Zone Cut to Nowhere

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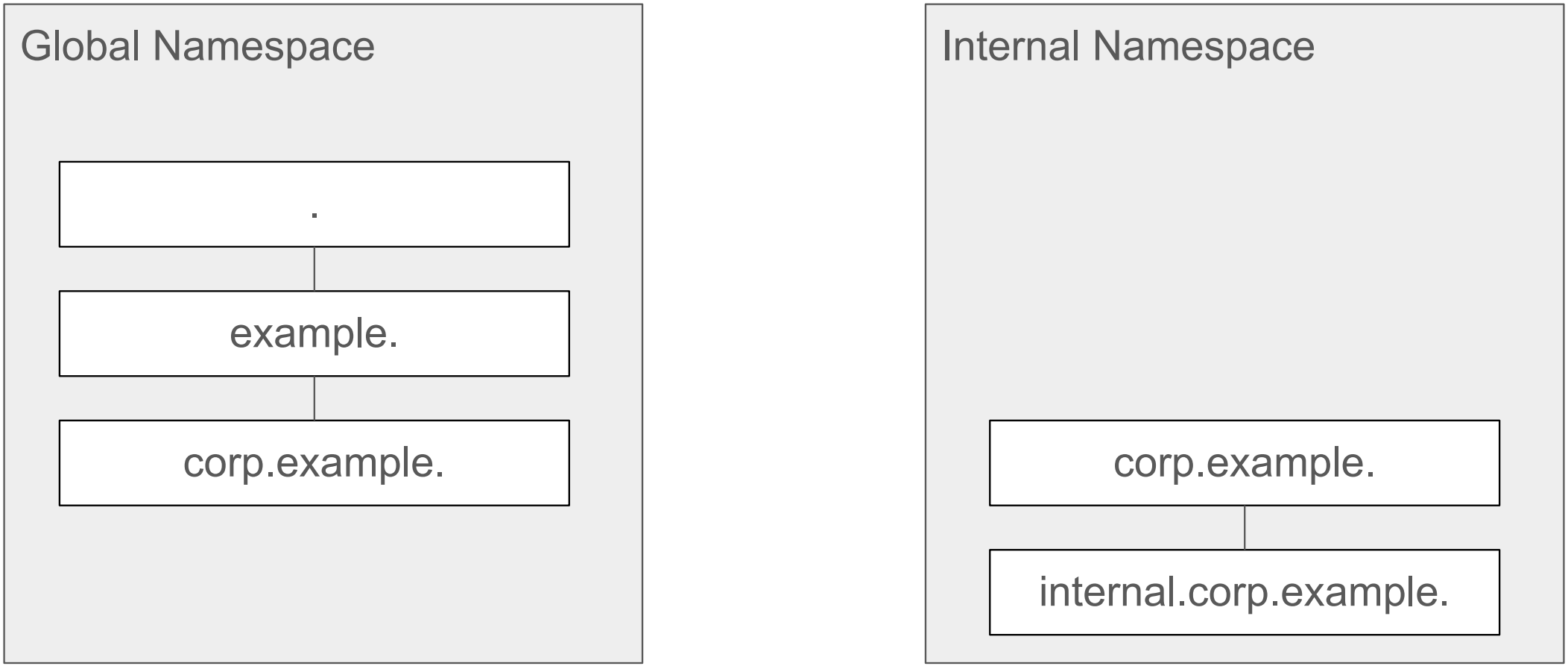
A Zone Cut Exists but it's Not For You



Ambiguity is Not Our Friend

- Without a way to signal that a zone cut exists in one namespace, different servers answer the same question in harmfully-different ways
  - name error, that name does not exist
  - name error with DNSSEC, that name really, really doesn't exist
  - the name totally does exist, here is an ANSWER section
  - the name really, totally does exist, here are some signatures you can't validate
- This is all very messy and annoying
  - e.g. INTERNAL, see much! mailing! list!
- If only we had a way to say "a zone cut exists but you can't cross it right now

Zone Cut to Nowhere

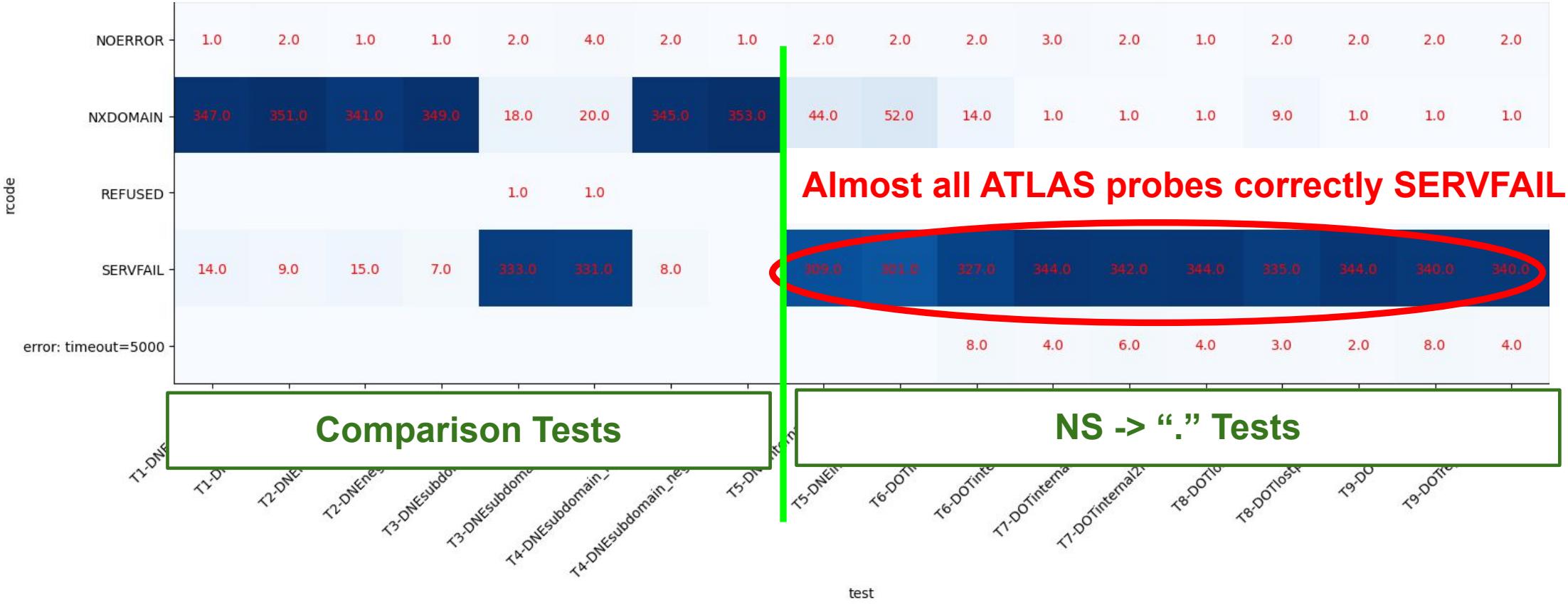
- Publish a delegation to servers that definitively cannot be reached
  - Servers that cannot be reached are a fact of life, this is not new
  - Consequences of a persistent failure like this is well-aligned with the kind of thing we are trying to say, “the name quite possibly exists but you cannot resolve it right now”
- Additional bonus!
  - We can publish a secure delegation to servers that definitively cannot be reached
  - Mobile, DNSSEC-aware, validating resolvers could validate responses from nameservers that provide an internal namespace
  - This seems potentially interesting maybe

Choice of Nameservers that Do Not Exist

- Anybody could do this today, there are no protocol changes required
- Maybe there is benefit in a common convention
  - so you can tell whether you are being told that nameservers don’t exist vs. you are being told to use nameservers that happen not to be reachable
- Names are hard
  - We could avoid a bikeshed if we just specified no name at all
  - There is some established practice here
    - RFC 2782, empty SRV target means “service not available”
    - RFC 7505, empty MX target means “does not accept mail”
    - RFC 9460, empty AliasMode SVCB target means “service not available”
  - We are suggesting that an empty NS target means “child server not available”

But! Root! Servers!

- Really early preliminary analysis from Wes look promising for acceptability



Question for the Room

What should we do with this idea?