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SAC019: SSAC Response to *Comment Sought on DNS Root Zone Glue Policy*

SSAC welcomes the opportunity to assist IANA as it reviews practices associated with maintaining IP address information in the root zone, commonly known as “glue”.

SSAC offers the following principles to guide IANA's glue policy.

1. Whenever a TLD operator adds a name server, the root zone should be changed to include a name server (NS) record for that name server. Whenever a TLD operator ceases to host its TLD zone on that name server, the NS should be removed from the root zone.
2. Address records (A or AAAA) for name servers that host TLD zones must be included in cases where they are required for correct operation. IANA is free to employ a minimum or maximum glue strategy, so long as the address records always reflect the current, correct address(es) of the name servers hosting TLD zones. When TLD name server addresses change, the change should be reflected promptly and accurately in the root zone.
3. If a name server has been used by multiple TLDs to host zones and is no longer used by any TLD operator, IANA should remove all resource records (NS, A and AAAA) associated with that name server from the root zone.
4. Name server operators provide network and system administration for TLD operators and assign addresses to name servers as part of this service. Whenever a name server operator changes the address of a name server, the root zone should be changed to reflect the new address. TLD operators should provide advisory information to IANA and then IANA should verify address information directly, preferably in an automated fashion.

Some name servers provide service to multiple TLDs. IANA should seek to inform all of the TLD operators about an impending change of address for a name server, but it need not require approval from any of them.

In some cases, two TLD operators may host zone files at the same name server, and they may assign different host names to the same host (and hence same IP address). In such cases, the root zone contains multiple NS and glue records as illustrated in the following example.

se.	IN	NS	a.ns.se.
fr.	IN	NS	a.ns.fr.
a.ns.se.	IN	A	1.2.3.4
a.ns.fr.	IN	A	1.2.3.4

In situations where an IP address change is requested by one TLD operator (e.g., where the IP address of a.ns.se. changes), IANA should verify whether the requested action is a "split" operation (only the name service for SE is to be affected by the change) or "move" operation (both SE and FR are affected by the change, i.e., the IP address of the name server that hosts both zones is changing). IANA should add addresses quickly but take care in deleting addresses. TLD operators and name server operators occasionally mistakenly delete NS, A or AAAA records for operational name servers. IANA should verify that deletions are intentional to avoid compounding the effects of a mistake.

IANA should be careful to make the procedures timely enough for operational purposes. If third parties need to be consulted anywhere, proper timeouts must be part of the procedure. In case conflicting requests from a TLD administrator and a name server operator cannot be resolved, the wish of the TLD administrator shall be executed.

IANA should consider some method of providing notices of pending NS and glue record changes to (all) TLD, name server, and root name server operators. These parties are invested in maintaining correct name service and are in the best position to provide an additional and early error detection.

5. To the maximum extent possible, IANA should automate the process of maintaining the glue records. The automated process should be completely visible to the community.