IAB Workshop on Stack Evolution in a Middlebox Internet (SEMI)
Problem Statement

The Internet’s transport layer has ossified!

- Narrow interfaces (from BSD sockets to pseudo-transport over HTTPS)
- Increasing in-network modification of traffic by middleboxes that make assumptions about the protocols running through them

No innovation in the transport layer possible anymore!

- No deployment of new protocols or the extension of existing ones
- However, emerging applications require functionality that existing protocols can provide only inefficiently, if at all.
Scope of the Workshop

*Incrementally deployable* approaches to de-ossifying transport

- Interactions with middleboxes
- New methods for implementing transport protocols
- Matching paths through the Internet with certain characteristics to application and transport requirements
Expected Outcome

Architectural and engineering guidance on future work

• Areas for standardization
  • new protocols that separate signaling to and from on-path devices and common transport semantics from the rest of the transport protocol
  • general guidance, e.g. how transports as well as middleboxes can be designed and deployed to achieve these goals

• Future work to be pursued within the IAB Stack Evolution Program

• IAB workshop report
Program Day 1: Monday 26

09:00 Welcome; workshop format and goals
09:15 Introductions: one minute per person, based on questionnaire
10:00 The bigger picture: what is the problem? how did we get here?
10:45 Coffee Break, HG Foyer E Süd
11:15 The bigger picture: discussion
12:45 Lunch, FoodLab, CAB
14:15 The role and rule of middleboxes: intro and discussion
15:30 Coffee break, HG Foyer E Süd
16:00 Unbreaking transport: lightning talks and discussion
17:45 Close of day 1: discussion wrap-up, day 2 agenda setting

19:30 Social Dinner, Le Dezaley, Römergasse 7
Program Day 2: Tuesday 27

09:00  **Agenda Bash**
09:15  **Discussion Slot One** (topic TBD)
10:45  **Coffee Break**, HG Foyer E Süd
11:00  **Discussion Slot Two** (topic TBD)
13:00  **Lunch**, Dozentenfoyer, HG
14:30  Next steps, concluding remarks, and action items
15:30  **Coffee Break**, HG Foyer E Süd
16:00  Breakout (time to start work on action items)
Social Dinner: Le Dezaley

Monday, Jan 26 @ Le Dazaley, Römergasse 7 (19:30)
Backup
Questions

• Which paths through the Internet are actually available to applications?
• Which transports can be used over these paths?
• How can applications cooperate with network elements to improve path establishment and discovery?
• Can common transport functionality and standardization help application developers to implement and deploy such approaches in today’s Internet?
• Could cooperative approaches give us a way to rebalance the Internet back toward its end-to-end roots?