

The background is a solid blue gradient with a network diagram overlay. The diagram consists of various sized circles (nodes) connected by thin white lines. Some nodes are simple outlines, while others have a dotted inner circle. The layout is decentralized, with clusters of nodes and lines extending across the frame.

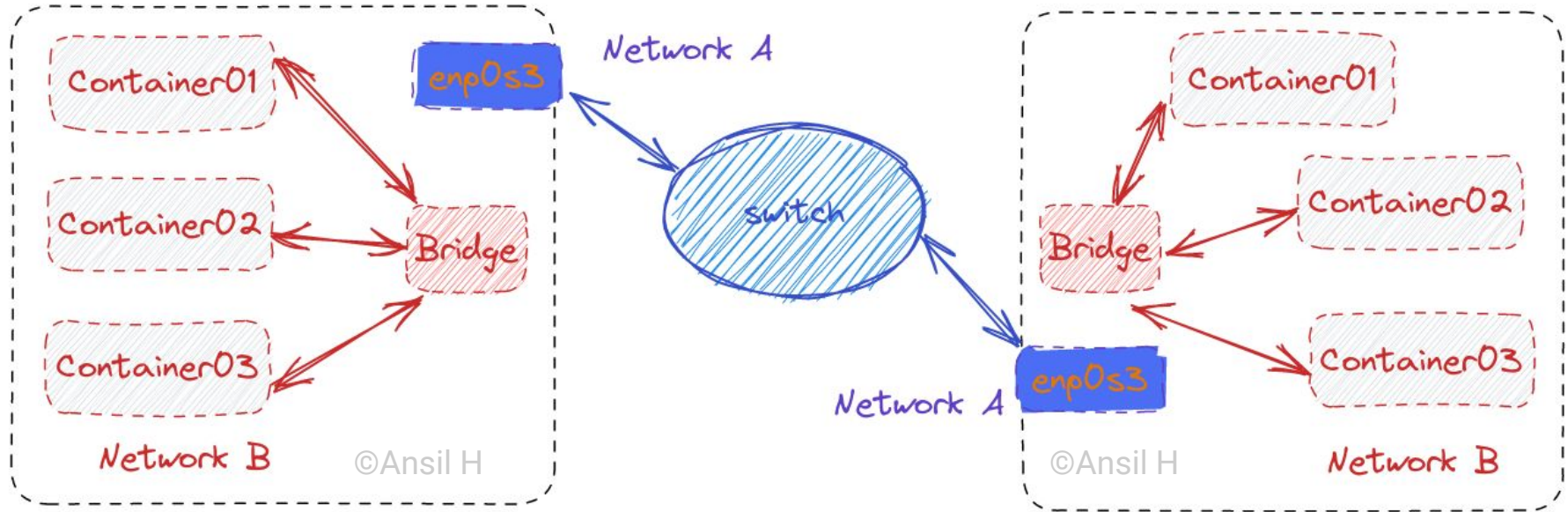
# Container Networking Fundamentals - Part 2

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The background of the slide features a network diagram on a blue gradient. It consists of various nodes represented by circles of different sizes and styles (some with concentric circles or dotted patterns) connected by thin white lines. The nodes are distributed across the frame, with a higher density on the left side where the text is located.

# VXLAN

# Virtual Extensible LAN - VXLAN



# VXLAN

- Packet encapsulation
- TCP packet inside UDP
- Maximum Transfer Unit

# MTU 1450

The default MTU is 1500 in network interfaces.

If we keep the default value inside the container, the MTU may exceed the limit after encapsulation

14 Outer Ethernet header (Mac header)

20 byte Outer IP header

8 byte UDP header

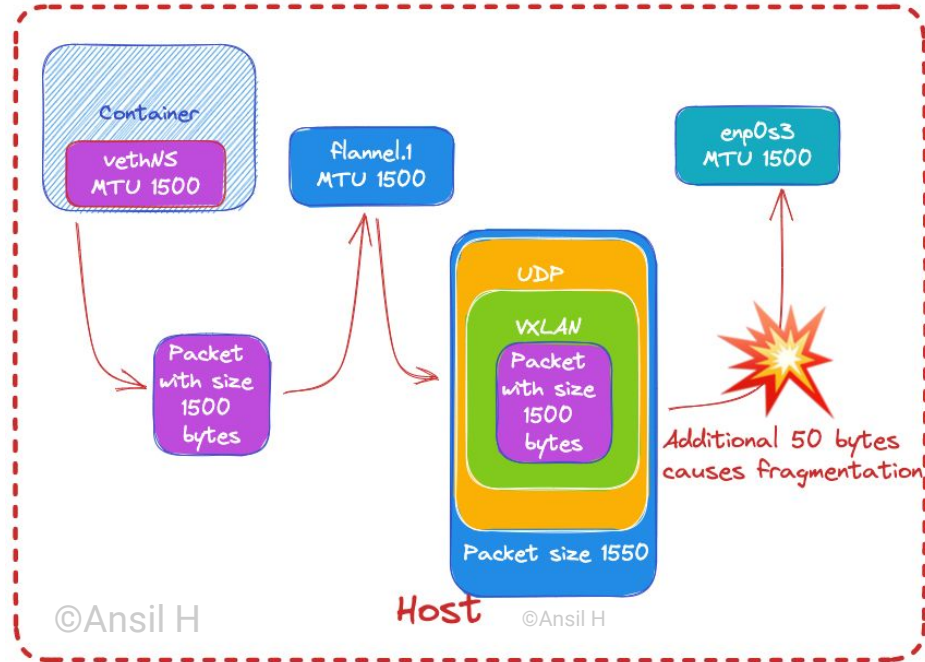
8 byte VXLAN header

1500 byte payload which includes the original IP header/s.

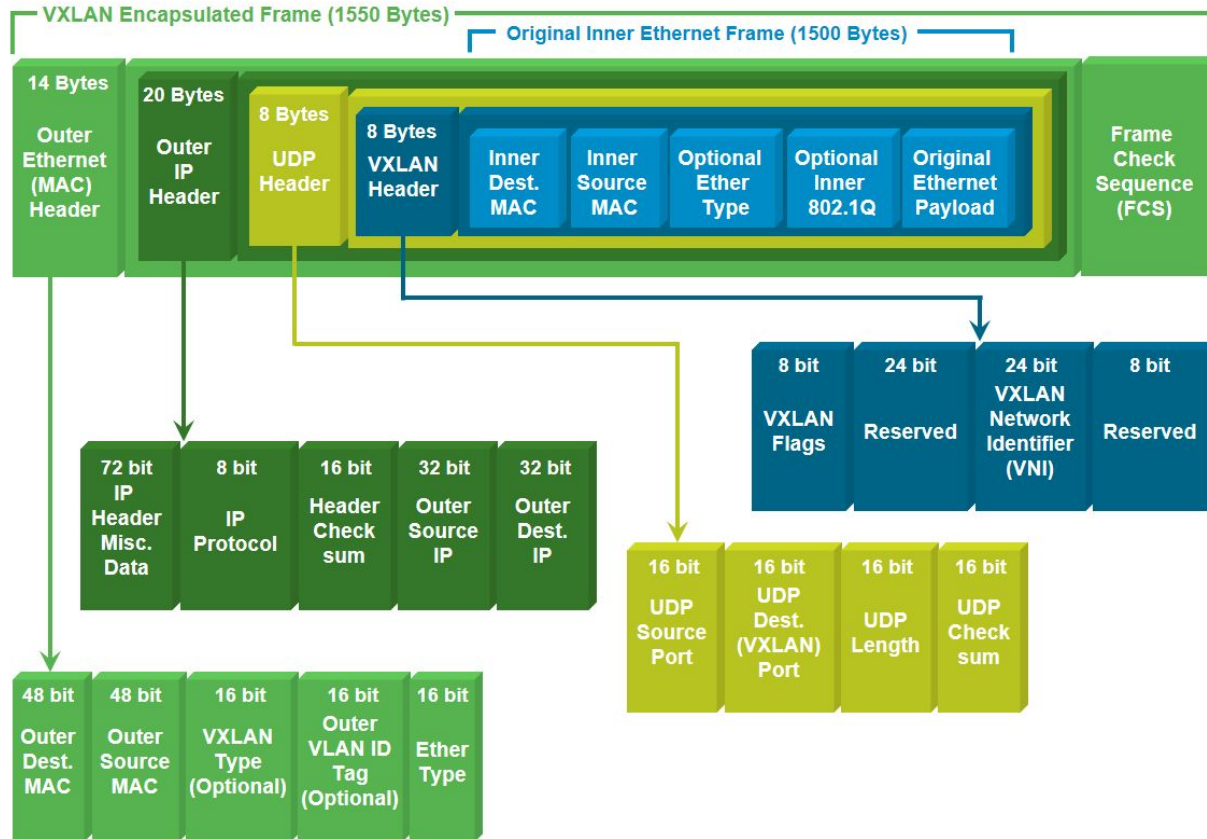
**Total = 1550 bytes which exceeds the default MTU.**

We need to set the MTU to 1450 for the Virtual Eth devices so that the MTU will not exceed after encapsulation,

# VXLAN - MTU



# VXLAN Packet



# Flannel



CNI

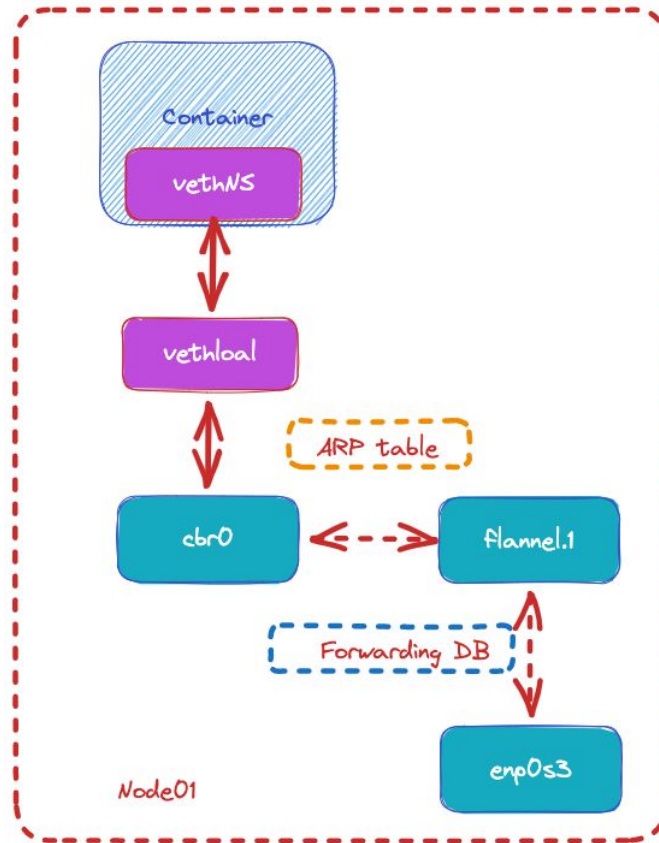
Specifications and libraries for writing plugins that to configure network interfaces in Linux containers



Flannel - Flannel is a simple and easy way to configure a layer 3 network fabric designed for Kubernetes.



# Flannel



# VXLAN - Demo

- Create two containers
- Add a veth pair
- Create bridge
- Add veth pair ends to bridge
- Setup etcd
- Start flannel
- Configure IPs and setup packet forwarding

# Flannel

A network fabric for containers

- Assign subnet to each nodes
- Create flannel VXLAN interface
- Create and sync bridge forwarding database

# Flannel in Kubernetes

The ARP entry

The Forwarding DB

Encapsulation

Decapsulation

VXLAN Packet tracing

The background is a blue gradient with a network diagram. The diagram consists of various nodes (circles) of different sizes and styles, some with concentric circles or dotted patterns inside. These nodes are connected by thin white lines, forming a complex web. The text 'Q&A' is written in a bold, white, sans-serif font, positioned on the left side of the image, partially overlapping one of the nodes.

**Q&A**