

Best Practices for Deletion in EPP

Risks Derived from EPP Name Management



ROW 13 | Registration Operations Workshop 2024

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REGEXT Working Group

Internet-Draft

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14 May 2024

Best Practices for Deletion of Domain and Host Objects in the Extensible
Provisioning Protocol (EPP)

draft-ietf-regext-epp-delete-bcp-03

Nameserver Change Whodunnit?

White County, Georgia Official Domain: *whitecounty.net*

whitecounty.net

Parent Zone

ns1.hemc.net

ns2.internetemc.com

Child Zone

ns1.hemc.net

ns2.internetemc.com

Nameserver Change Whodunnit?

White County, Georgia Official Domain: *whitecounty.net*

whitecounty.net



Nameserver Change Whodunnit?

White County, Georgia Official Domain: *whitecounty.net*

whitecounty.net



Half a million domains exposed over 10 years. Large numbers indicated systemic issue.

Changes to DNS Configuration: Behind the Scenes

How do updates to DNS Configuration propagate?



EPP Example

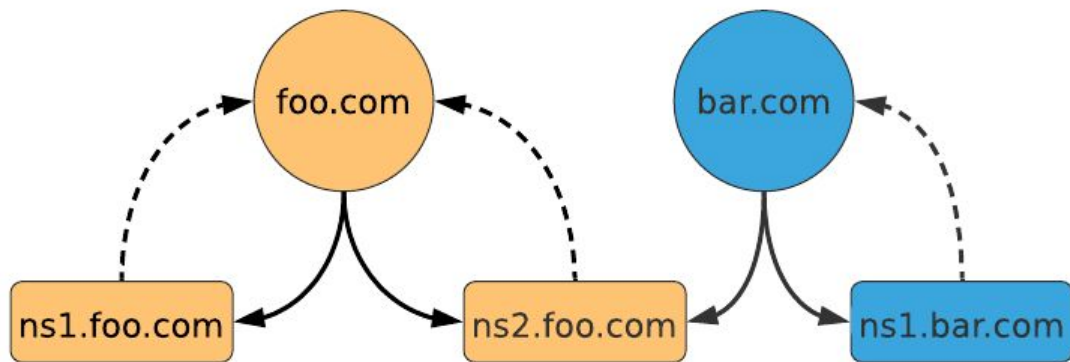


Registrar A



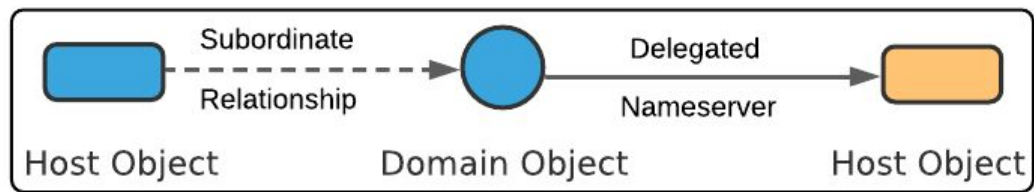
Registrar B

EPP Example State

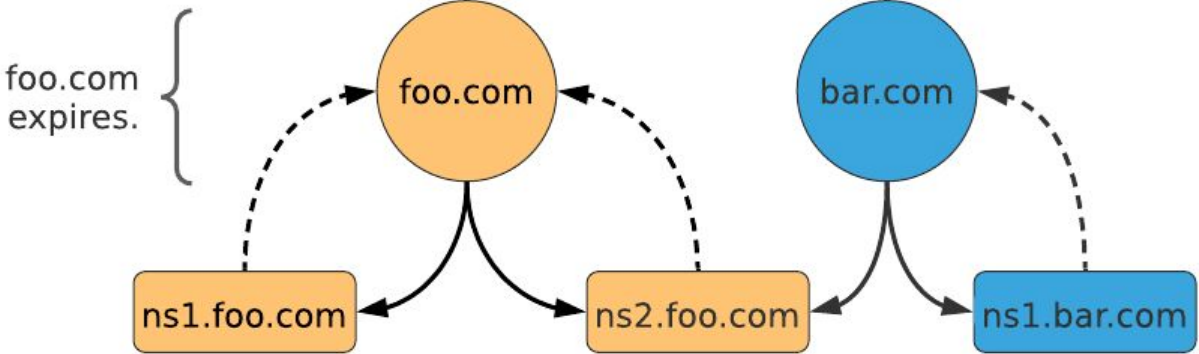


 Registrar A

 Registrar B



Domain Expires...



Registrar A



Registrar B



Subordinate

Relationship

Host Object



Delegated

Nameserver

Domain Object

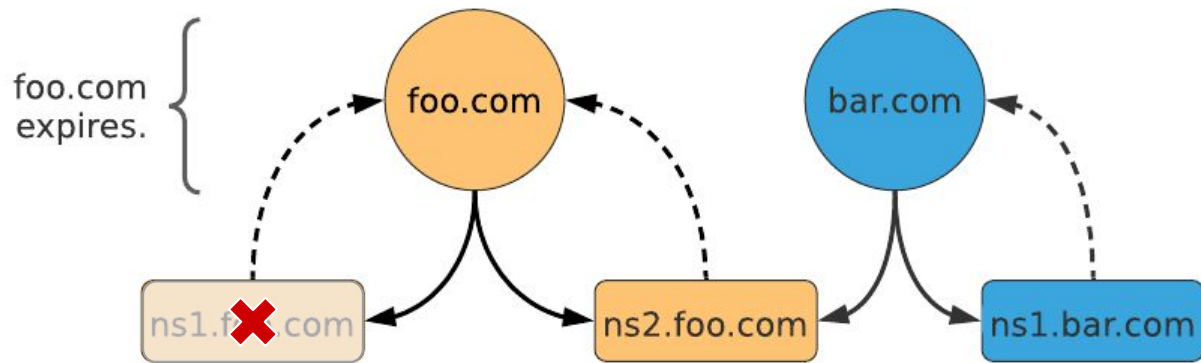


Host Object

Guidance on Deletion [RFC 5731]

"A domain object SHOULD NOT be deleted if subordinate host objects are associated with the domain object."

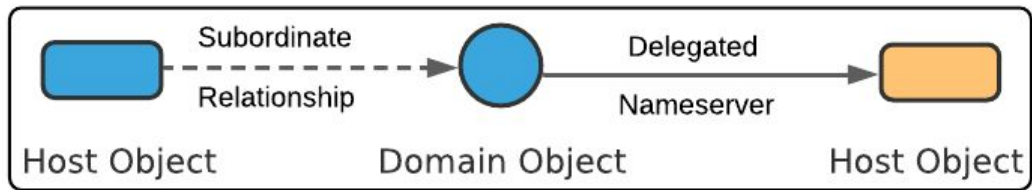
EPP Host Object Deletion



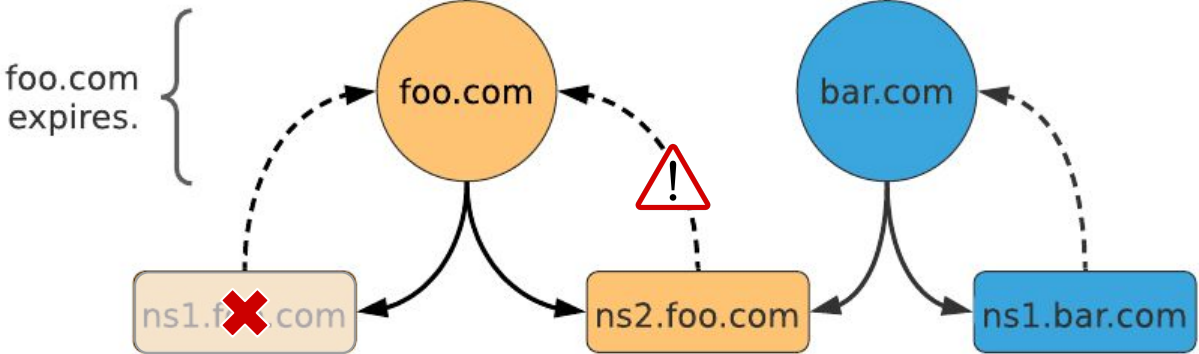
Registrar A




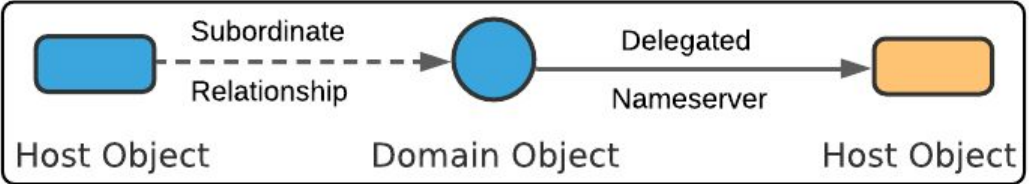
Registrar B



EPP Host Object Deletion Problem



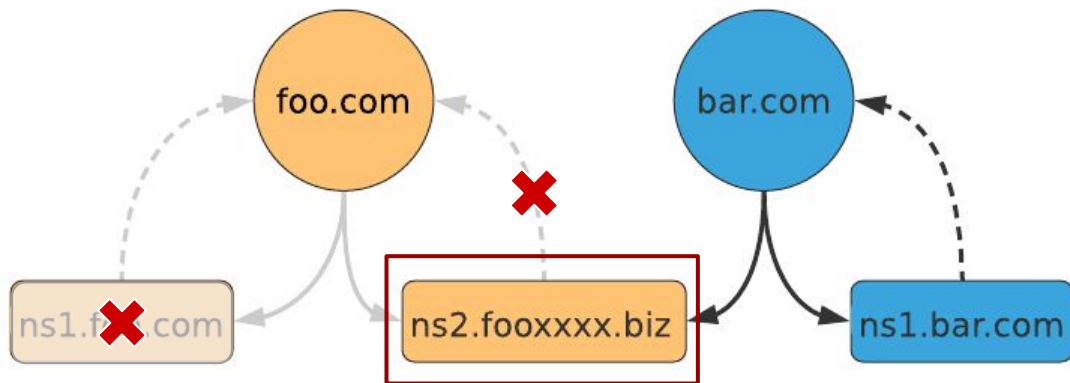
 Registrar A  Registrar B



Guidance on Deletion [RFC 5732]

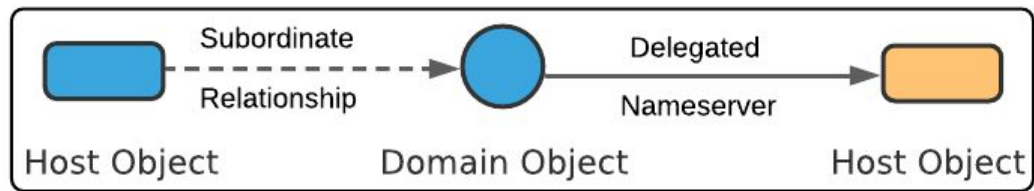
"A host name object SHOULD NOT be deleted if the host object is associated with any other object. For example, if the host object is associated with a domain object, the host object SHOULD NOT be deleted until the existing association has been broken. Deleting a host object without first breaking existing associations can cause DNS resolution failure for domain objects that refer to the deleted host object."

Renaming to “break association”

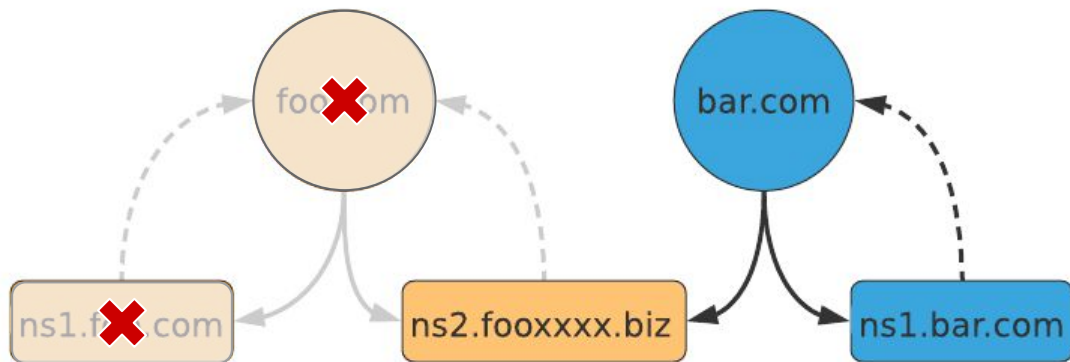


 Registrar A

 Registrar B

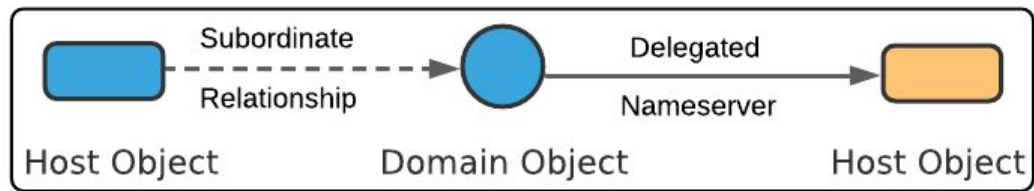


EPP Domain Object Deletion

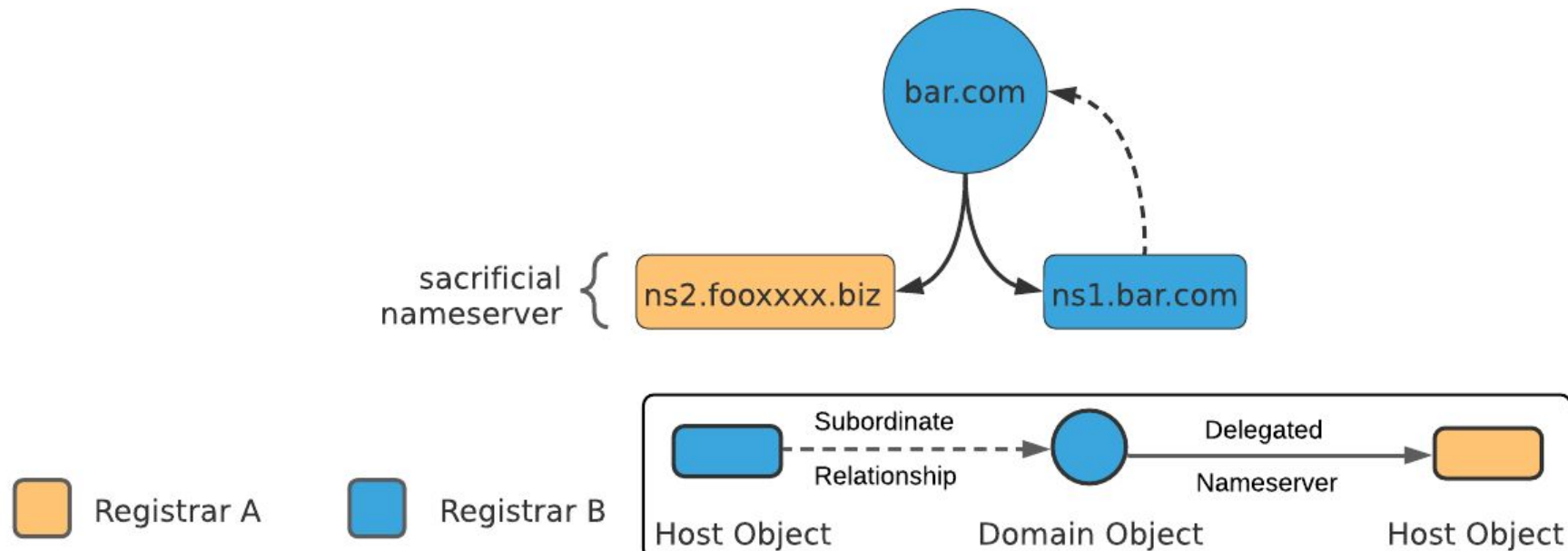


 Registrar A

 Registrar B

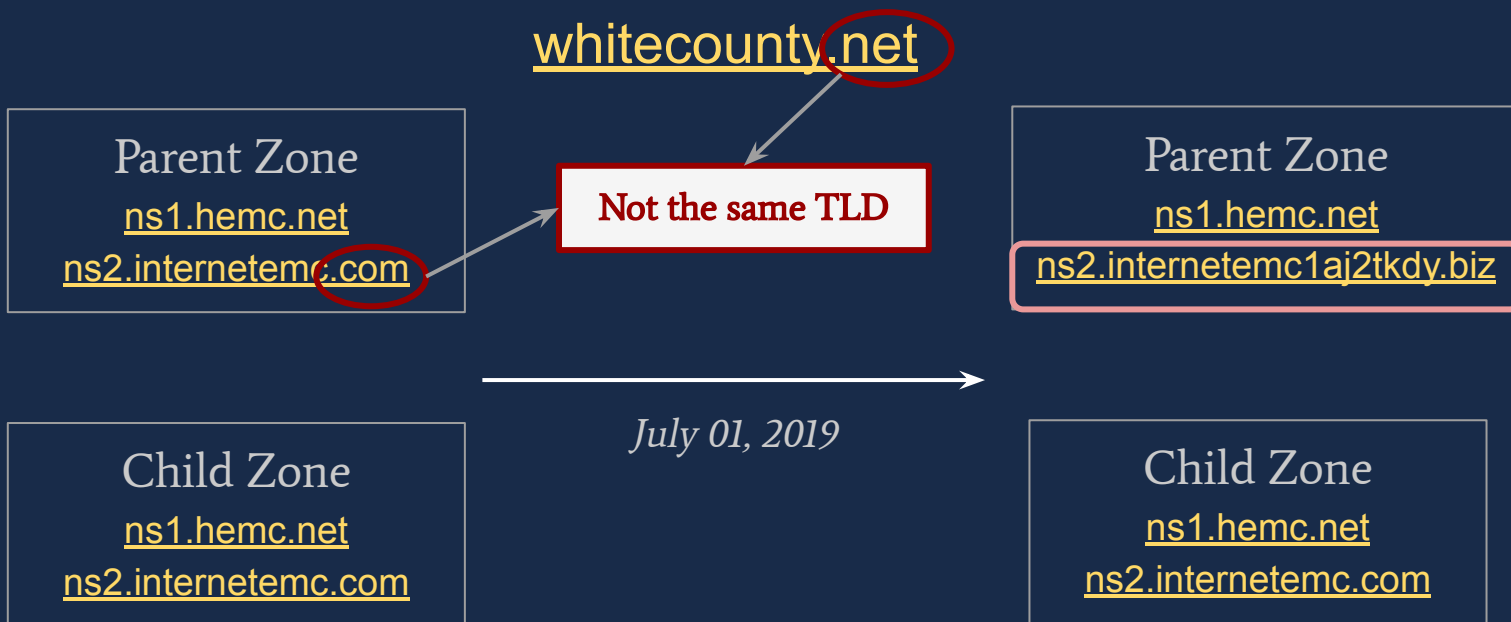


Sacrificial Nameserver

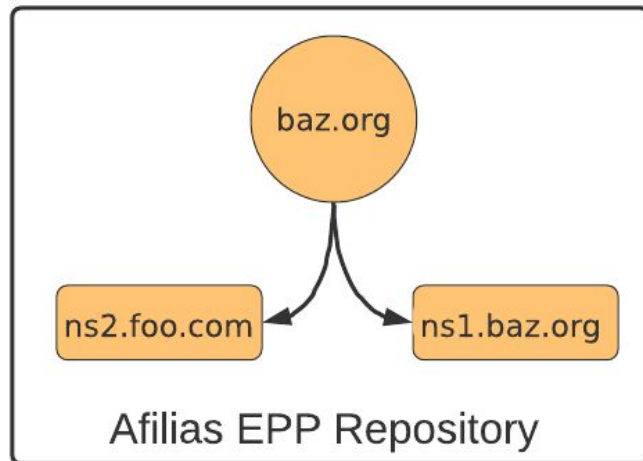
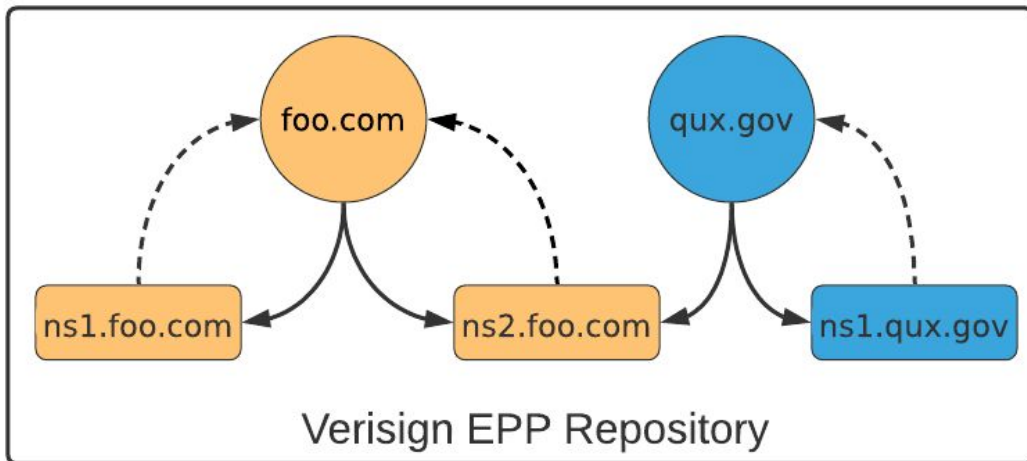


Effect on other TLDs

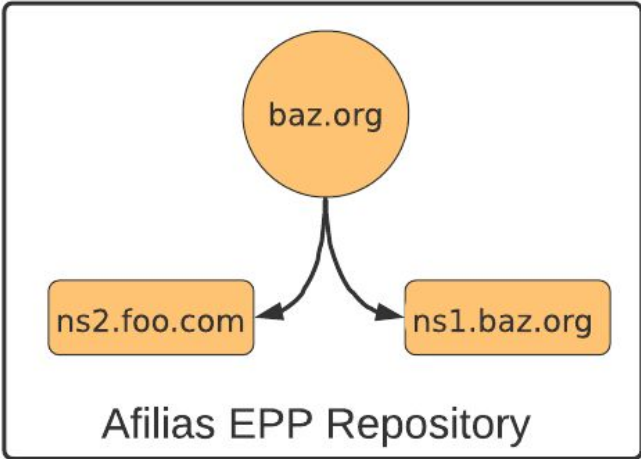
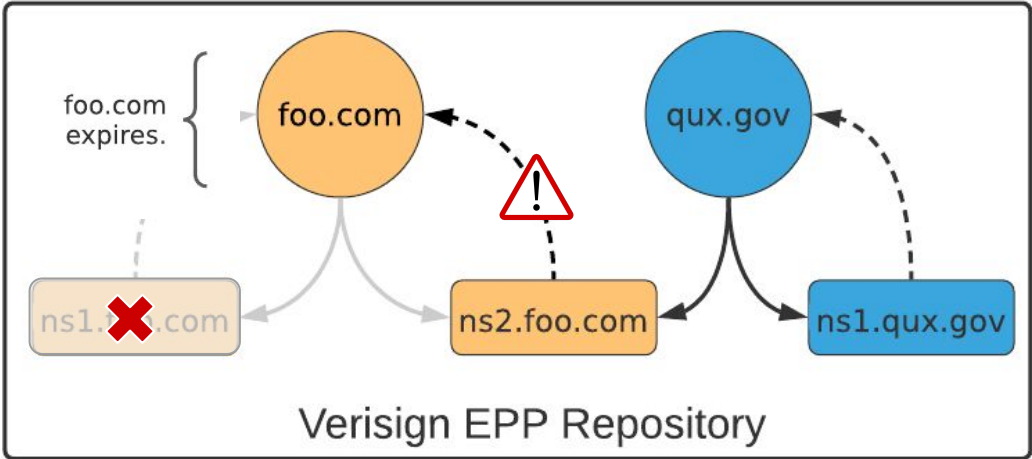
White County, Georgia Official Domain: *whitecounty.net*



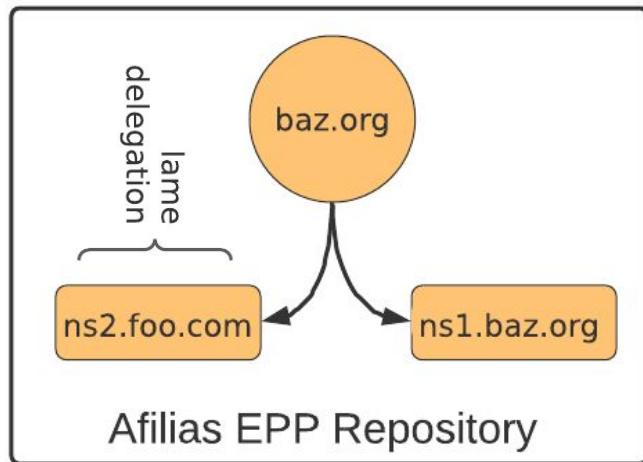
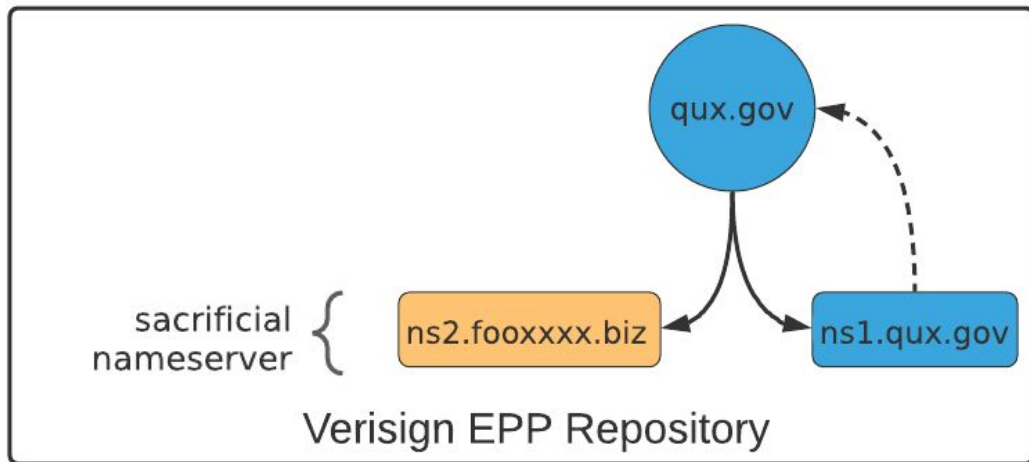
Effect on other TLDs



Effect on other TLDs



Sacrificial Nameservers vs Lame Delegation



Practices for Deletion

Renaming	Allow Deletion

Renaming Practices

- External, Presumed Non Existent Hosts

ns1.foo.com → ns1.fooxxxx.biz

- Special Use TLDs

ns1.foo.com → ns1.fooxxxx.invalid

- Special Use Domain

ns1.foo.com → ns1.fooxxxx.sacrificial.invalid

- as112.arpa

ns1.foo.com → ns1.fooxxxx.as112.arpa

- Managed Sacrificial Nameservers

- Community Managed Sacrificial Nameservers

ns1.foo.com → ns1.fooxxxx.sacrificial.example

- Registrar Managed Sacrificial Nameservers

ns1.foo.com → ns1.fooxxxx.registrar.example

Renaming Practices

~~External, Presumed Non Existent Hosts~~

~~ns1.foo.com → ns1.fooxxxx.biz~~

- Special Use TLDs

ns1.foo.com → ns1.fooxxxx.invalid

- Special Use Domain

ns1.foo.com → ns1.fooxxxx.sacrificial.invalid

~~as112.arpa~~

~~ns1.foo.com → ns1.fooxxxx.as112.arpa~~

- Managed Sacrificial Nameservers

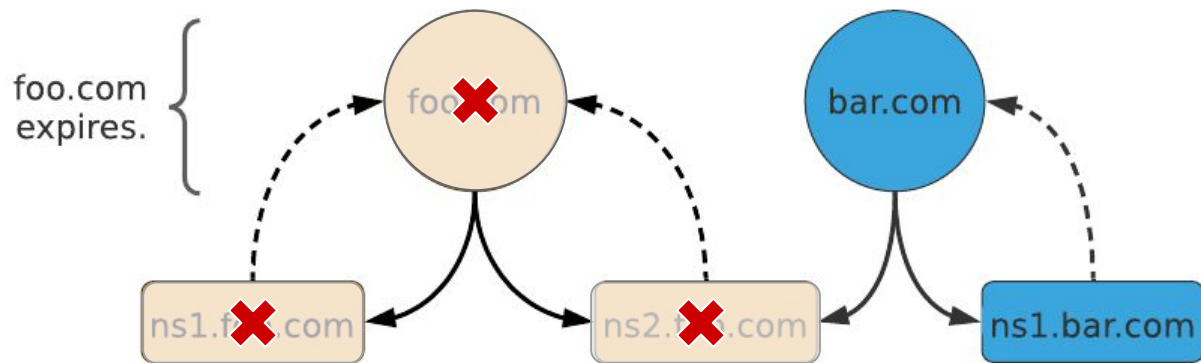
- Community Managed Sacrificial Nameservers

ns1.foo.com → ns1.fooxxxx.sacrificial.example

- Registrar Managed Sacrificial Nameservers

ns1.foo.com → ns1.fooxxxx.registrar.example

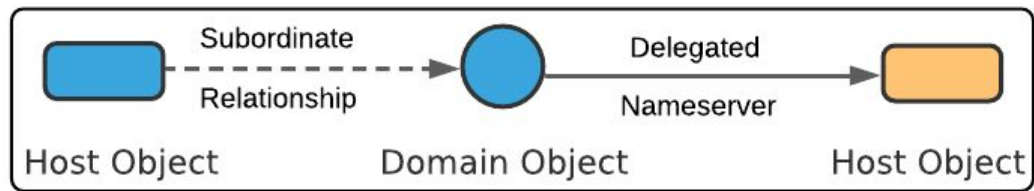
Allow Host Object Deletion



Registrar A



Registrar B



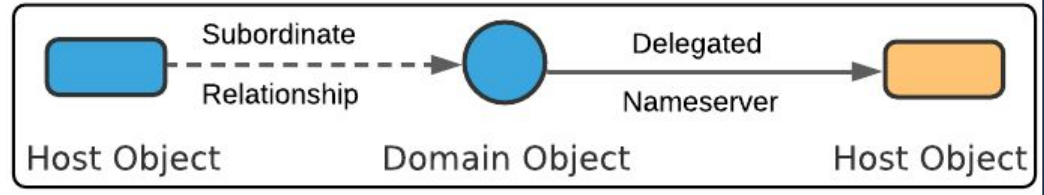
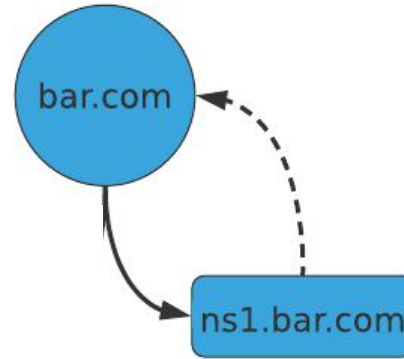
After Deletion



Registrar A

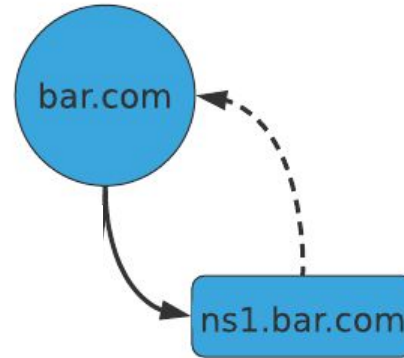


Registrar B



After Deletion

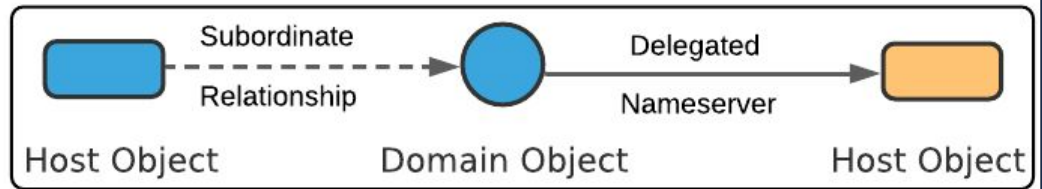
- Explicit Deletion Request
- Deletion w/ Restore Capability
- Deletion w/ Notification



Registrar A



Registrar B



Practices for Deletion – Summary

Renaming

- External, Presumed Non Existent Hosts
- Special Use TLDs
- Special Use Domains ★
- “as112.arpa”
- Non-Authoritative Hosts
- Managed Sacrificial Nameservers ★

Allow Deletion ★

- Delete Affected Host Objects
- Explicit Deletion Request
- Deletion w/ Notification
- Deletion w/ Restore Capability

★ Best Proposed Practices

★ Best Current Practices

Questions?

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