The transience of the physical world



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OpenFlow was conceived for use on physical switches



OVS and OVN has been a proving ground for OpenFlow in virtual networks

- Truly distributed architecture
- Secure communication
- Scalable
- Efficient code with small footprint

We've mastered the art of repeatable deployments of complex software



Next frontier is repeatable deployments of networking hardware

- Does that mean teaching the deployment tooling about the quirks of every closed hardware/software ecosystem on the planet?
- Does that mean teaching the deployment tooling about current physical network configuration paradigms? (Generating static configuration)
- Increasing need for integration between workload and physical network (anycast load balancing, liveness detection etc.)

A shift in integration point for inter-vendor compatibility Vendor A Proprietary HW/SW

A shift in integration point for inter-vendor compatibility Linux OpenFlow Standard interfaces to switch hardware

It has already begun



Comparison of pertinent OF controller characteristics

	Language	Database / Message engine	DB Clustering algorithm	DB Scale Out	CMS API	Distributed by design (OF controller on each switch/chassis)
OVN	С	OVSDB	RAFT	OVSDB Relay	OVSDB	\checkmark
ODL	Java	MD-SAL	RAFT + Gossip	RPC	REST	×
ONOS	Java	Atomix	RAFT	?	REST	X
Faucet	Python	YAML	N/A	N/A	N/A	×

Why is **distributing** the OF controller so important?

actions=controller \leftarrow makes the OF controller a run time critical data plane component

Switch operation depends on having flow tables (re-)programmed, local OF controller widens the options of how to reinstate the configuration in the event of a partial outage

Bare metal provisioning systems look alot like the CMSs we're used to work with

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Thank you. Questions?

Let's discuss! To: <u>ovs-discuss@openvswitch.org</u> Cc: <u>frode.nordahl@canonical.com</u>