

Fabric: A Retrospective on Evolving SDN

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with

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Ideal Network Design

Hardware

Simple

Vendor-neutral

Future-proof

Software

Flexible

Information Flow → Interfaces → Modularity

Any control information passed between **system entities** provides hint at an interface:

Hosts express their destination and QoS requirements for the **network**.

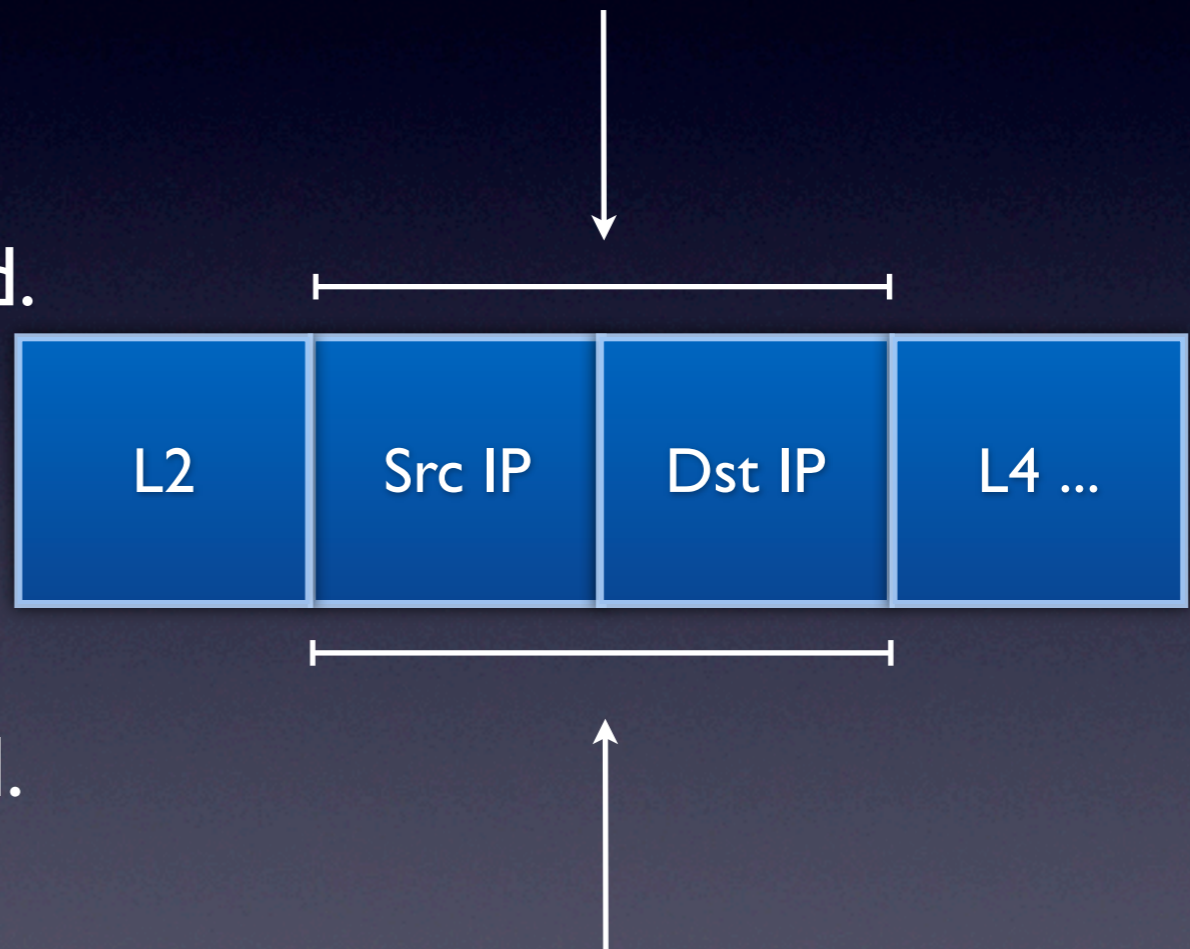
Switches look into **packet** headers and forward based on the above requirements.

Operators express TE, security, ..., requirements for the **network**.

Interfaces in IP

Interface for host

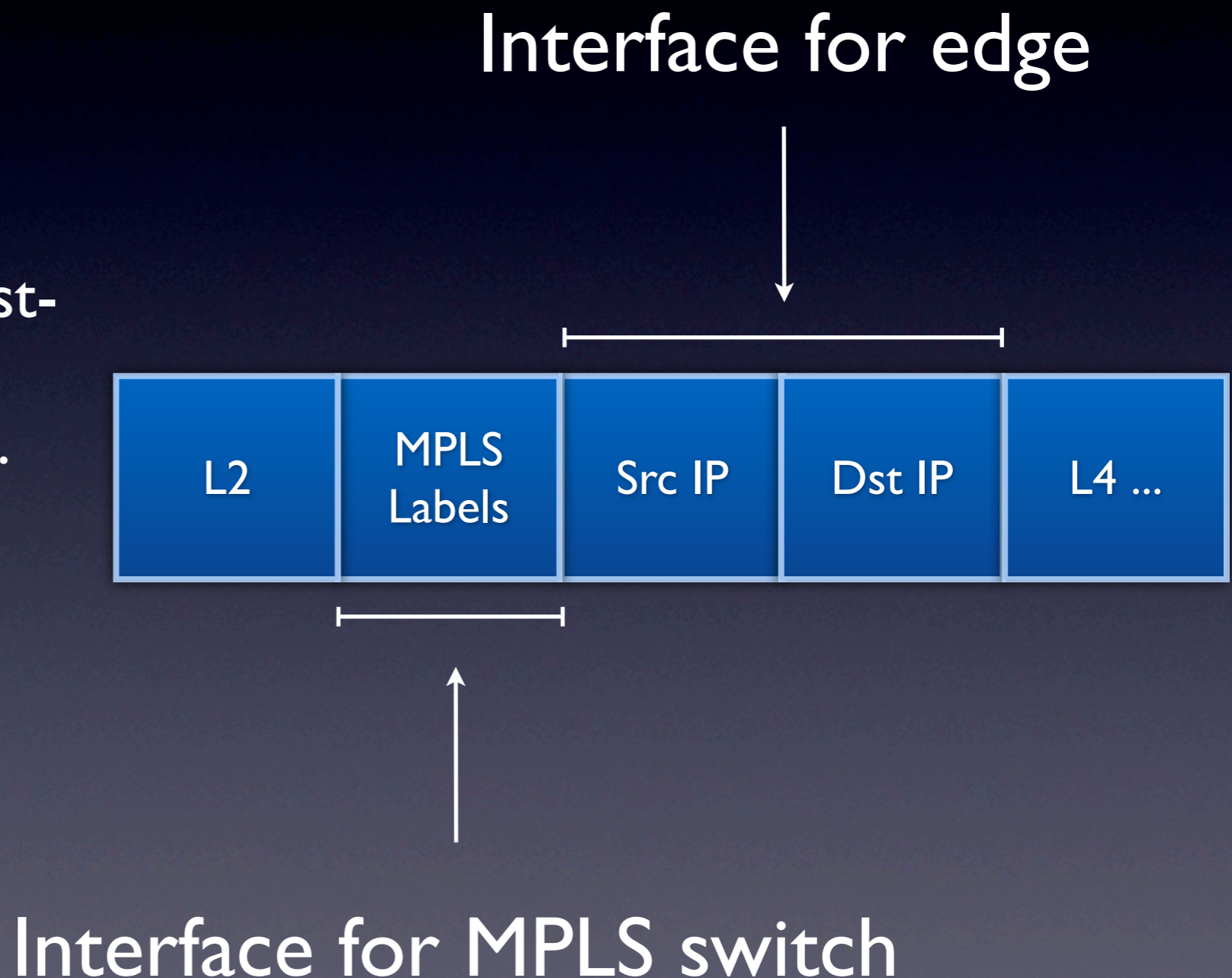
- Host-network and packet-switch interfaces are conflated.
- Minimal operator-network interface.
- Routing protocol does it all.



Interface for network (IP router)

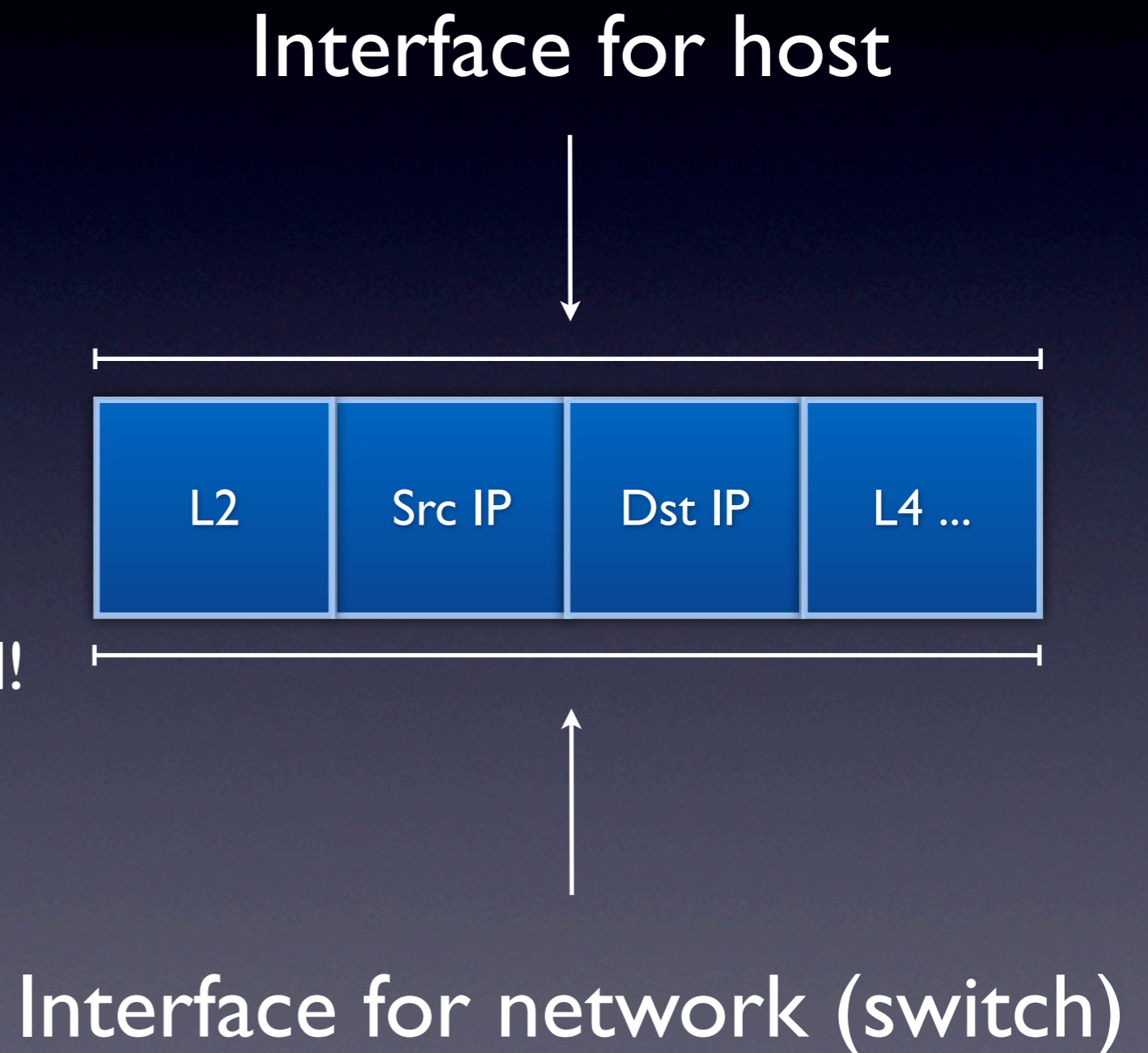
Interfaces in MPLS

- MPLS separates the host-network interface from packet-switch interface.
- No general network-operator interface!

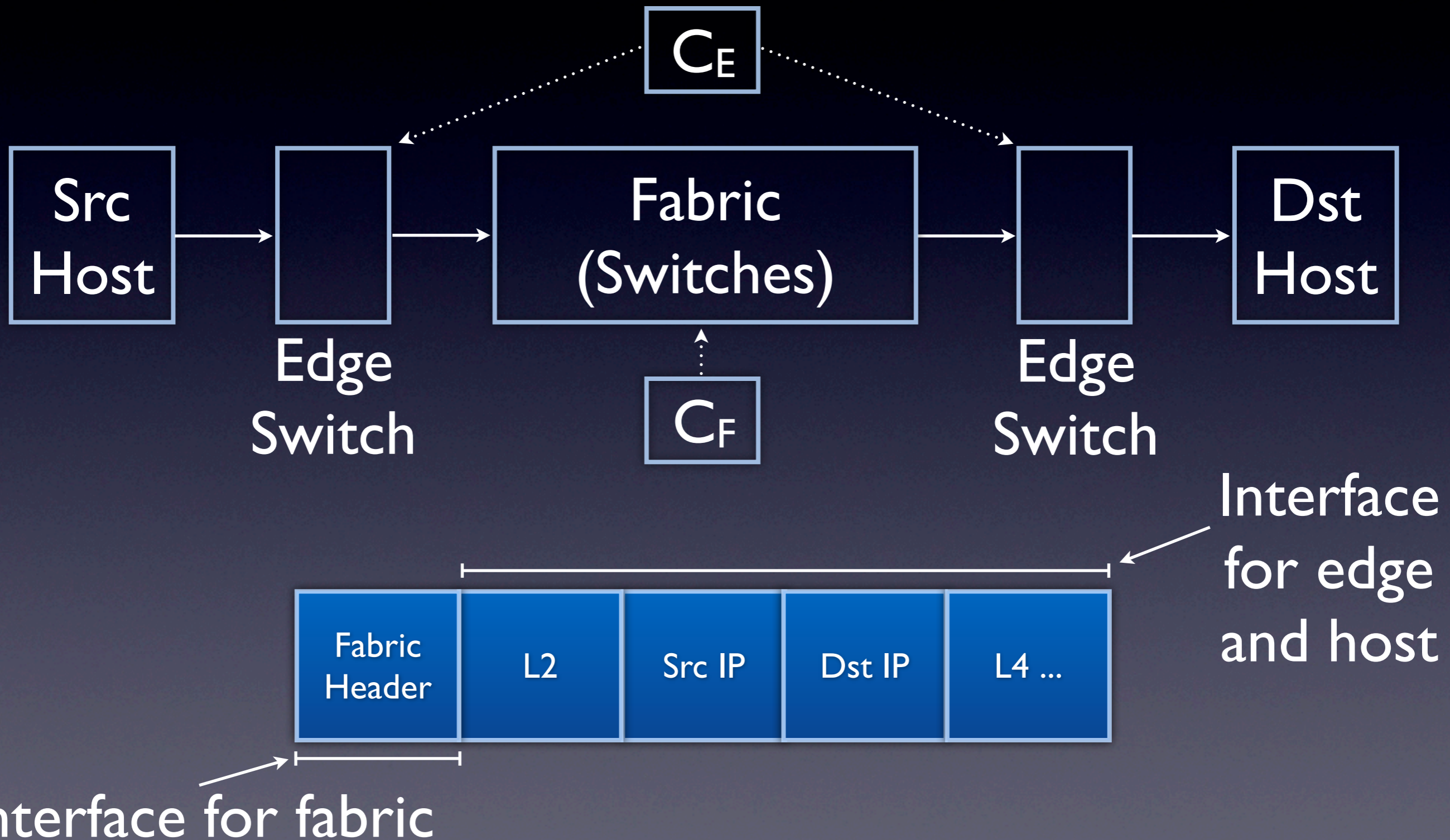


Interfaces in OpenFlow

- SDN provides programmatic network-operator interface.
- Host-network interface are packet-switch again conflated!



Introducing Fabric to SDN



Questions & Implications

<p>Isn't this just protocol layering?</p>	<p>Layering provides no decoupling between elements but only between layers.</p>
<p>What are the implications for OpenFlow?</p>	<p>Edge and fabric versions of OpenFlow?</p>
<p>And more general implications?</p>	<p>Fabrics combined with edge software switching allows for architectural evolution!</p>

Thanks!

Questions?