About

- ID does **not** propose specific rendezvous/resolution solutions

- instead, describes
  - rendezvous/resolution problem
  - specific associated issues

- proposed solutions can reference ID and discuss whether and how they address the issues
Terminology

- **resolution**
  - resolving a host identity into its set of IP addresses

- **rendezvous**
  - process by which two nodes obtain enough information about one another to initiate communication
  - purposefully vague, need to refine
**Issue 1: DNS Dependency**

- DNS lookup
  - Domain name
  - Reverse DNS lookup

+--------+   DNS lookup   +-------------------+
| domain |<----------------------| host | IP |
| name   |                      | identity | address |
+--------+                    +-------------------+

- IP works fine without a deployed DNS
- HIP *currently* uses DNS infrastructure to resolve FQDN into \(<\text{HIT}^*, \text{IP}^*>\)
- changing the architecture to depend on a deployed DNS is problematic
**Issue 2: Direct Communication**

- HIP’s *current* use of DNS prevents direct communication
  - must know the peer’s FQDN
  - can’t talk to a peer even when HIT is known
- problematic, if the goal is to replace IP addresses with HITs above the network layer
Issue 3: Reverse Lookup

- reverse lookups are useful
  - from IP to HIT
  - from HIT to FQDN
- current DNS-based WG draft may support
  - IP to HIT with new entries in \textit{in-addr.arpa}
  - HIT to FQDN with a new root \textit{hit.arpa}
- possible new resolvers should support reverse lookups, too
Issue 4: Rendezvous with DNS

- HIP currently requires DNS reachable at known IP addresses
- it may be useful to let hosts use HIP to talk to DNS servers
  - DNS servers would have well known identities instead of IP addresses
  - DNS servers could be easily mobile and multihomed
    - (easier than with anycast)
Issue 5.1: Middlebox Traversal

- middleboxes are a reality
- for deployment success, the rendezvous procedure must traverse them
- problem description exists
  - draft-stiemerling-hip-nat-02
- solutions being investigated
  - result of workshop, HIP-over-STUN, etc.
Issue 5.2: Location Privacy

- some operators are concerned about exposing globally routable IP addresses to end hosts
  - “you can attack it more easily if you know where it is”

- proposals should consider if and how they may support location privacy
Issue 5.3: Mobility & Multihoming

- how to rendezvous between moving peers
  - for new HIP associations
  - (existing ones use REA)
- tradeoffs
  - reachability
  - routing efficiency
  - high-rate mobility

- proposed solutions should discuss if and how they support this
Issue 5.4: Legacy Interoperation

- how to interoperate between HIP and non-HIP nodes
  - “just use IP”
  - but would be nice if some of the benefits of HIP could be had

- proposed solutions should discuss how they interact with legacy nodes
Next Steps

- would like more group feedback!
  - are all identified issues valid?
  - are we missing any?

- make this an RG document?
Questions

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...and so, in conclusion, the proposed method...

THANK GOODNESS, ALMOST OVER... HOPefully I DIDN'T BORE THEM TO TEARS.

...thank you, you've been a great audience...

OK, THE OBLIGATORY CALL FOR QUESTIONS AND I AM DONE...

...any ques...

...tions?

OR NOT.

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