

.nz Chain Validation Incident Terms of Reference

1. Background

Over the period 29 and 30 May 2023, during a standard procedure to rollover of DNSSEC records, the old keys were prematurely removed causing failures in the DNS resolution of signed internet domains. This incident (“The Incident”) had affected some New Zealand Internet users and businesses. The InternetNZ Council seeks an independent review of the Incident, the outcomes of which will be made available to the community.

2. Purpose

The purpose of the review is to examine the events leading up to the Incident, the response to the Incident, and to make recommendations for improvement to prevent similar failures in future. The review will consider the technical, and non-technical (e.g. business process, human) factors that led to the Incident. The report and recommendations, which will be made public, are intended to reassure the community that InternetNZ manages the NZ DNS competently, and that any problems have been identified and fixed.

3. Scope

In answering the questions outlined below, the review will cover the following areas and any others that may be included with the agreement of Council:

- the setup and operation of DNSSEC signing systems, past and present
- DNSSEC signing interface with registry processes and procedures, past and present
- the work surrounding the rollover of DNSSEC records in the registry change project
- culture and staffing

The reviewer will be given access to all relevant CIRA and InternetNZ records (email, documentation, contracts, etc) and personnel as needed to carry out this review.

The review should answer the following questions:

1. What events/decisions/actions occurred that lead up to the detection of the Incident?
2. How did they contribute to either the likelihood or impact of the incident to come?
3. What events/decisions/actions occurred from the time the Incident was discovered until the time it was deemed to be over?
4. How did each of these contribute to the impact of the incident as it occurred?
5. What work needs to occur to ensure that the likelihood and/or impact of any future event is within the risk appetite of all stakeholders.

4. Methodology

The review will be undertaken through a mixture of interviews with InternetNZ and CIRA staff and review of InternetNZ and CIRA records and any other relevant literature. The reviewers may also seek feedback from multi-stakeholder parties effected by the Incident such as: Government (MBIE, NCSC, DIA), Private Sector (Internet Service Providers, Content Providers, Banks), Civil Society, Academia. The review should ensure that feedback does not focus on one sector to the exclusion of others.

5. Timeline

The review is to be completed in a timely manner with its size kept in proportion to the nature of the Incident. The review report should be focused and concise and received no later than 31 August 2023.

6. Roles and responsibilities

The INZ Council will be the owner of this Terms of Reference, and it, and the CEO, will be the recipients of this report.

7. Conflicts of Interest

If the reviewer identifies a conflict of interest during the investigation for this report, they should notify the Chair of Council and seek advice before proceeding.

8. Reporting

The report shall include:

- An outline of the events and decisions leading up to the incident;
- A timeline of how the incident was managed and resolved;
- Documentation (where possible) of the impact this had on users of the DNS;
- Recommendations on the changes—including processes, in staffing levels, or other matters the reviewer believes could usefully be addressed—to ensure this does not happen again.

While the report is commissioned by the InternetNZ Council, the report should be written for a general public audience, as it will be released publicly. For privacy reasons the report should not identify individuals.

9. Confidentiality and Legal Considerations

The reviewer will have access to confidential information during the course of the review. The reviewer will return or delete (as applicable) this information once the review has been concluded, and the final report delivered.

Appendix One: Reviewer Requirements

InternetNZ seeks a well-respected DNS expert and an expert in Human Factors to conduct this review. The review will have the full support of InternetNZ and CIRA.

Expertise

- # Knowledge and experience of .nz, for example, experienced INZ members or Fellows
- # Based in NZ.
- # DNS specialist
- # DNSSEC - expertise in practical operation of DNSSEC.
- # Knowledge of the operation of registry systems such as those operated by .nz is desirable

Skills

- # Independent thinker able to reach own conclusions and exercise sound judgement
- # Strong, clear communication skills, both oral and written
- # Demonstrated skills to gather, weigh and summarise evidence, assess technical standards and relevant best practice and make clear findings and recommendations
- # Previous experience investigating technical incidents
- # Able to write about technical issues in an accessible manner for non-technical audiences