# OPEN OVERLAY ROUTER

openoverlayrouter.org

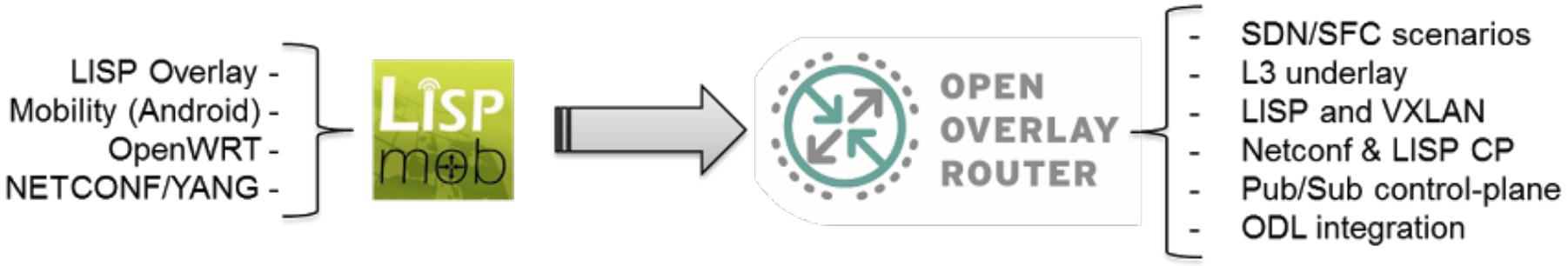
Albert Cabellos

IETF 95 – Buenos Aires

April 2016

# What is OPEN OVERLAY ROUTER ?

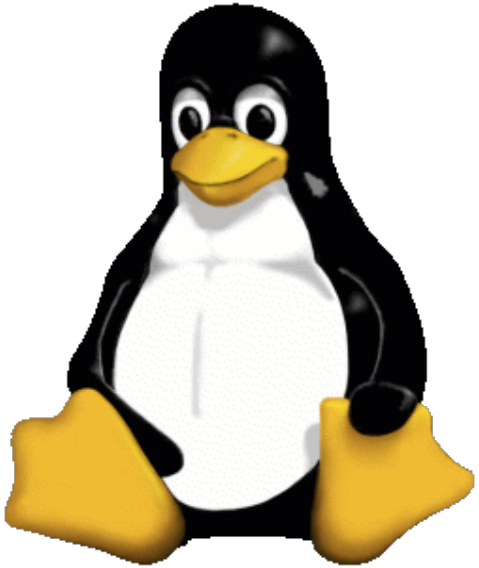
- Open Overlay Router (OOR) is an open source implementation to create programmable overlay networks
- A rename of LISPmob
- Apache 2.0 license




# : Features

- Mature LISP implementation
- xTR, LISP-MN, MR/MS and RTR
- Integrated with OpenDayLight (LISPFlowMappings)
- Interoperable with OpenLISP, lispers.net and Cisco
- Control Planes:
  - LISP
  - Netconf/YANG
- Data Planes
  - LISP
  - VXLAN-GPE

# OPEN OVERLAY ROUTER: Platforms

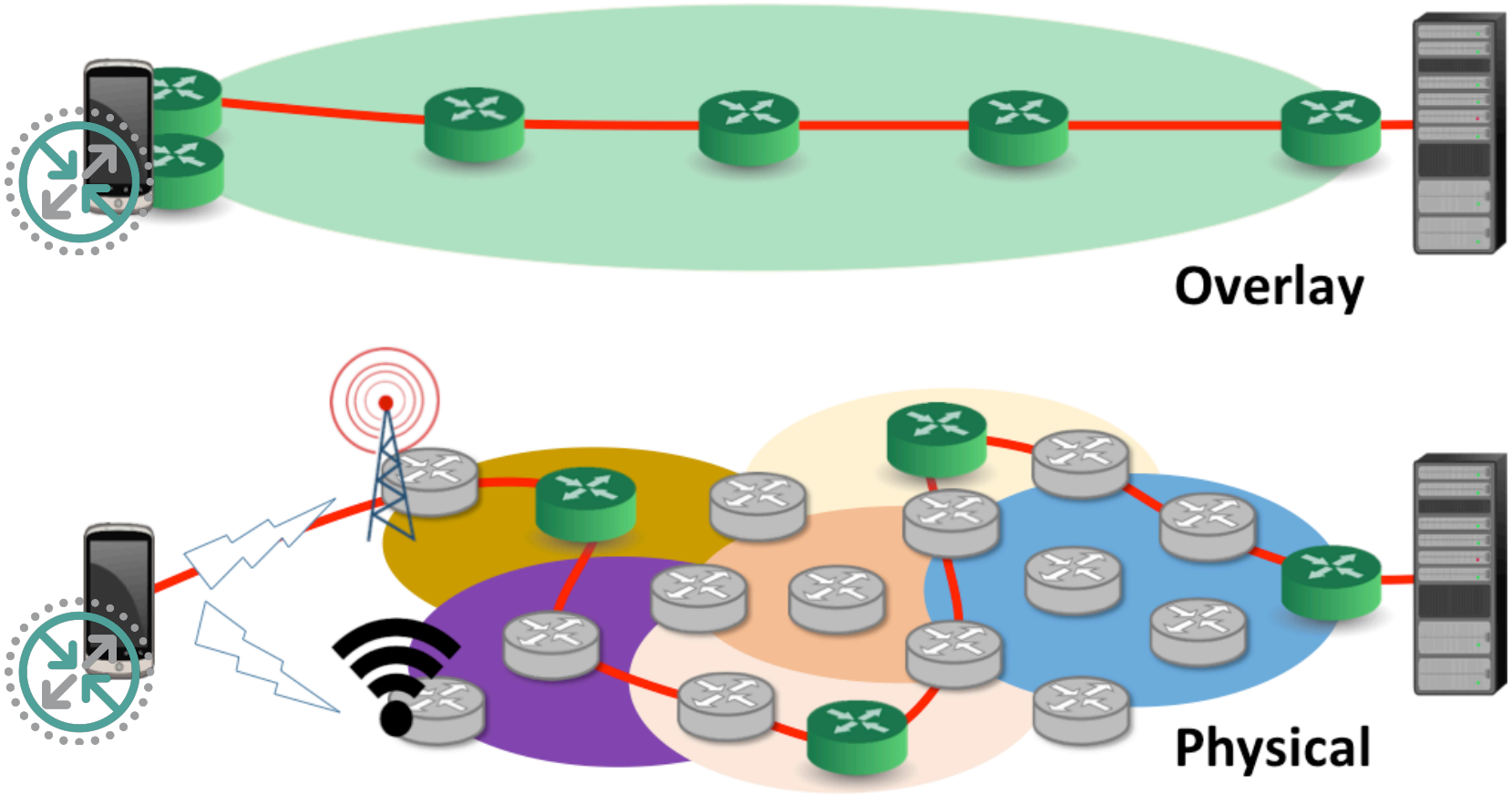


Linux

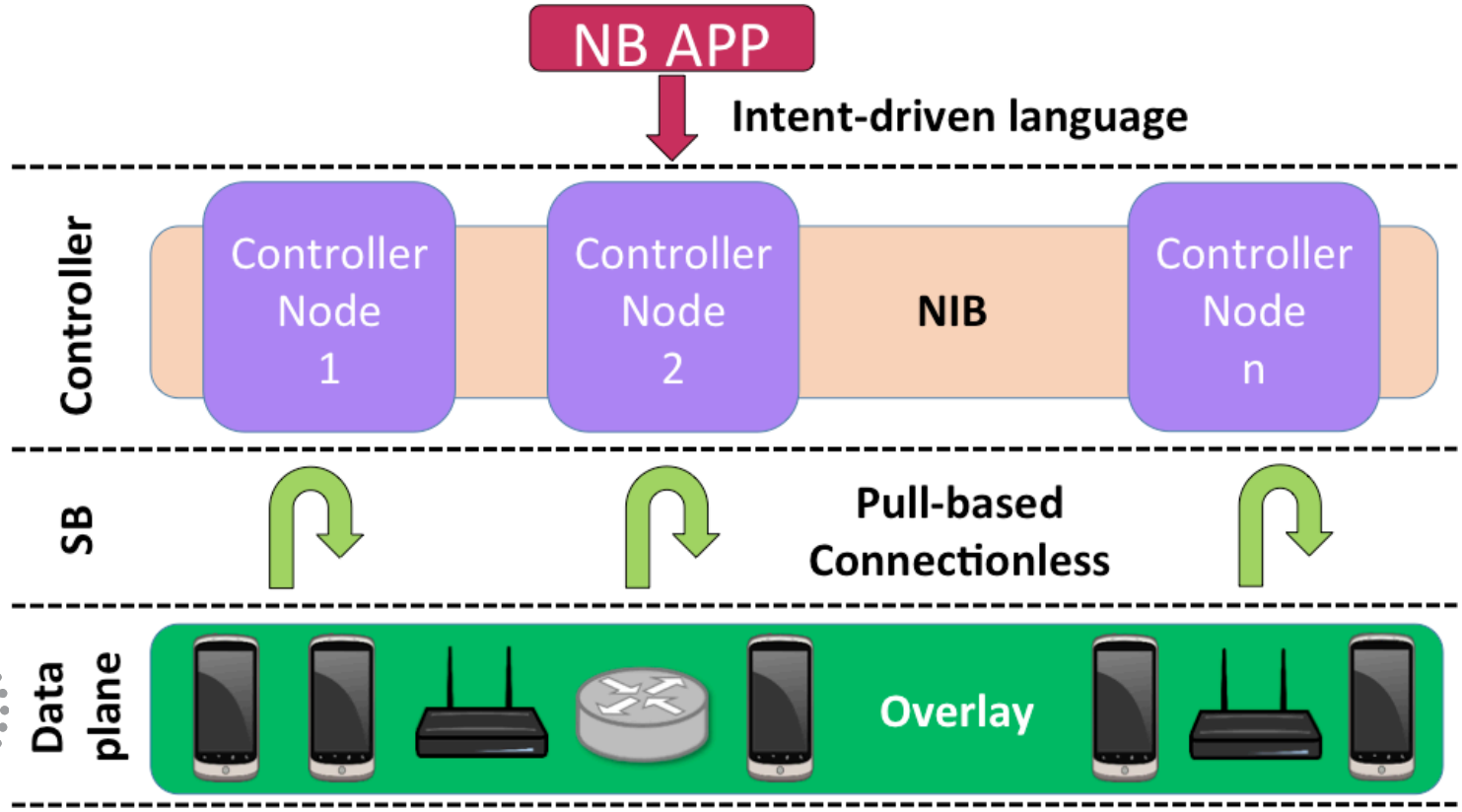

Android


OpenWRT

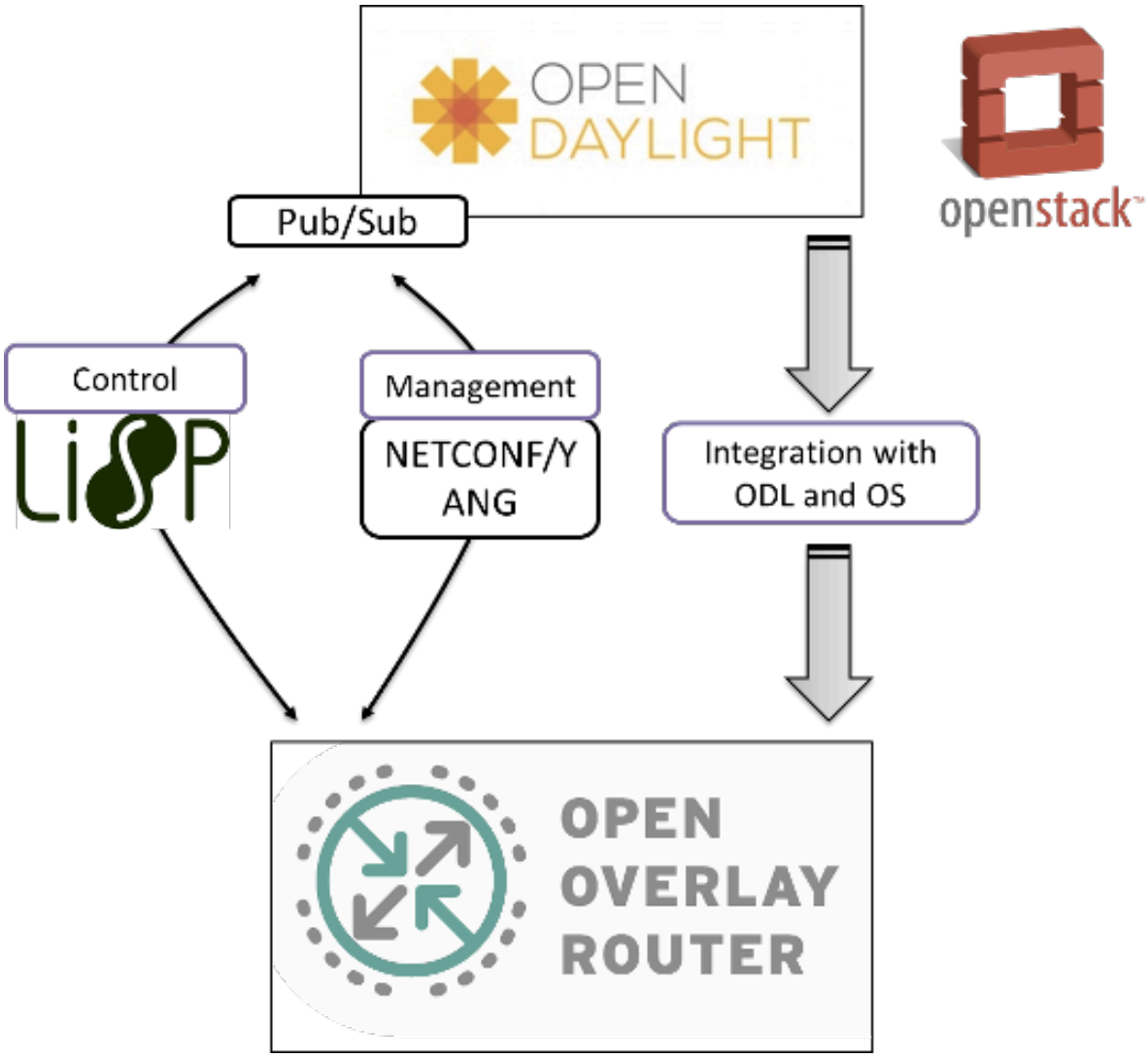
# OPEN OVERLAY ROUTER: A key tool for **edge** overlays/SDN



# OPEN OVERLAY ROUTER: A key tool for **edge** overlays/SDN



# OPEN OVERLAY ROUTER : SDN/NFV Scenarios



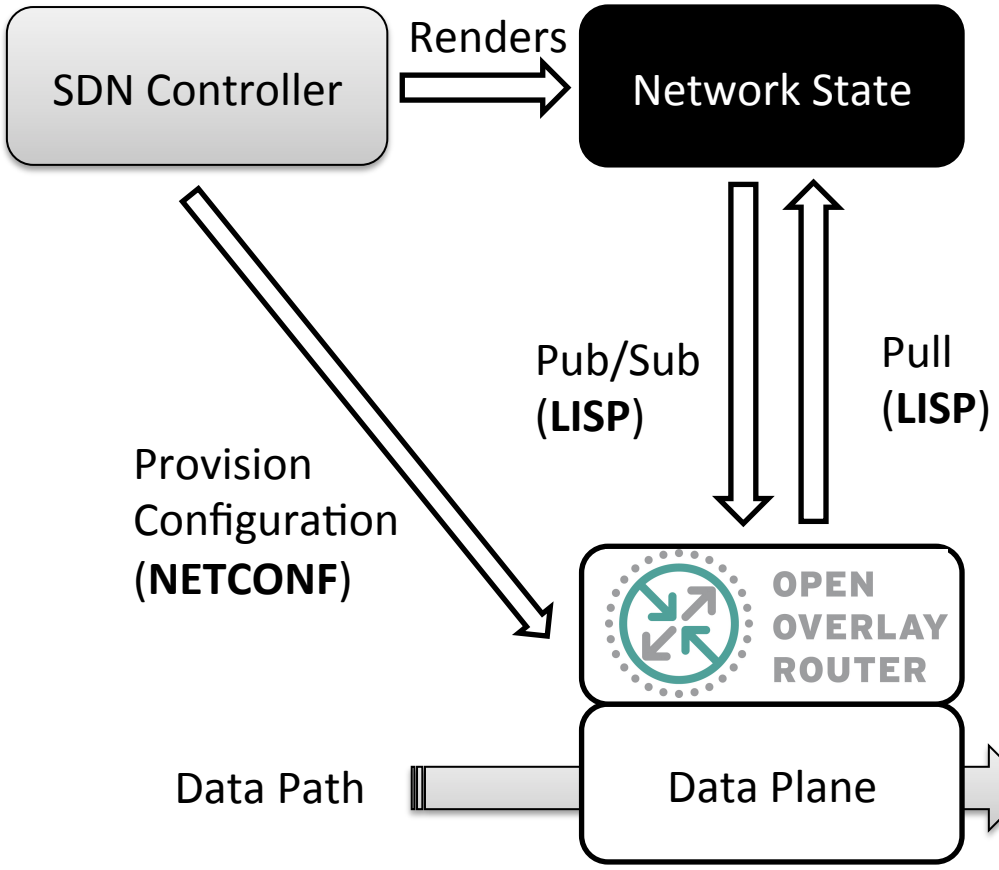

# : Open Roadmap

- An overlay router **is not** a traditional router
- An overlay interface is identified by an **encapsulation** and a **physical interface**
- Forward packets based on different fields (e.g, {SPI, SI} or {5-tuple}), not just **destination address**

# OPEN OVERLAY ROUTER: Configuration

- eth0
  - NSH → {SPI, SI}
  - VXLAN-GPE → {5-tuple}
  - LISP → {dst_addr}
  - Default → {dst_addr}
- eth1
  - No-encap → {dst_addr}
  - Default → {5-tuple}

# OPEN OVERLAY ROUTER : Architecture




NIB
- Hierarchial structure (tree) of mappings
- Flexible data types
- Each leaf is a (set of) RLOCs + ENCAP

RIB
- Data-triggered cache of the NIB
- Resolves to the FIB

FIB
- (set of) flows → RLOC + ENCAP

# Conclusions

- Open Overlay Router is an open-source implementation to create programmable network overlays
- More data and control-planes under development
- Future work:
  - Flexible LCAF language
  - How do you know that your reply is a leaf (RLOC +ENCAP)?
  - Pub/Sub mechanism