

GRE-in-UDP Encapsulation

draft-ietf-tsvwg-gre-in-udp-07

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July 2015 Prague Czech

GRE-in-UDP Encapsulation

- Provides flow entropy for IPv4 and IPv6 ECMP function
 - Five tuple hashing is common practice for ECMP
- Has UDP checksum that can be used as destination checksum in IPv6 network
 - GRE checksum does not include IP header, which can be an issue when used in IPv6 networks
- Adopts GRE protocol property
 - Encapsulate a network protocol over IP network, avoid use of UDP port for payload indication
- However, will work as a UDP application
 - GRE does not reach the host, GRE-in-UDP will
 - GRE is stopped by middle box, GRE-in-UDP may be not
 - GRE-in-UDP can go the places that GRE can't, which makes two not equivalent usage space
 - Concerns on use of GRE-in-UDP where GRE can't be used

Open Discussions

- GRE-in-UDP protocol spec.
 - Require performing UDP checksum in IPv6?
 - Protect packet corruption and mis-delivery
 - Avoid to impact other UDP applications
- GRE-in-UDP usage scope?
 - use the places that GRE were used, and
 - apply within well managed SP network, and
 - use over the paths where no middle box exists
- Any other open issue or concern?
 - Should be standard track or Informational

Next Steps

- Address comments from mailing list
- Clarify the usage scope based on consensus
- Update section of MTU and Fragmentation to align with [RFC7588]