



# A Proposal for DNAME Equivalence Mapping for TLD Strings



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Where it all comes together:

# DNAME Basics

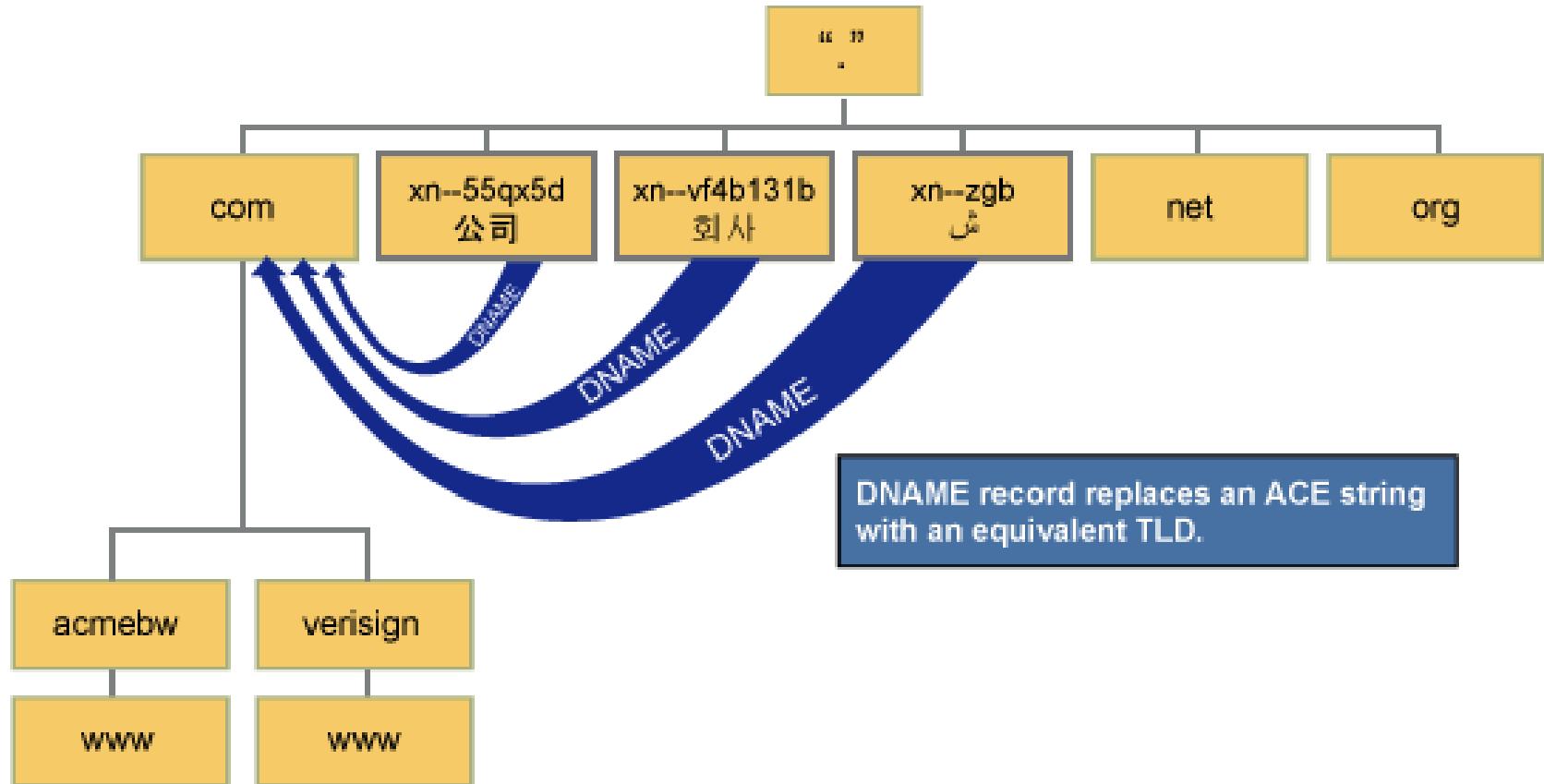
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- + DNAME defined in RFC 2672
  - August 1999
  - Standards Track protocol—not Experimental!
- + DNAME maps one **domain** to another
  - E.g., “Make *\*.sprint.com* equivalent to *\*.nextel.com*”
    - A contrived example from the Sprint/Nextel merger
- + In contrast to CNAME, which aliases one **domain name** to another
  - E.g., “Make *www.company.com* equivalent to *some-server.web-hosting-company.com*”
- + DNAME support required only in a zone’s authoritative server
  - Resolver support desirable but not required for full functionality: authoritative servers synthesize CNAMEs along with DNAME in responses

# VeriSign DNAME Proposal

- + Enable internationalized TLDs using DNAME
- + Map punycode strings representing internationalized TLD equivalents to existing TLDs using a DNAME record in the root zone
- + For example:
  - *xn--vf4b131b* is a sample equivalent of *com* in Hangul
  - The punycode representation is *xn--vf4b131b*
  - The proposed DNAME record would look like this:  
`xn--vf4b131b. in dname com.`  
...which would map all domain names ending in “*xn--vf4b131b*” to end in “*com*”.
- + Multiple DNAME records for each TLD to be internationalized—one for each internationalized equivalent—would be placed in the root zone

# VeriSign DNAME Proposal Illustrated



# Technical Issues

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- + Root name servers must run name server software capable of supporting DNAME
  - All root servers should be running DNAME-capable software (BIND 9 or NSD) within 6-12 months to support DNSSEC deployment
- + Traffic to root name servers will increase because synthesized CNAMEs are cached per name, whereas delegations are cached per TLD
  - Anycast deployment has greatly increased the query capacity of the root name servers, but any proposal resulting in an increase of traffic to the roots requires study
- + Recursive name server memory utilization could increase from caching synthesized CNAMEs
  - Synthesized CNAMEs have a TTL of zero and should therefore not be cached, so memory usage would not be an issue unless the TTL were raised in an effort to reduce traffic to the root name servers

# Policy Areas to Address

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- + Selection and approval process for DNAME entries
  - Should a registry and/or local community determine a language/script equivalent?
  - Is the equivalent based upon synonyms, transliterations or language?
  - Policy should address tld equivalent conflicts
- + Protection of intellectual property
  - DNAME may reduce IP concerns, but the early involvement of IP and business communities is essential
- + Dispute resolution
  - Should have no issues with cybersquatting
  - May need to address the use of a DNAME equivalent by entity other than the delegated registry
- + Role of governments
  - Would they want to influence the selection of DNAME equivalents?

# DNAME Benefits

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- + Ensures direct relationship between existing TLDs and local language representations
- + Potential end-user confusion is lessened
- + Defines a logical methodology for leveraging existing resources without the need to create new name space or develop new resource records
- + Unifies tld equivalents to support local language communities sharing a domain space
- + Mapping can take place at the client as outlined in other proposals