



Implementing A High Performance Virtualized CPE Solution

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- Why Choosing FD.io
- SD-WAN Solution
- SD-WAN Core Component
- vCPE Proposed Solution
- vCPE Architecture based on VPP
- vCPE Key Implementation on VPP
- Next Steps













Foundation

- Cloud Ready and Multi-tenant
- Decouple Control and Data Plane
- Plug and Play
- Cost Save and Easy Deployment
- Intelligent Path Selection
- Secure Transport and Self Manage















- Provide high performance data plane based on VPP and DPDK.
- Honeycomb acts as an Agent for SDN Controller and manages vCPE via Netconf.
- Manage vCPE through RESTful using Web or mobile APP.







- uCPE and vCPE runs on VPP and DPDK.
- Creates one VTE endpoint for each CPE, which can leverage VxLAN and IPSec.
- Each VTE endpoint enables ACL and Qos.



Creating VTE Endpoints





Issue:

CPE often enables NAT that introduces uncertain IP address and Port, which causes that vCPE cannot connect CPE directly.

Solution:

- Creates a Snooping Module and snoops control protocol packets.
- vCPE sends registered info to SDN Controller.
- SDN Controller authenticate the CPE. If passed, then creates a new VTE endpoint.
- Data plane packets will flow through VTE endpoint directly.







- Enterprise Services run on VMs.
- Redirect traffic to VMs.
- Enforces different ACL and Qos Policy for each service.

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.io Foundation

- CPE could communicate with each other through Layer 2 VPN or Layer 3 VPN.
- Enforces different ACL and Qos Policy for each subscriber.

Integration with Legacy Application





→ red line: control plane flow

black line: data plane flow



- VPP dispatches control plane packets and data plane packets.
- VPP steers control plane packets to Legacy Application through tap interface.
- Tap interface could meet low bandwidth requirement for control plane packets.







Support Dual WAN links: Wired and Wireless.

On normal case, need to support load balancing for multiple links as per some policy.

Support Link Protection and Recovery

- WAN connection automatically switch to wireless link if wired link failure detected.
- Switch back to formal link if failure is recovered.







Thank you !

Q & A

Please stop by our demo at Intel Booth

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