

# SDN

## Software Defined Network

- **Zone** - upper level:
  - VMs are assigned to zones.
  - user permissions are applied to zones
  - zones are containers of VNet's
  - zone types:
    - **Simple** a simple bridge on single Proxmox node - no communication across the cluster.
      - usage: user friendly zone names instead of vmbrix interfaces. But still needs to specify VLAN tag for VLANs.
    - **VLAN**
      - like above but with VLAN tag assigned
    - **QinQ** - 802.1Q tunnelling / stacked VLANs / 802.1ad
      - first VLAN tag in L2 frame is a provider / service vlan
      - 2nd VLAN tag in L2 frame is customer tag
    - **VxLAN** RFC 7348 (tech preview)
      - encapsulate L2 frames in L3 UDP packets.
      - L3 networks solves lots of forwarding/routing problems of L2 networks. No STP nor VLANs needed.
      - well known protocols like OSPF, EIGRP can be used for L3.
      - VNI tag is 24 bit (16 777 215 VxLANs)
      - one VxLAN is a group of Virtual Tunnels. VTEPs (Virtual Tunnel Endpoint) acts like switch
    - **EVPN** (tech preview)
- **VNet's** - lower

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