

IPv4 and IPv6 Glue

Introduction

Currently the SRS accepts nameserver details for domains by allowing registrars to specify a number of nameservers. Each nameserver must contain information for a fully qualified domain name field (FQDN), and may also provide details of an IPv4 field (IP4Addr address Glue Record). The IP4Addr is always acceptable, and is only required if the nameserver is “self-serving”. I.e. IP4Addr Glue records are needed when the authoritative nameserver for a zone is within the zone itself.

Summary of Proposed Changes

- 1 Registrars will be able to provide IPv6 Glue records to the SRS, and this information will be included in the zone files output from the SRS. Note. AAAA (and not A6) records will be published in the zone files.
- 2 **The SRS IPv4 storage rules will change – The SRS will ignore an IP4Addr record if the nameserver is NOT “self-serving”.**
- 3 All domain level XML requests/responses from the SRS that currently contain the IP4Addr field could also contain the IP6Addr field.
- 4 The “protocol.dtd” will change. It is recommended that Registrars upgrade their “protocol.dtd”.
- 5 For the IPv6 glue records change, Registrars may not be required to make any changes, apart from updating to the new protocol.dtd, if they do not wish to provide IPv6 glue records.

Proposed Time Table

02/07/2004	- Draft DTD available
19/07/04 to 27/08/04	- Changes available to Registrars in RPS test system
29/08/2004	- Changes released to SRS Production

IPv4 Glue

The DNS system is currently ignoring all IP4 addresses that are not required (if a nameserver is not “self-serving”). NZRS are proposing that the SRS ignores all IP4 addresses that are not required (if a nameserver is not “self-serving”). The following change will be made to the existing SRS rules for IPv4:

- 1 The IP4Addr will only be stored in the SRS if the IP address is required (the nameserver is “self-serving”).
- 2 If an IP4Addr is supplied as part of an update transaction request and it 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 nameserver changes.

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

IPv6 Glue

NZRS are proposing to add support of IPv6 glue records to the SRS and DNS. The adoption of IPv6 Glue will bring benefits to the registry in that it will allow for registrants who wish to start investing in IPv6 technology.

1. In order to allow for IPv6 Glue records, the SRS will accept an additional field (IP6Addr) in the definition of a nameserver. It is not a required field. This field may only be supplied if IP addresses are required (the nameserver is “self-serving”). NOTE. 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 [RFC237](#) (section 2.2) specifications.
3. AAAA (and not A6) records will be published in the zone files.

SRS Protocol Changes

Where a nameserver record is used in a SRS request transaction or output in a SRS response transaction, the IP6Addr field will be optionally allowed. The following components in the SRS will be affected by this change:

- The DomainUpdate transaction
- The DomainDetailsQuery transaction
- The Whois transaction
- The Whois daemon
- The GetMessages transaction
- The ActionDetailsQuery transaction
- The DomainCreate transaction
- The BuildDnsZoneFiles transaction

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.