Generic UDP Tunneling

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The Narrow Waist

- For practical reasons apps prefer to use TCP or UDP
  - Slight chances of connecting to the receiver otherwise
- Hinders deployment of new protocols
- Has lead to different ad-hoc UDP-wrapper specifications or proposals
  - Mobile IP, IPsec, SCTP, DCCP,…
- This is becoming an arms race...

No One Loves UDP Encapsulation

- …but if people are doing it anyway, should IETF define a standard way of doing it once and for all?
  - (while waiting for better, UDP-free times to come)
- One Benefit: experimenting with new protocols becomes easier
  - If systems automatically support UDP encapsulation

Requirements

- MUST try native protocol before going for encapsulation
- Not tied to specific protocols by design, introducing new protocols should be easy
- Must NOT affect the native protocol
  - Should be transparent to it
- Firewall admin may want to control when/if UDP tunneling is allowed?

Problems with UDP encapsulation

- Adds overhead (at least 8 bytes)
  - May cause fragmentation as a result
- IP options may be problematic
- Opens new security issues, e.g., enable firewall pass-through by unwanted protocols

Does UDP Solve the Problem?

- Not meant as a full-fledged NAT traversal mechanism
  - Might help many common scenarios
- Are middleboxes really rejecting traffic just because they are not UDP or TCP?
  - Or have IP options?

The question

- Is there a problem?

- If "no", great

- If "yes", should the IETF fix it with a generic scheme?