GUE & ILA update

draft-ietf-nvo3-gue-01
draft-herbert-nvo3-ila-01

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Update overview

● GUE
  ○ Extensions
  ○ Enhancements/clarifications for middlebox interactions
  ○ Support for TLVs in common space?

● ILA
  ○ Support added to Linux
  ○ Commencing canary testing and deployment
  ○ Presenting in v6 ops also
Protocol extensions

**Defined**
- VNID
- Security field
- Header checksum
- Remote checksum offload
- Fragmentation
- Payload transform
- Session identifier

**Possibly**
- Passive OAM
- Outer/inner TTL mapping
- Congestion control
- Group based policy
- Segmentation offload

**Probably not**
- CRC
- Reliability layer
- QoS
- QCN
- Pseudo wire related
- Routing related
- Inband negotiation
Middlebox interactions

● Middlebox identification of GUE packets
  ○ Destination port not enough
  ○ UDP magic numbers (draft-herbert-udp-magic-numbers-01)

● ICMP error handling
  ○ Cannot use always source port to find sender

● Stateful middleboxes
  ○ Session identifier option to allow middleboxes to track “flow state” (draft-herbert-gue-session-id-00)
Potential support for TLVs?

- Could add new option specifying format of private data to allow “infinite” flexibility
- Examples
  - TLVs (like in Geneve)
  - CBOR for SPUD
- No effect on rest of the protocol
- Complexity tradeoffs
Identifier locator addressing

- Network virtualization with encapsulation
- Split IPv6 address into locator and identifier
- Transparent to network and devices

Use cases
- Address per task. Simplifies job scheduling
- Task mobility (virtualizing the data center)
- L3oL3 alternative for VMs
Identifier Locator Addressing (ILA)

- **-01 version**
  - Describe application NVo3 Architecture
  - Only use ILA in destination addressed
  - Address per task rationale

- **Implementation in Linux 4.1**
  - Transparent to network and HW
  - ~2% perf. hit. Acceptable for scaled deployment
Deployment status

- Proceeding with canary testing
- Design for address assignment
- Design/implementation of ILA “router”
Thankyou!