Improving RPKI Repository Efficiency and Practices

IETF123 Madrid Hackathon

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RRDP and our motivations

RRDP is an HTTP-based protocol that delivers RPKI updates via deltas and snapshots for efficient client synchronization.

Questions from operational aspects:

- What is driving the increased traffic per clients?
- How often cleaning up deltas?

Hack hack hack! --- expected results:

RRDP log analysis

- The best number of snapshots/deltas with conditions and reasons.

Measurements in the wild

- Numbers of snapshots/deltas on various repositories

Analysis analysis analysis!

- Can we change frequency of producing deltas?
- Can we change how many deltas are kept?
- How long do clients have to make use of deltas?
- What is the ratio of snapshot, notification, delta file downloaded for clients on avg?
- How often are snapshots downloaded?
- How often are clients resyncing by using deltas?

  vs downloading entire snapshots?
- Can notification file cause increase bandwidth?

Is it client behavior rather than delta count that affects the traffic growth factor?

Hackathon results

- **From log analysis:** Largest cause of the traffic was relying parties downloading snapshots when they didn't need to.
  - 30% - 50% of traffic caused by unnecessary snapshot queries
- **From simulations with log analysis**: The most cost-effective approach occurs when the cumulative delta capacity exceeds the snapshot capacity. 2 hours when session_id modification.
- **From implementations**: RRDP url collector to automatically collect public RRDP urls from trust anchor listings.

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