

DNS Child Updates in the gTLD Space



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What Are DNS Child Updates

- Child Updates is not (yet) an industry term
- By “Child Updates” we mean the practice of using CDS, CDNSKEY, or CSYNC DNS records in the child zone to “request” changes in the parent zone
- The “C” in CDS, CDNSKEY, and CSYNC means “Child” since the records are placed in the child zone, e.g., second-level domain zone
- CDS & CDNSKEY signal updates to DNSSEC DS and DNSKEY records, respectively
- CSYNC signals updates to nameserver (NS) records

How Child Updates Work

- Registrant, or their DNS provider(s), place CDS, CDNSKEY, or CSYNC records in their DNS zone (e.g., under example.com)
- This is a “request” to make a change in the parent zone, in this example, the .com TLD
- For this to work, registries (or registrars) have to periodically scan their child (or registrant’s) zones, e.g. .com scans example1.com, example2.com, etc.
- Upon discovery of CDS, CDNSKEY, or CSYNC records, appropriate changes are made in the parent zone
- This allows the registrant/DNS provider to securely (thanks to DNSSEC) request updates in the parent zone

Challenges Going Forward

- Lack of requirement regarding consistency on child records in the nameservers – draft-thomassen-dnsop-cds-consistency
- Are registries or registrars to scan child zones?
- If both are scanning, how to avoid or resolve conflicts?
- Should sponsoring registrars and/or resellers be made aware that a registry support Child Updates?
- Should sponsoring registrars and/or resellers be notified of changes made as a result of scanning?
- When problems arise, how would the registrant and/or DNS provider be informed?
- What takes precedence, EPP locks or Child Updates?
- How does a child know whether to use CDS or CDNSKEY?
- How to enable DNSSEC?

How Does a gTLD Implement Child Updates

Besides the actual implementation of the technology and operational processes ...

- In general, gTLD registries can add, modify, or remove an existing registry service following the Registry Services Evaluation Policy (RSEP)
- Registries are encouraged to seek an informal consultation with ICANN Org before submitting an RSEP request
- Participating in community efforts to address the challenges with Child Updates (e.g., participate in IETF REGEXT WG)

Final Thoughts

- Child Updates enable secure, automated maintenance of DNSSEC and nameserver (NS) records
- There remain a few issues that would be great to address in Child Updates in either the protocol or by other means
- gTLD registries interested in implementing Child Updates, please contact ICANN org via <https://icann.org/en/help>

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