

## **11 February 2015 - Statement of Work and Scope for RSSAC 003**

### **Work Assignment:**

The RSSAC requests Duane Wessels to lead the Root Zone TTL work party<sup>1</sup> to produce RSSAC003 – RSSAC Advisory on Root zone TTLs, with adherence to RSSAC caucus procedures.

### **Scope:**

Verisign, as the Root Zone Maintainer, requests the RSSAC Caucus to consider the extent to which: (1) the current root zone TTLs are appropriate for today's environment, (2) lowering the NS RRset TTL makes sense, and (3) the impacts that TTL changes would have on the wider DNS.

### **Deliverable:**

The *final draft* of the "RSSAC Advisory on Root zone TTLs" document, numbered Draft-RSSAC-003.

### **Date of Delivery:**

Final draft submitted to the RSSAC no later than **June 1<sup>st</sup>, 2015**.  
Submission prior to the deadline is welcome.

### **Guidelines:**

The RSSAC requests Duane Wessels to report progress on this work to RSSAC as appropriate. In the event that the deadline will not be realized, Duane Wessels should inform RSSAC immediately and provide details of the work that cannot be completed by the deadline.

RSSAC support staff will assist the working party deliberation of the work, including setting up mailing list for the work party, arranging and supporting regularly teleconference calls, taking notes of meetings, drafting background materials of the work, if needed.

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<sup>1</sup> As of 1/30/2015, the volunteers for this work party are Warren Kumari, Jaap Akkerhuis, Shumon Huque, Brian Dickson, John Bond, Joe Abley, Alejandro Acosta

**Background:**

TTLs of records in the root zone have remain unchanged for as far back in time as we know from available root zone archives (i.e., at least 1999). This predates both a signed root zone and the use of anycast on root name servers. Until very recently, there has been little reason to consider changes to root zone TTLs.

Records in the root zone presently have three TTL values: 24 hours, 48 hours, and 6 days. Most authoritative data in the zone is given a 24 hour TTL. This includes SOA, DS, NSEC, and their associated RRSIGs.

The TLD delegation records (NS and glue), as well as DNSKEY records, are given a 48 hour TTL. Since the NS+glue are not authoritative, the only RRSIG records with a 48 hour TTL are the DNSKEY signatures.

The only remaining records in the zone are the NS+glue (and RRSIG) for the root zone itself. These are given a 6 day TTL.

Until just recently, all RRSIG records in the root zone were given a signature validity period of 7 days. This meant that a root server instance that was not updated within 24 hours could return NS RRset responses whose TTL exceeded the signature validity. This is not a problem for validating or non-validating resolvers alone, but could cause problems when a validator is behind (i.e., forwarding to) a non-validator. The signature validity period was increased to 10 days to alleviate this problem.

Lowering of the NS RRset TTL is another way to alleviate the problem. If the NS RRset TTL were lowered, it would be reasonable to again reduce signature validity values to previous levels.