Tunnels in the Internet Architecture

draft-ietf-intarea-tunnels

Joe Touch, Mark Townsley
We love to build Tunnels...

When and where we think we need them, often for very specific uses
Tunnels have a wide variety of uses...
What goes in must come out...

It’s difficult to see from the outside of the tunnel what’s actually going on within the inside of the tunnel.
When carrying IP, this means acting like a link layer attached to a router.

When using IP, this means looking like a network layer and host.

This is recursive.
The Tunnel Model
Revised Organization
(From IETF 91)

Current -00
• Intro
  – Survey of tunnel technologies
• Known issues
  – MTU discovery
  – Fragmentation
  – Signaling
• Current tunnel standards
  – IP in IP
  – IPsec
• Issues
  – Tunnel model
  – Parties participating

Planned -01 (shipped 7/15)
• Intro
  – Focus on tunnels that transit IP (i.e., IP over X)
• Tunnel model
  – Terminology
  – View from outside (i.e., a link)
  – View from inside (i.e., ingress to egress)
• Issues
  – Endpoint:
    • fragmentation/reassembly (incl. IDs), NAT/load balancing, congestion, signaling
  – Transit:
    • hopcount, MTU, signaling
• Summary of current protocols
  – Table of Issues, with discussion for each protocol
• Observations
  – For protocol designers, implementers, operators, standards bodies
• Summary
Current Status

• Revised -01 document, issued 7/15
  – Complete revision vs. -00

• Discussions on list
  – Mostly about MTU discovery
  – Suggestions on additional topics
Current plan (todo list)

• Augment with additional topics
  – Diagnostics, “OAM”
  – Revise pseudocode (on address resolution)
  – AMT in list of tunnel examples
  – Multicast
  – Multipoint tunnels

• Relation to existing RFCs
  – 02 will indicate updates RFC4459 (informational)
  – What about RFC2473? (PS)?

• Clarifications
  – Writing (esp. abstract), figures, etc.
  – Be more clear about fragmentations (tunnel payload or tunnel transit)

Note: revs are off-cycle to encourage on-list discussion