

Operational Statement on the final step in the KSK Rollover

As of 2019-03-28

Introduction

On 22nd of March the revoked KSK-2010 key was removed from the root zone. This was the last step of the Root Zone Key Signing Key (KSK) rollover. Prior to this event there were a number of discussions in industry forums related to the observed increase in DNSKEY Queries.

Statement

Since the 11th of January (2019-01-11), when the revoked KSK-2010 key was first published, the root server operators observed a number of increases in DNSKEY queries, resulting in between two and four orders of magnitude (depending on individual root servers) of growth for that query type. Note that this increase was only a fraction of the total query load and did not impact the operation of any root servers.

At the time It was unclear if this query volume was to become the new baseline for DNSKEY queries to the root servers.

Once the revoked KSK-2010 key was removed from the root zone (on 2019-03-22), DNSKEY queries seen by the root servers have been significantly decreasing, trending towards pre-revocation levels.

We now suspect that the increase in DNSKEY queries was caused by unexpected DNS protocol behaviours. We hope that DNS validating recursive software vendors and the DNS research community will further investigate this event to understand the increase in these queries.