation details for domains and these details are published in the authoritative name servers for the .nz zones. Registrars are allowed to specify up to 10 name servers. Each name server must contain information for a fully qualified domain name field (FQDN). There is no requirement that any name servers are within the domain for which they are authoritative.

Registrars may also provide details of the IP addresses (IPv4 and/or IPv6) for the name servers, known as "Glue Records". The "Glue Records" are only required if the name server is "self-serving". I.e. Glue records are needed when the authoritative name server for a domain is within the domain itself. Refer to the validation rules below.

If registrars provide IPv6 addresses we recommend that they ensure that domains are still accessible via IPv4 name servers as well.

IPv4 Glue

The DNS and the SRS systems will ignore all IPv4 addresses that are not required (if a name server is not "self-serving"). The following are the SRS rules for IPv4:

1 The IP4Addr will only be stored in the SRS if the IP address is required (the name server is "self-serving").

2 If an IP4Addr, supplied as part of an update transaction request, is not required (is not "self-serving") then the IP4Addr will be ignored and not stored in the SRS.

The following scenarios show what will occur if an update (or create) transaction for a domain contains name server changes.

1. The domain update would be accepted if the name servers in the updated request were for the same name as the domain and IPv4 addresses were included.
NOTE - The SRS would store the IPv4 addresses.

2. The domain update would be rejected if the name servers in the updated request were for the same name as the domain and NO IPv4 addresses were included.

3. The domain update would be accepted if the name servers in the updated request were for a DIFFERENT name to the domain and IPv4 addresses were included.
NOTE - The SRS would IGNOR the IPv4 addresses and not store them.

4. The domain update would be accepted if the name servers in the updated request were for a DIFFERENT name to the domain and NO IPv4 addresses were included.

IPv6 Glue

The DNS and the SRS systems will ignore all IPv6 addresses that are not required (if a name server is not "self-serving"). The following are the SRS rules for IPv6:

1. The IP6Addr is not a required field. The IP6Addr will only be stored in the SRS if IP addresses are required (the name server is "self-serving"). If IP addresses are required, there must be an IPv4 address provided, not just an IPv6 address.

2. The IP6Addr field will be validated against the RFC 2460 and RFC2373 (section 2.2) specifications. The IP6Addr may be in any of the formats specified by RFC 2373, ie.
    1. X:X:X:X:X:X:X:X (Fully Specified)
    2. X:X:X::X ('::' denotes compressed zeroes)
    3. X:X:X:X:X:X:d.d.d.d ('d.d.d.d' denotes an IP4 Address)

3. AAAA (and not A6) records will be published in the zone files.

References

[RFC-2373] Hinden, R. and S. Deering, "IP Version 6 Addressing Architecture", RFC 2373, July 1998.

[IPv6] Deering, S. and R. Hinden, "Internet Protocol Version 6 (IPv6) Specification", RFC 2460, December 1998.