perimeter-ident-01

ietf://85/homenet

ek@google.com
Scope and Terminology

- Tries to limit the scope

- Terminology
  - "interior" approx. a single logical administrative domain
  - "exterior" everything else
  - "border" whenever a demarcation is crossed

- Only going to deal with one of each
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- Product-defined interface purposes
- Routing adjacency
  - Security requirements/implications?
- Links requiring subscriber information
  - 3GPP ("valid SIM cards"), PPPoE with credentials
- Links requiring existing IP-layer connectivity
  - PPTP, L2TP, 6rd, 4rd, 6to4, Teredo
- Links that are point-to-point in nature
  - PPPo{A,E}, possible future link types
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- Fixed-category interfaces
- Routing adjacency
  - border security == security of the homenet routing protocol adjacency formation
  - security may be "strictly less than" if mixed mode interfaces are supported
Learning algorithm

1. Collect next hop information (continuously)

2. Classify next hops
   for each next hop:
   internal = has_adjacency
               ? true : false
   internal = i_am_delegating_router
               ? true : internal;
   external = !internal

3. Classify interfaces by their next hops

   → Apply policies based on classifications
Filter policies: a use case

- Dynamically maintain an access list representing all current, learned, internal covering prefixes.
  - examples use `{interior_nets}`

- Use the categorization of interfaces to decide what where to apply a given policy using the internal prefixes access list
Filter policy: interior anti-spoofing

- On all interior interfaces:

1. from {!{interior_nets}} to {!{interior_nets}} deny

2. # probably permit all
Filter policy: stateful exterior

- On all exterior interfaces:

1. from {interior_nets} to !{interior_nets} permit
2. from !{interior_nets} to {interior_nets} permit established
3. from any to any deny
Some open questions

1. Broadly: does this suffice?
2. Is the delegating router exception ok?
3. What to do about "mixed" mode interfaces?
4. RAs on external interfaces (Ole Troan)?