

# Running OVS with a P4 Coprocessor

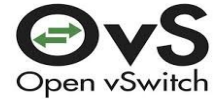
Dan Daly - Intel

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**Dan Daly**  
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# Notices & Disclaimers



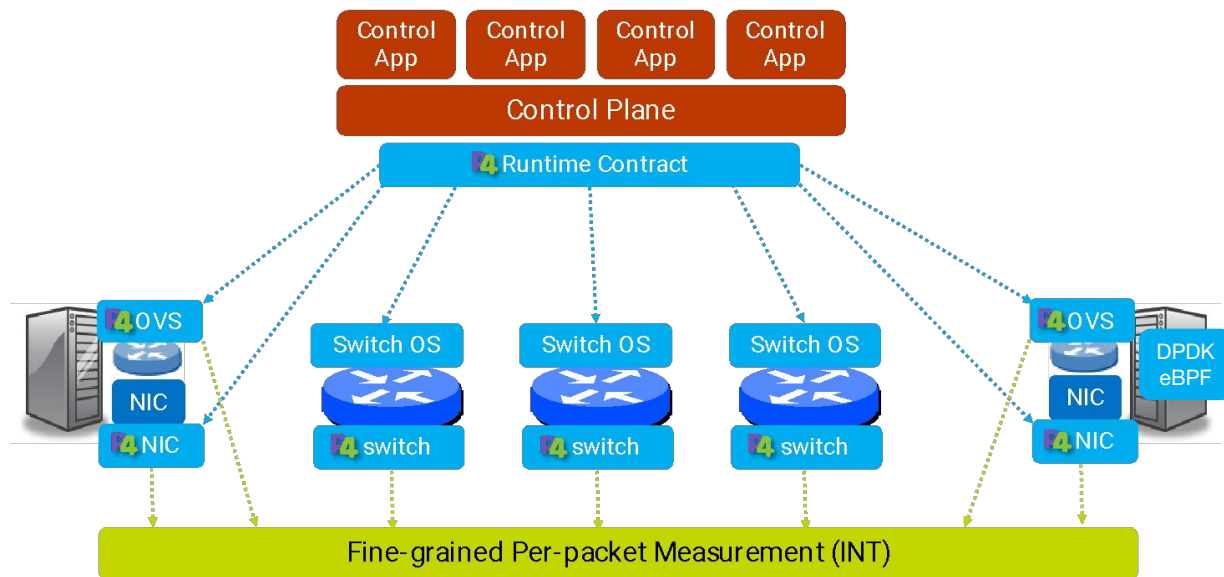
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# Agenda



1. P4 Usages
2. Independent Functions
3. Why a Coprocessor?
4. Motivating Example
5. Call to Action

# Network as a Programmable Platform



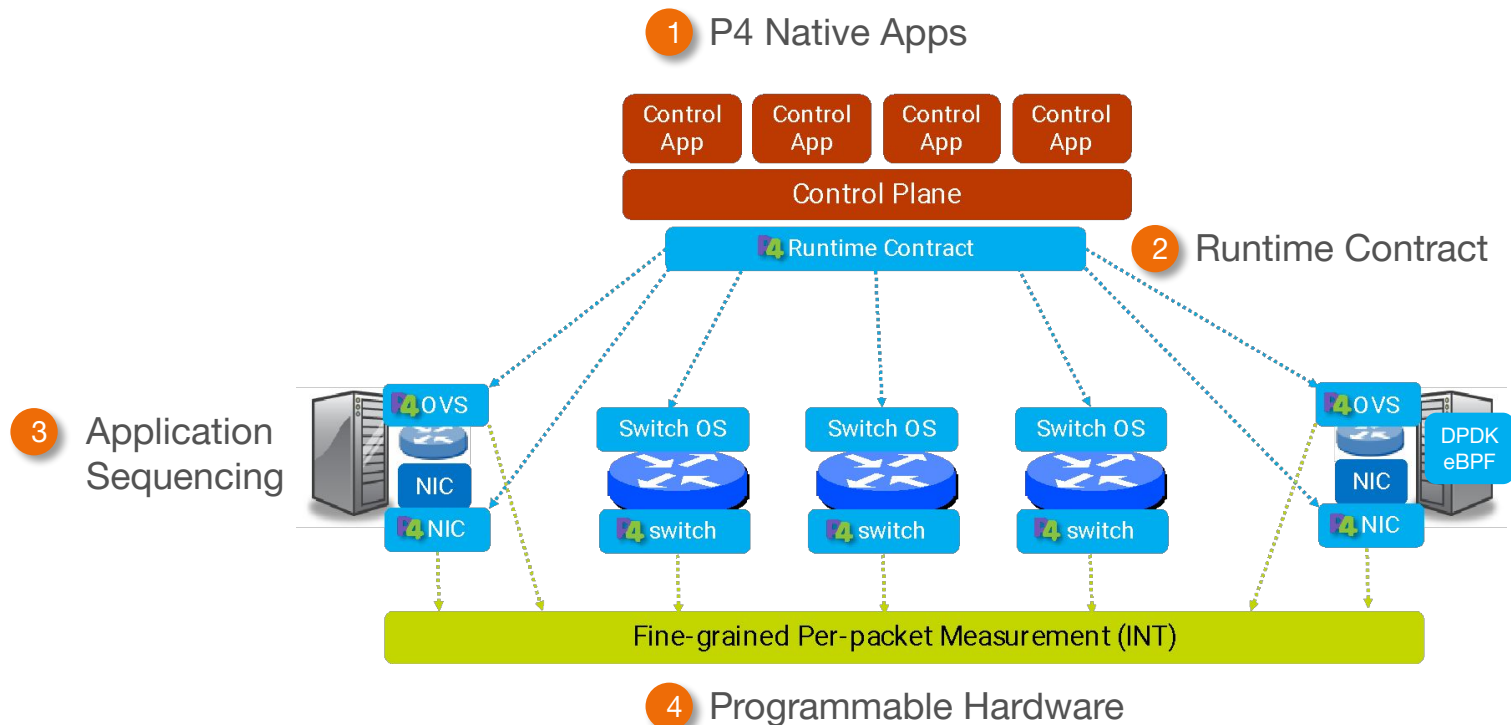
## Key Tenets:

- 1 Common pipelines & programming model
- 2 Common software framework
- 3 Telemetry and observability across

# Where is P4 Used Today?

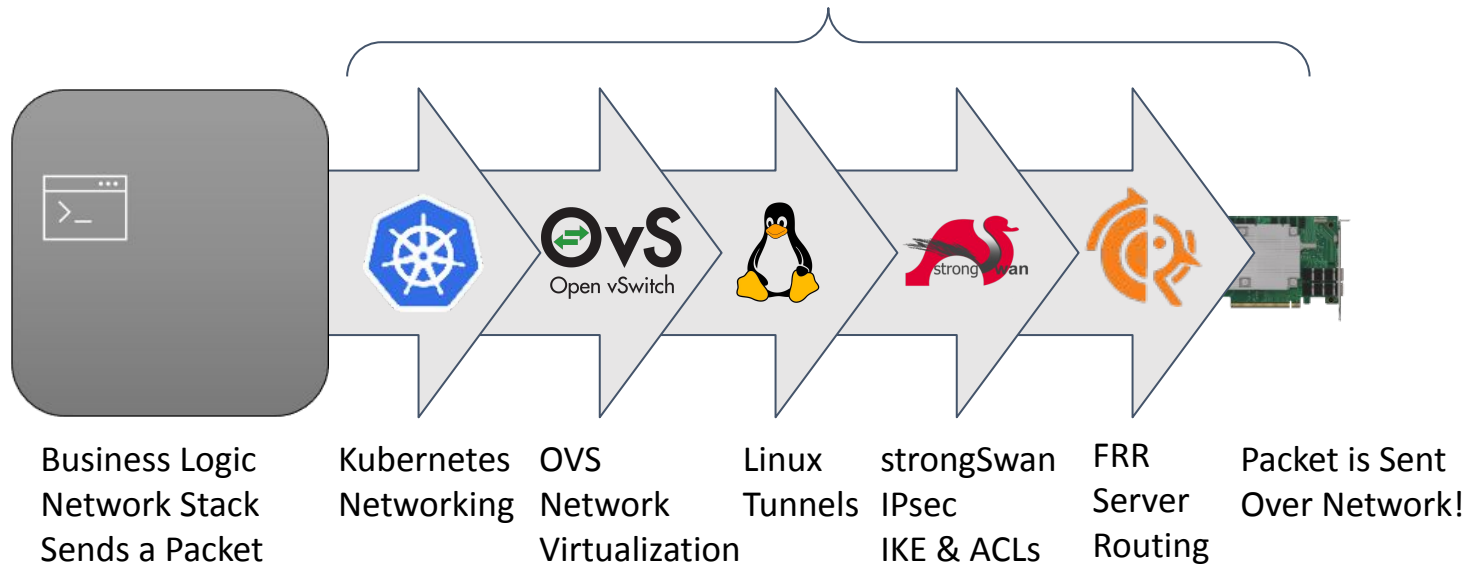


Mix & Match Where it is Needed



# Independent Data Planes

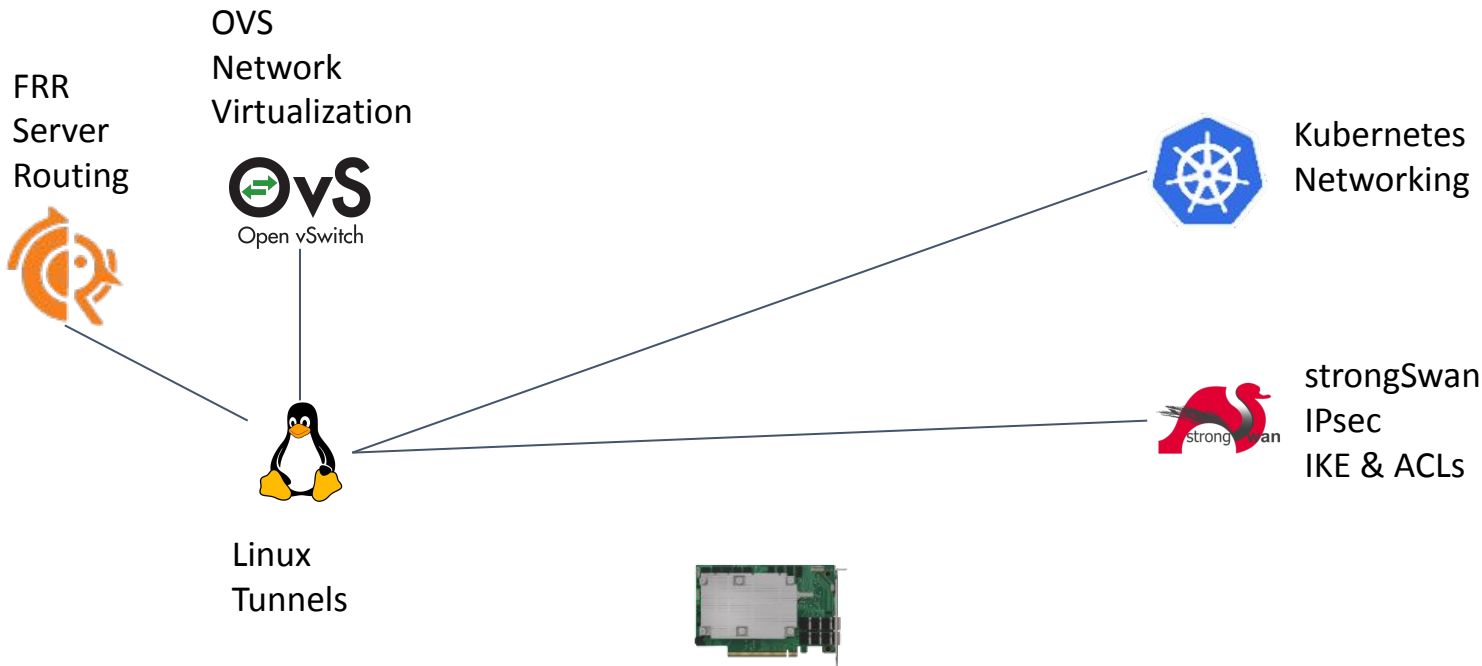
Use P4 to explicitly sequence them



# Independent Control Planes



We use the kernel to organize these today



# Why a Coprocessor?

Support OVS w/ Minimal Changes



Tried Adding P4 Directly to OVS

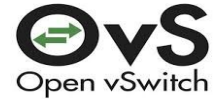
Tried Adding a New P4 Dataplane to OVS

Coprocessor Approach:

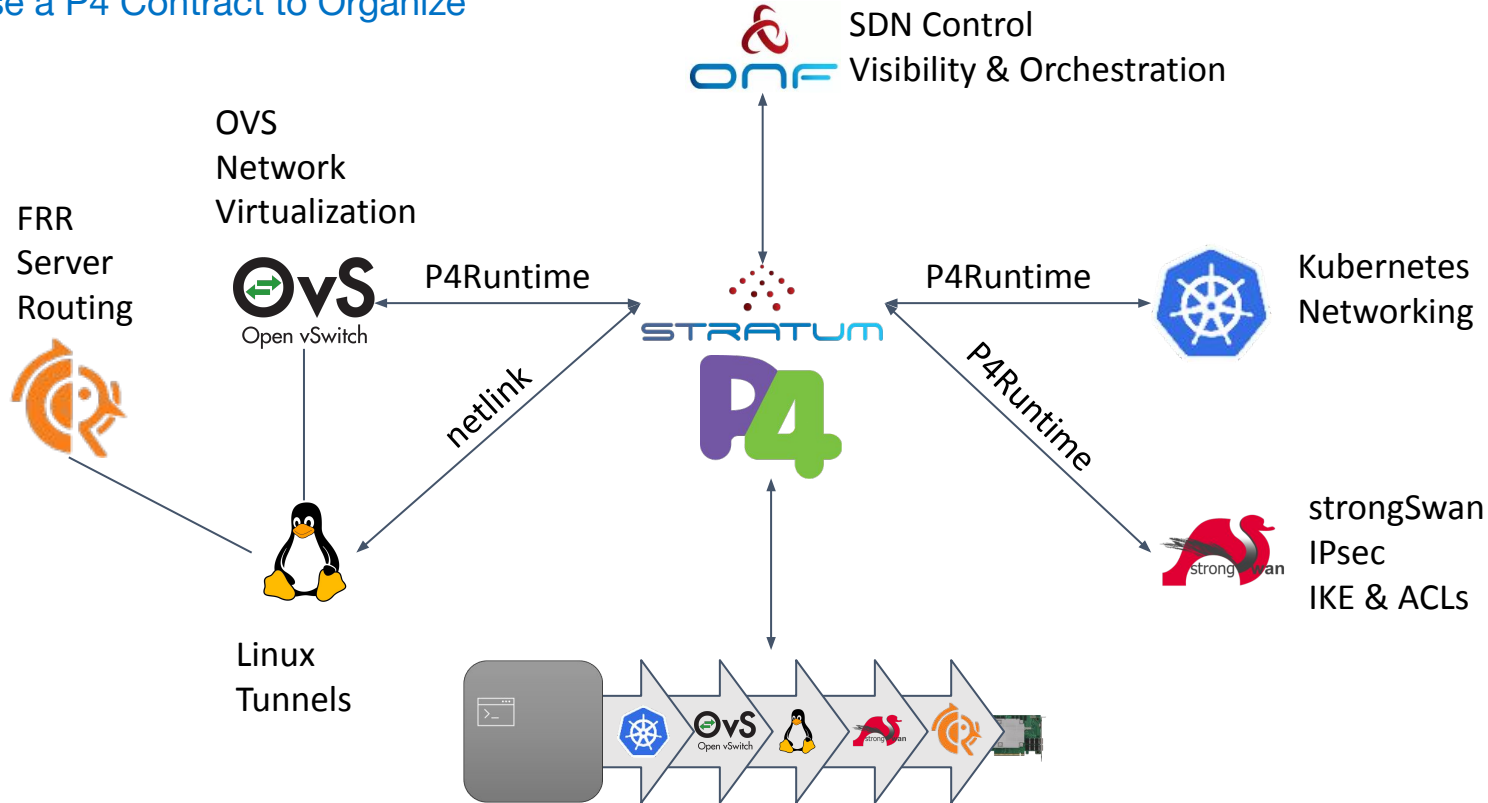
Add OVS into a P4 Control Plane



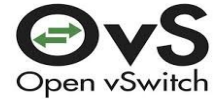
# Independent Control Planes



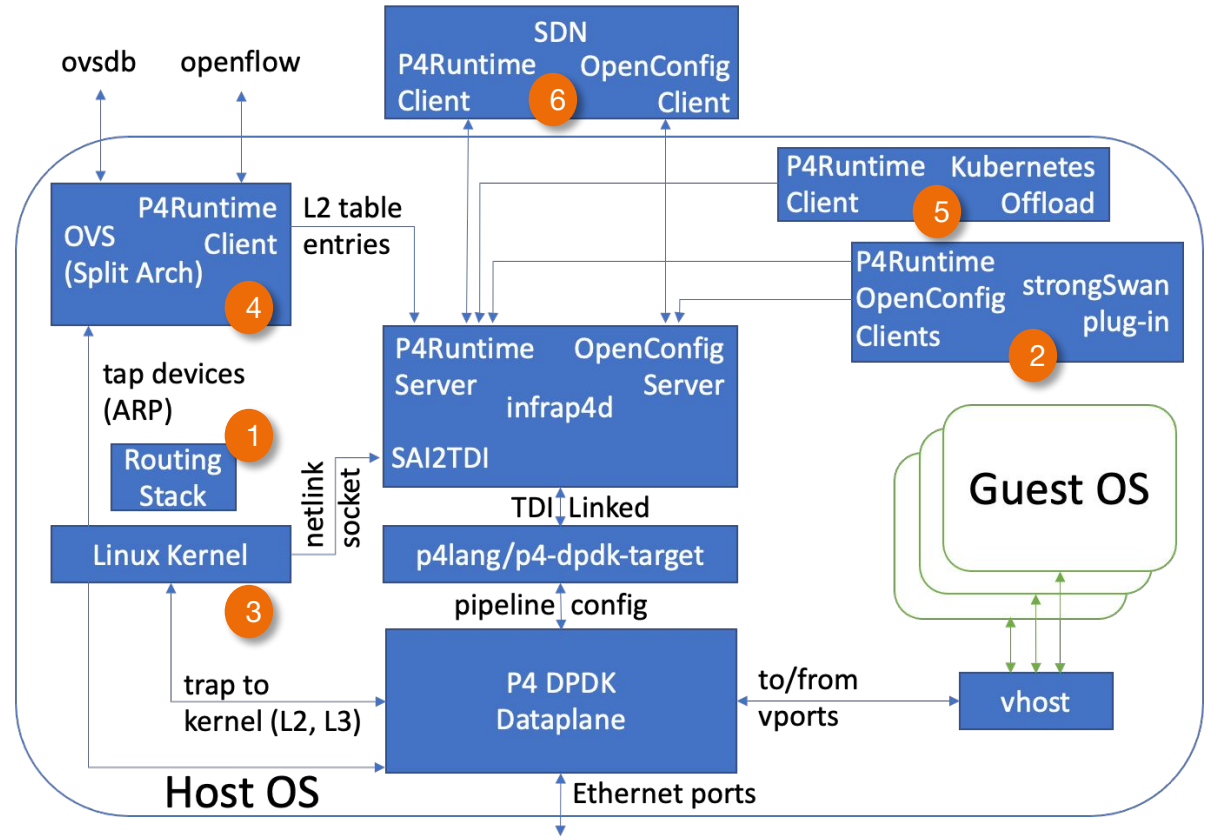
Use a P4 Contract to Organize



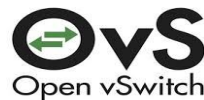
# Example: K8s + OVS + IPsec



1. FRR running BGP
2. strongSwan IPsec
3. Linux VXLAN
4. OVS Virtual L2
5. Kubernetes LB, Policy
6. SDN for Monitoring & Debug



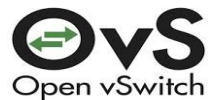
# OVS Using P4Runtime



Recap from Earlier Presentation:

- Existing Dataplanes Preserved
- P4Runtime ops added when OpenFlow is used (e.g., adding L2 entries)
- Optional Acceleration of OVS using a P4 Dataplane Alongside

# Call to Action



Run this today at <https://ipdk.io>

Runs on software & hardware targets

Solves Complex Use Cases w/ Existing Control Planes

Coprocessor model to add 'alongside' option



Thank You