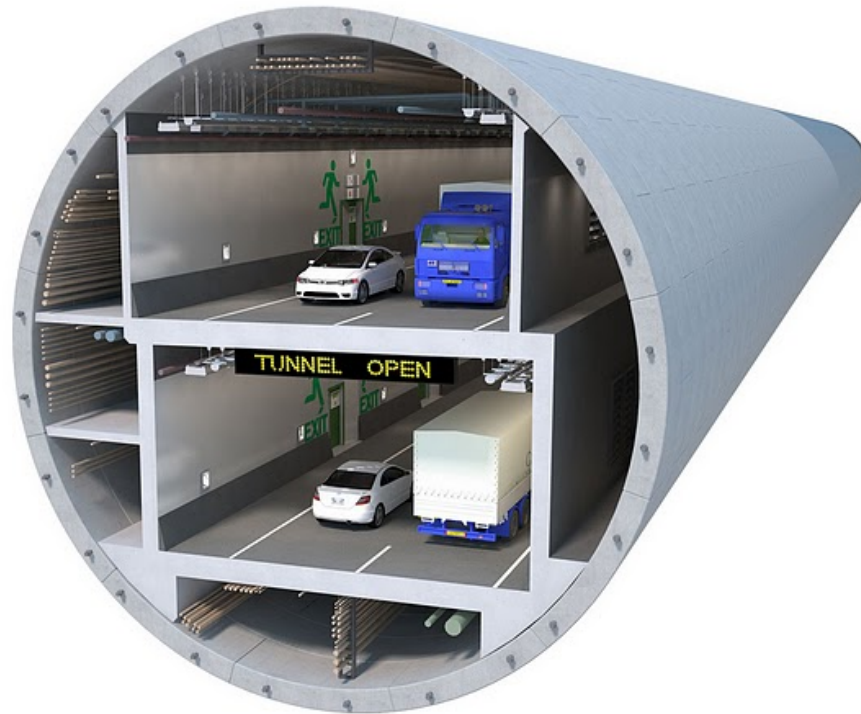


# Tunnels in the Internet Architecture



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.





# Tunnels must be designed to fit what we want to put in them

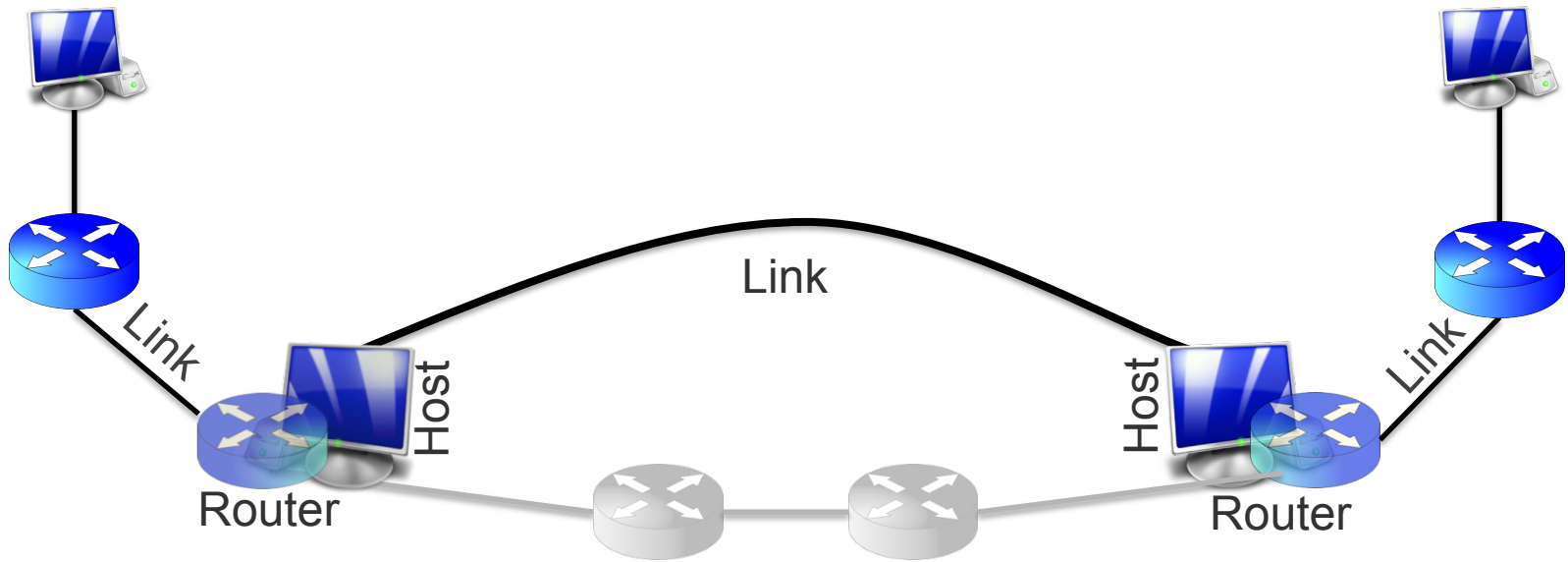
When *carrying* IP, this means acting like a link layer attached to a router.

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**