What is OOR?

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

Linux

Android

OpenWRT
A key tool for **edge** overlays/SDN
A key tool for edge overlays/SDN
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
• **eth0**
  - NSH ➔ {SPI, SI}
  - VXLAN-GPE ➔ {5-tuple}
  - LISP ➔ {dst_addr}
  - Default ➔ {dst_addr}

• **eth1**
  - No-encap ➔ {dst_addr}
  - Default ➔ {5-tuple}
Data Plane Architecture

- **SDN Controller**
- **Network State**
- **Pub/Sub (LISP)**
- **Pull (LISP)**
- **Provision Configuration (NETCONF)**
- **Data Path**
- **Data Plane**
- **RIB**
- **FIB**
- **NIB**

- Hierarchical structure (tree) of mappings
- Flexible data types
- Each leaf is a (set of) RLOCs + ENCAP
- Data-triggered cache of the NIB
- Resolves to the FIB
- (set of) flows \(\rightarrow\) 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