GRE-in-UDP Tunnels Discussion

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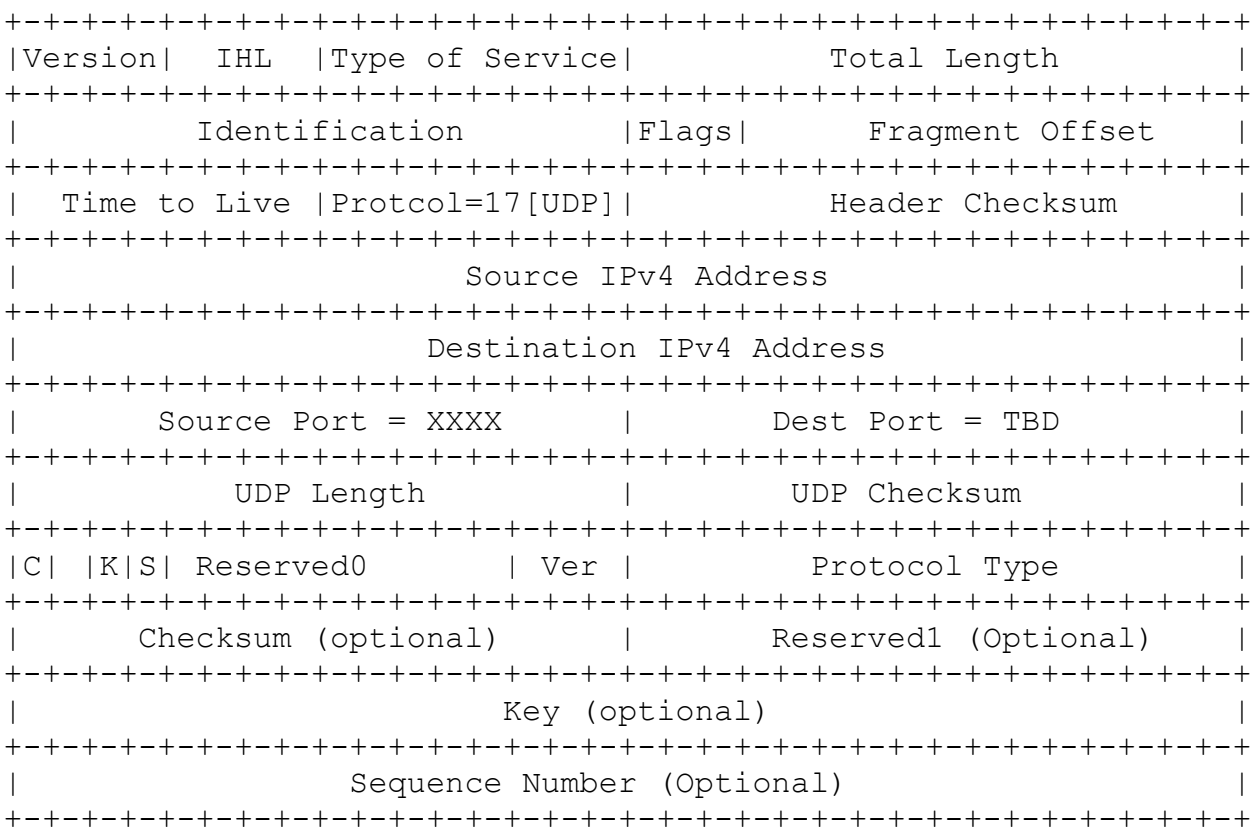
GRE in Network Environments Today

- Increasingly common tunneling protocol
- Increasingly high traffic volumes
- Many devices unable to make use of GRE Key field for input to loadbalancing hash functions
- High volume GRE sources or GRE aggregator NEs problematic as a result

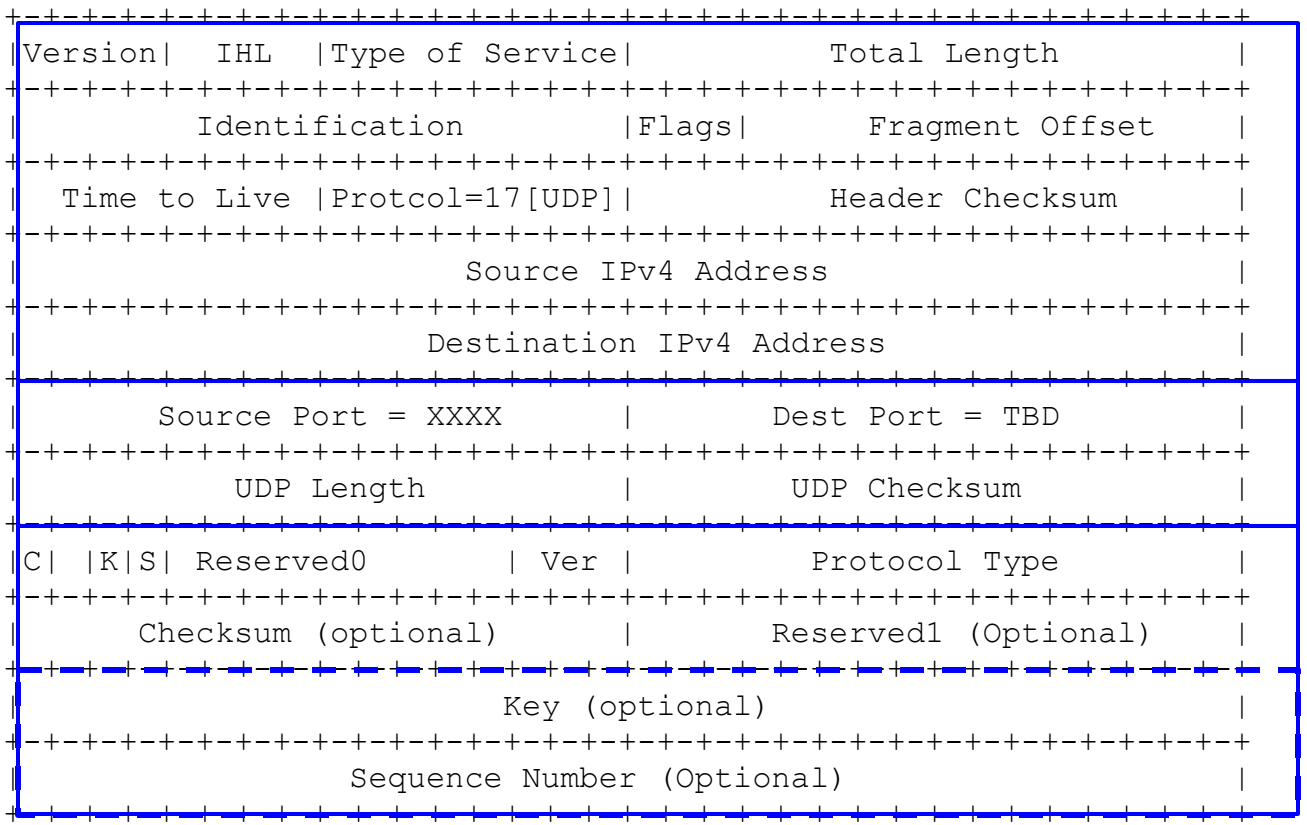
Goals

- Improve load-balancing for GRE encapsulated traffic
- Make use of lowest common denominator fields available as input across broad range of NE hash functions
- Provide a general purpose entropy-shim for use in a variety of environments
- minimize packet overhead
- conserve TCP ports
- Preserve GRE Key Field for other uses

Proposed Header



Proposed Header



Advantages

- Works in most deployments
  - Almost all deployed NE's can use UDP source/dest as input to hash function
  - does not require support of additional encaps or signalling protocols in environments where they are otherwise not used
- Adds 16 bits of entropy
- Retains flexibility in use of GRE Key Field
- Minimal packet overhead introduction
- Preserves UDP Ports

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