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**Advance CAMP Thu. Sept 21, 2023**

**Room - I**

Session Title: Eduroam and time outs

CONVENER: Vlad

MAIN SCRIBE(S): MikeZ,

ADDITIONAL CONTRIBUTORS:

# of ATTENDEES: 10

**DISCUSSION:**

Vlad: Usual model of a user hitting an AP, request being routed to IdP, then back to AP with accept or reject. There can be numerous proxies between those two ends. Lack of response/reachability at IdP level will eventually generate a timeout. 20 seconds is the standard timeout. In some cases we've seen higher level proxies experiencing traffic fragmentation because it was waiting for downstream servers which also had a 20 second timeout. Generally proxies that are closer to the target IdP will have lower response times, but not always. We're proposing having servers further downstream have lower timeout thresholds.

Because the country level server is waiting on a 20s response from a local server, the regional level server can regard the country level as unresponsive when the 20s expires

Hop counts and timeout thresholds would necessitate more coordination between institutions and NROs

Margaret: Approach of lower local timeouts wouldn't address issues where servers go down.

PaulG: I've included a copy of our configs below.

Vlad: Also consider we've bumped up the timeout at the national level to 25 seconds.

Margaret: We've been doing 30 seconds in US. Consider that our use of UDP can cause issues with IdPs being mistakenly pruned/marked dead

PaulG: That was behind our tiered timeout threshold idea. It won't solve all the problems, but did solve some of them. Not sure how high the hierarchy would go, but has worked in NZ

MarkD: The US peers directly with top level/global proxies. Can be slower with .com realms if those are live in other countries.

Margaret: We've seen the problem Vlad and Paul are describing occur here, though. Even within different versions of RADIUS not sure what the impact would be WRT traffic fragmentation .

Margaret: I'm running the RADIUS version working group, have been discussing how to handle failover/timeouts more elegantly. Assumption at first was that every response from IdP would either be accept or deny. Later we added a third error state. RADIUS has a session-like concept that should be able to prevent flipping session from link to link. SOMething that might be interesting is to differentiate between traffic sent to a proxy and traffic hitting an IdP

Paul: We do a version of that now in NZ.

Mark: How do you have FreeRADIUS configured to do that?

Paul: I think it's failover and client port balance. Tries to always balance connection that will be stable between multiple paths.

Mark: I think you can use factors inherent to the request to help with routing decisions.

Margaret: Issue with client port balance is that ports can be recycled/used for other purposes.

Paul: I suspect AARNet uses failover. Most of my customers don't configure both national proxies and just aim at one or the other.

Mark: Going back to lower timeout thresholds lower down the hierarchy I can think of places all along the path where 5 seconds wouldn't be enough time.

Paul: If we (NROs) can come to a consistent set of practices for passing traffic between ourselves. Less critical/possible to push practices past that.

Mark: Could be worth coordinating on that

Margaret: Also consider that we (US and NZ) run FreeRADIUS, but many use RADIATOR. Not sure what the timeout behavior is on that platform. We'd need to consider that if we work between NROs with different RADIUS implementations, but like the idea of NRO cooperation on a standard of practices WRT timeouts

Vlad: Getting the NRO peering practices consistent would be key, otherwise we could introduce timeout issues when traversing countries

Margaret: Another thing to keep in mind is that eduroam Support Organizations/Regionals could eventually operate regional proxies.

Paul: In NZ we could see that happening, but proxy would be operated by Ministry of Education. That does mean that traffic between schools under their proxy would not go up to the national proxies

Outcome: REANNZ can reach out to Ann West/Sara Jeanes to discuss possible coordination on this staggered timeout threshold approach at the NRO level.

## ARTIFACTS / LINKS

```
home_server mycountry.nz {  
    response_window = 15  
    zombie_period = 40  
    revive_interval = 120  
    status_check = status-server  
    check_interval = 30  
    num_answers_to_alive = 3  
}
```

```
home_server myregional.au {  
    response_window = 25  
    zombie_period = 40  
    status_check = status-server  
    check_interval = 2  
    num_answers_to_alive = 5  
}
```