IAB Advice on path Signals and Network – Application Collaboration

Can it assist us in enterprise networking?

RFC 8558 (Transport Protocol Path Signals)
RFC 9419 (Considerations on Application - Network Collaboration Using Path Signals)

Jari Arkko
Ericsson Research, Finland

Advice

- Collaboration can be useful!
- Implicit signals have led to issues (ossification, incorrect information, ..)
- The main guidance has been to make explicit decisions to share information

Intentional distribution	Per RFC 8558	TCP middlebox vs. ECN
Minimal set of entities	Limit exchange to those with need to know	Cleartext vs. encrypted DNS query
Minimum information	The info that is needed for the task	App identity vs. QoS preference
Consent of parties	Sender, recipient, and ultimately user willingness	Must disclose/process vs. up to app
Securing the signals	Does the information need to be protected? Do the parties need to be authenticated?	Sharing ECN bits vs. DNS queries

Directions for enterprise networking

- Enterprise networks use increasingly public networks and other services
- Not just “a network and office computers”, but network + network near additional services such as positioning + cloud computing + AI services + SASE, …
- “Enterprise” can also be a highly engineered and demanding networking environment, e.g., a factory with robots

Some opportunities for collaboration:

- All the usual things that apply to everyone (L4S etc.)
- Enriched services from network operators, e.g., API offerings
- General-purpose signaling mechanisms (SCONEPRO)
- Collaboration across the stack, not just about network parts