

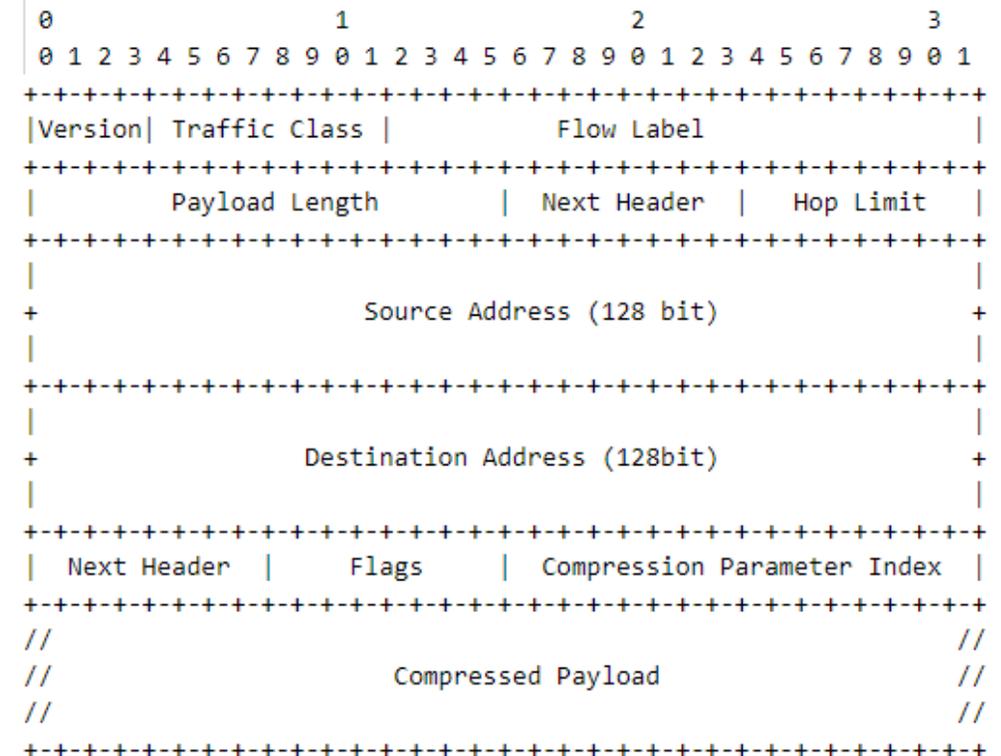
IPComp excluding transport layer

Hang Shi/Cheng Li/Meng Zhang/Xiaobo Ding

Background on IPComp

- IP Payload Compression Protocol(IPComp) compress IP payload to save bandwidth
- Next header = original next header
- Flags: Must be 0
- Compression Parameter Index(CPI) to indicate compression algorithm

Value	Transform ID	References
0	RESERVED	[RFC2407]
1	IPCOMP_OUI	[RFC2407]
2	IPCOMP_DEFLATE	[RFC2407]
3	IPCOMP_LZS	[RFC2407]
4	IPCOMP_LZJH	[RFC3051]
5-47	Reserved for approved algorithms	
48-63	Reserved for private use	
64-255	Unassigned	



Problem1: incompatible with network functions

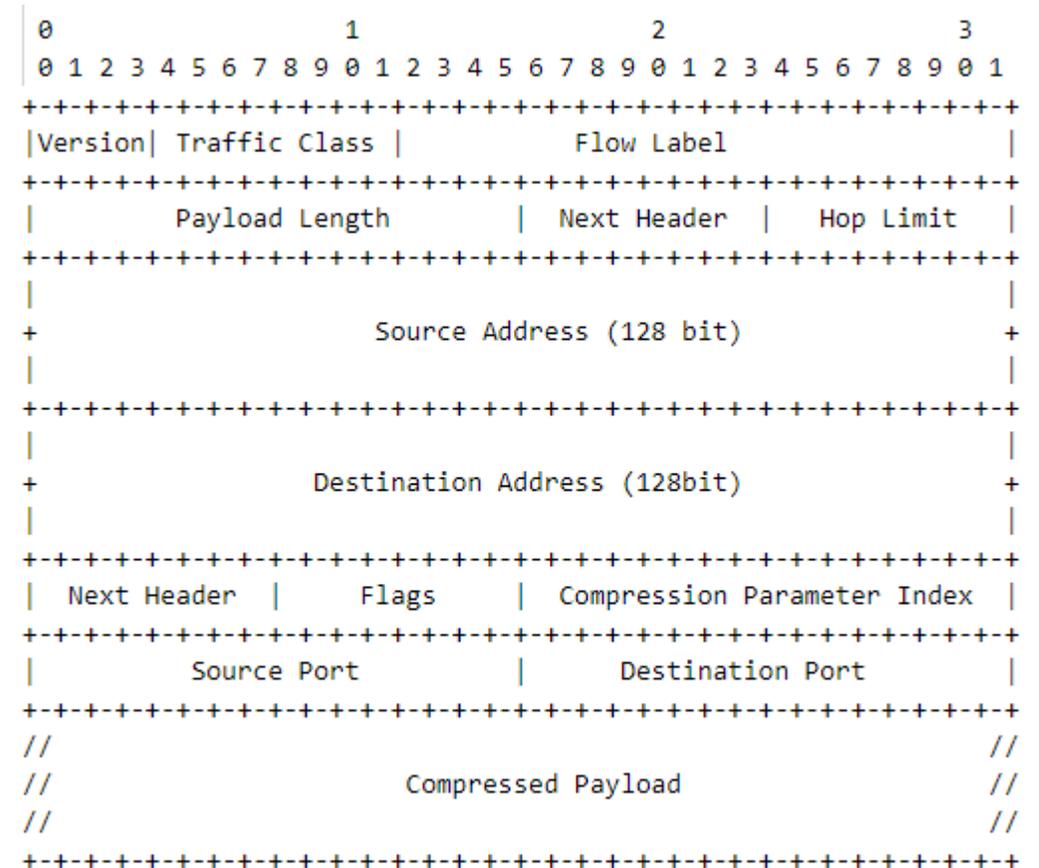
- Layer 4 information(Source port + Destination port) is compressed
- NAT, Firewall, ACL may need to inspect layer 4 info
- Can not deploy between IPComp nodes



Extension 1: four-bytes exclusion

- Exclude ports info from the compression range.
- Option 1: Change Flags, 0->1 bit indication
- Option 2: Change CPI, duplicate each compression algorithm codepoint

Value	Transform ID	References
0	RESERVED	[RFC2407]
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3	IPCOMP_LZS	[RFC2407]
4	IPCOMP_LZJH	[RFC3051]
TBD	IPCOMP_OUI with four bytes exclusion	This document
TBD	IPCOMP_DEFLATE with four bytes exclusion	This document
TBD	IPCOMP_LZS with four bytes exclusion	This document
TBD	IPCOMP_LZJH with four bytes exclusion	This document



Problem 2: Out-of-order processing

- If a flow is IPComp enabled but compression does not produce shorter payload, RFC 3713 says: sent uncompressed without IPComp header
- Out of order, packets with the IPComp header will go through decompression co-processor first

Extension 2: Uncompressed Payload

- Add IPComp header even if the payload is sent uncompressed
- Use a new CPI value for uncompressed packet

Comments?

- Currently, the CPI codepoint is allocated in the IPSec registry and negotiated use IKE, but ...
- Compression is not related to security, CPI value does not have to be allocated by IKE, maybe BGP? Decouple with IPSec?
- For transport exclude L4 info, CPI or flag?