

Internet Addressing

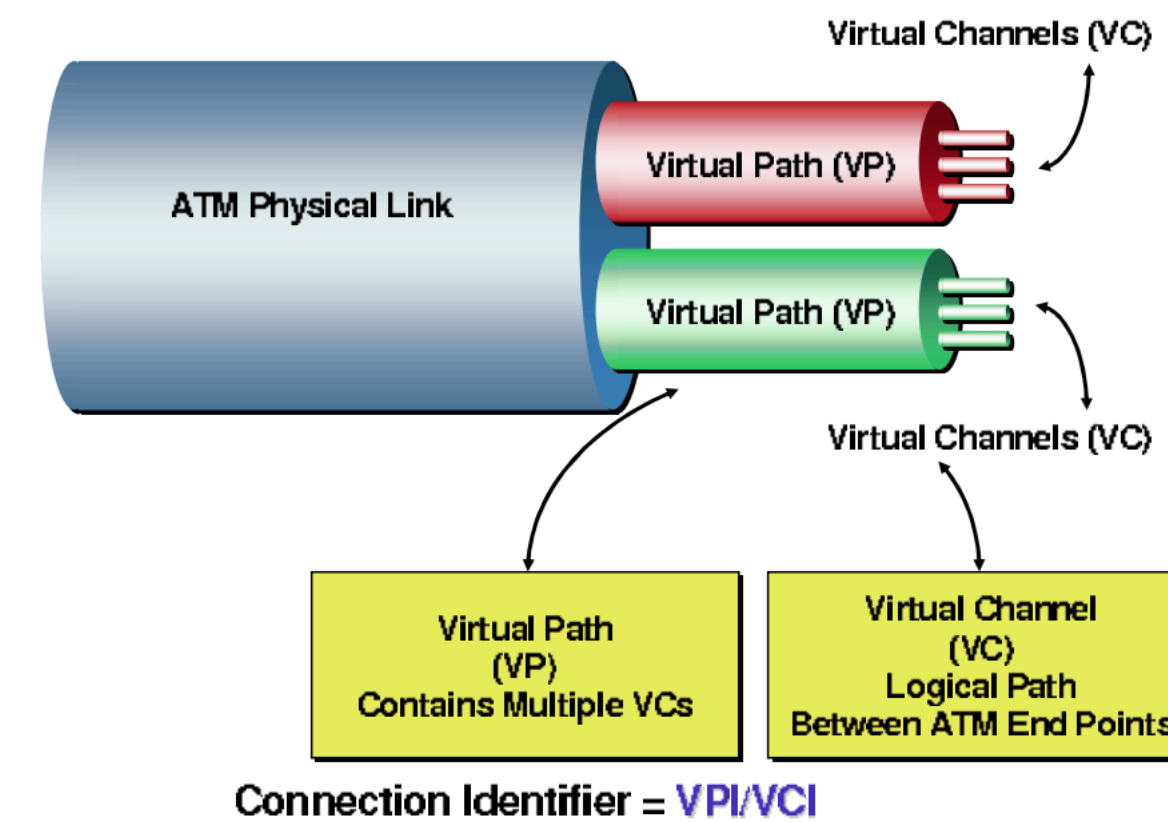
IETF-112 Side Meeting on Problems and Gaps

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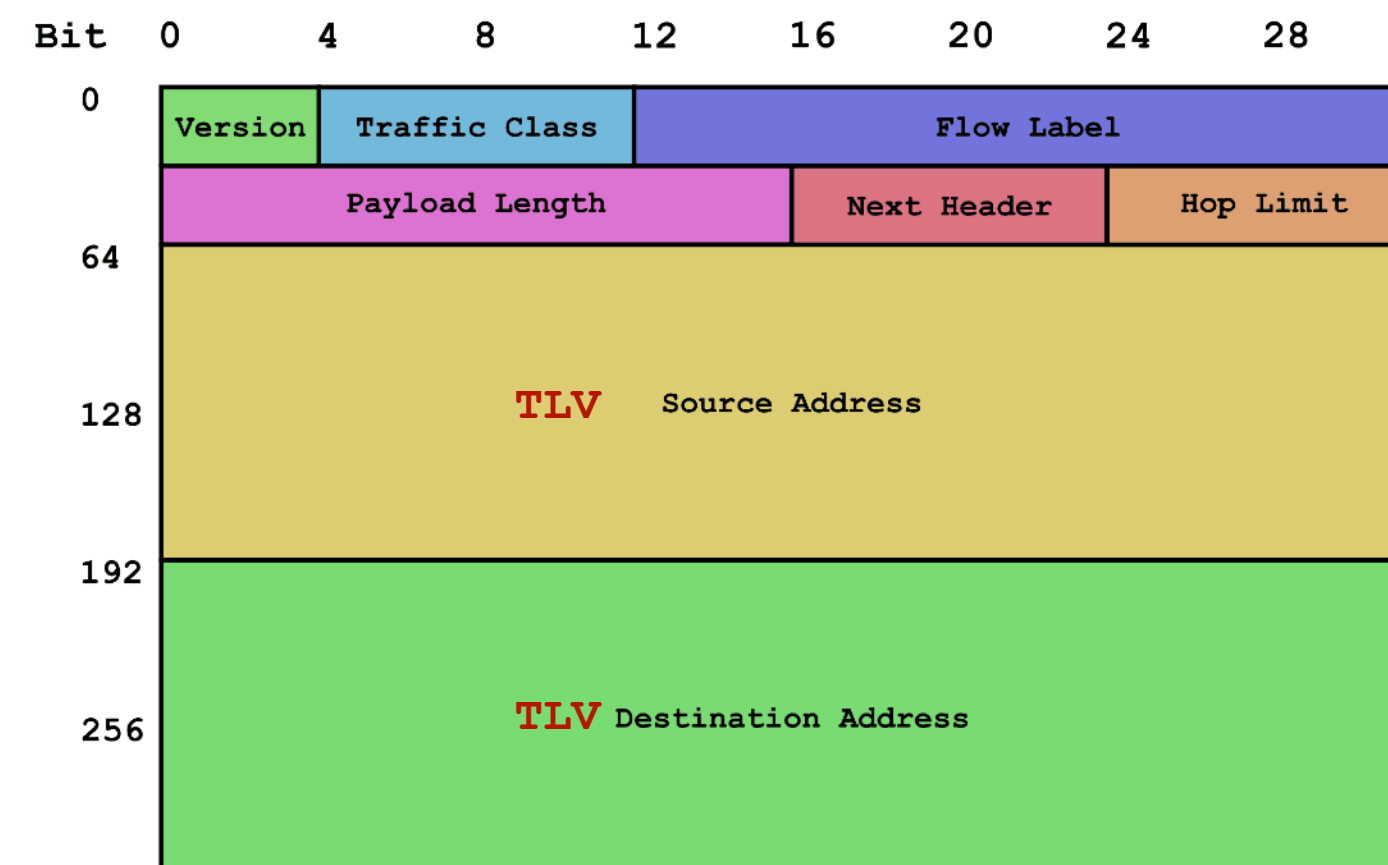
Network Design in the Course of Time

Are We All too Blinded by Our Success?

Bell-head approach to packet networking



IP-head approach to Internet evolution



Addressing is NOT the Problem

Architecture before Packet Formats

- **IP (v4 & v6) designed to do a few things well**

- Scalable end-to-end communication
- Enabling the design of resilient, adaptive networks
- Address format designed to match requirements
- Additional enablers to match: DNS, BGP

- **Widely deployed Internet protocols and shifted requirements**

- Host-based e2e not the main use case anymore
- Instead: connecting eye-balls to content (and compute functions for that)
- Cf. amount of "subscriber" traffic sourced from peering vs. CDN

- **Problems today**

- Operational complexities in managing overlays (one per service/CDN provider)
- Problematic security & privacy and trust infrastructure
- Surveillance industry dystopia
- Brittleness of centralized systems (cf. recent events)

- **Some root causes**

- Myopic, business-driven kludge development (resort to network management...)
- Network layer limitations wrt supporting new use cases directly (hence overlays)

- **New address formats will not fix this**

- Addressing is a consequence of architectural decisions
- Much harder topic – but let's turn the discussion from its head onto its feet...