



PW VCCV – INBAND CC USING OFFSET

SRIGANESH KINI, DAVID SINICROPE
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PROBLEM STATEMENT

- › Multi-path is essential for load-balancing and redundancy but requires *flow-label* which may not be available
 - Additionally, in-band OAM using CC Type-1 requires CW which may not be available

- › TTL Expiry VCCV (without CW) is not inband even though it is a MUST (especially for MS-PW)

- › Need a CC that is inband for any “flow” of the PW that needs OAM – Must not depend on “flow-label & CW”

CONSIDERATIONS

- › Looking beyond label stack to do multipath is widely deployed
- › IP header can be used to do multi-path by not using CW. This helps to utilize the true end-to-end flow info that is already present.

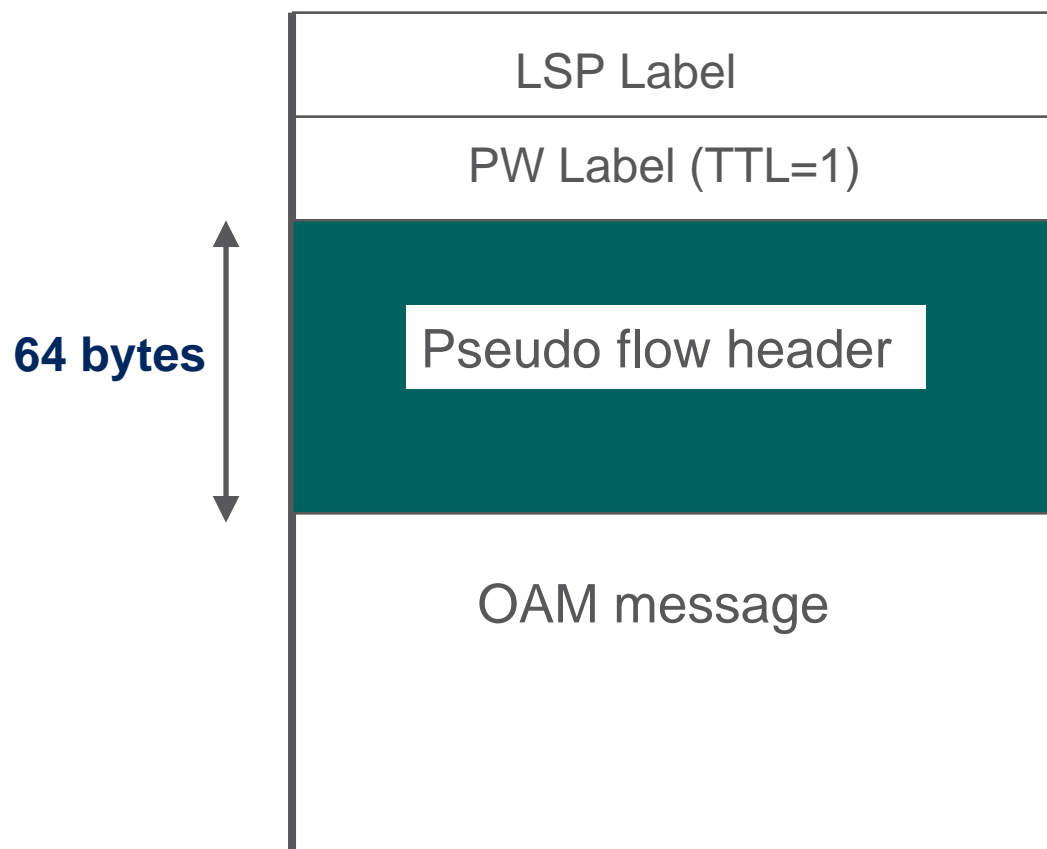
SOLUTION

- › Extend an existing CC type rather than define a new one
- › CC Type3 is extended since it is required for MS-PW anyways
- › Start the VCCV CC at a fixed offset from the PW label
- › The bytes between the PW label and the CC are set according to the flow for which OAM is required
 - These bytes are referred to as **pseudo flow header**

SOLUTION (CONTD)

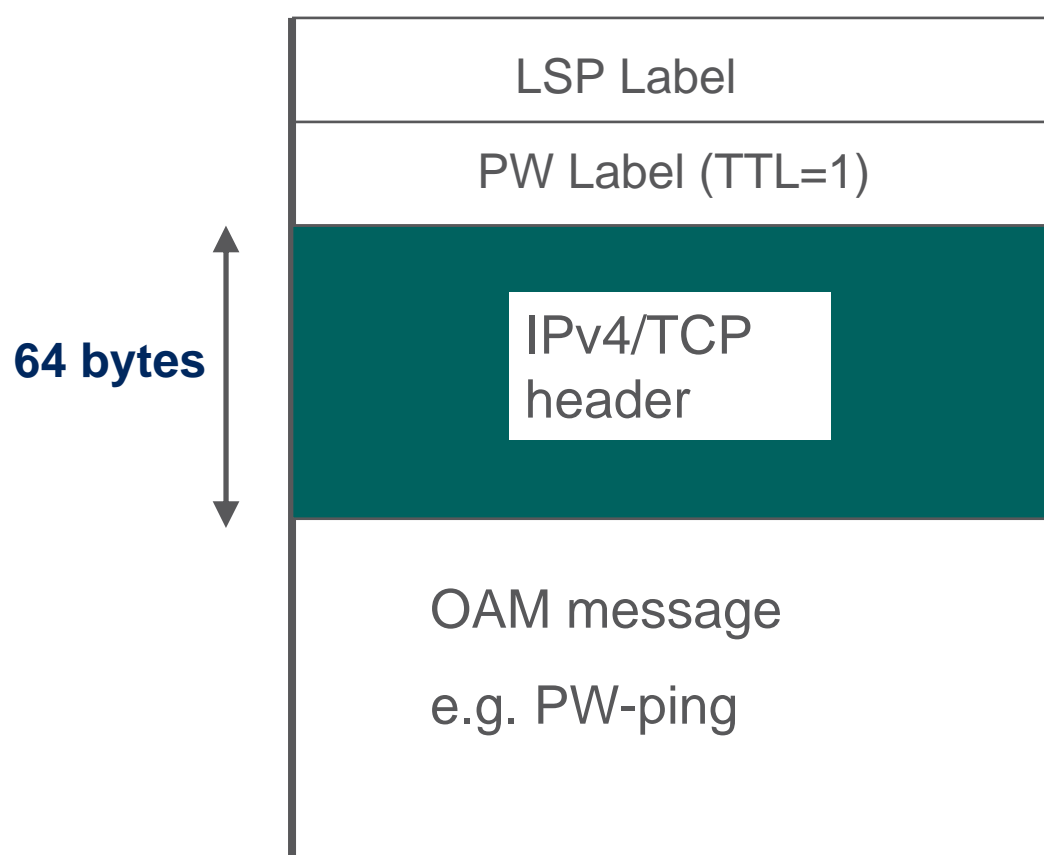
- › The **pseudo flow header** is a fixed size entity that typically consists of the packet header of the flow for which OAM is desired.
- › A fixed size of 64 is chosen since in almost all applications that is enough to accommodate the header of any protocol. It is also easy to implement in hardware/firmware.
- › Intermediate nodes forward the CC packet as if it is a real packet by looking at the label stack and beyond that into the **(pseudo) flow header** for forwarding decisions.

PACKET FORMAT



PACKET FORMAT FOR PPW-EIM

- › Say OAM for the flow src-addr=192.168.1.1,dst-addr=192.168.1.2, protocol-type=TCP, source-port=80, dst-port = 20000



› The END

› COMMENTS ?