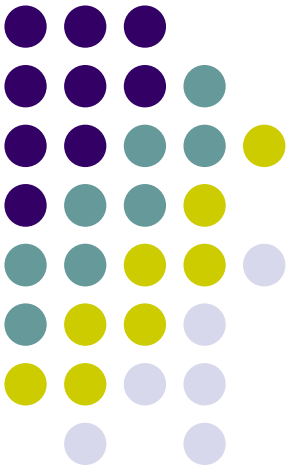
Distributed Mobility Management Protocol for WiFi Users in Fixed Network

Behcet Sarikaya(sarikaya@ieee.org)
Li Xue (xueli@huawei.com)

IETF 90



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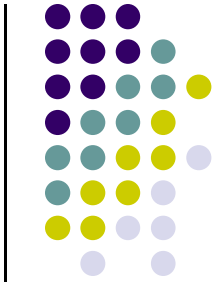
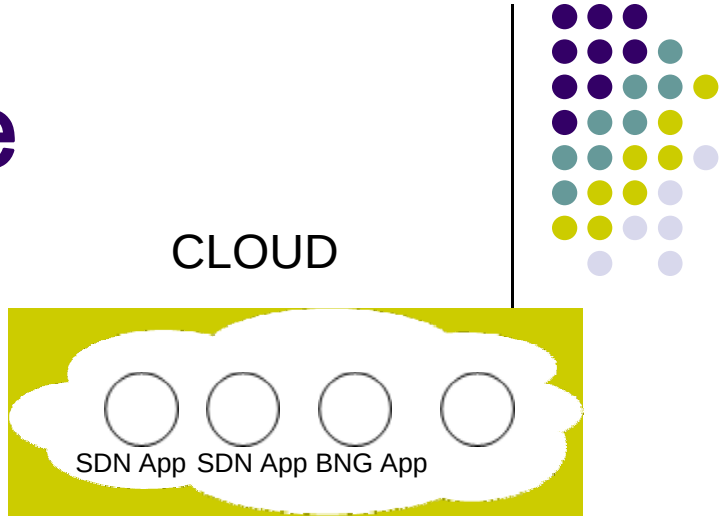
DMM for Wi-Fi

Motivation



- Wi-Fi access is ubiquitous
- Currently Wi-Fi is transported over fixed network
- No mobility, especially no IP mobility is defined for Wi-Fi
- vEPC is 3GPP centric
- Need for new stuff like SDN and NFV

DMM4WiFi Architecture

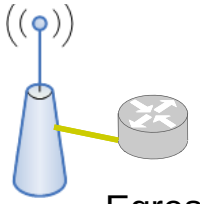


Layer 2 Mobility

Mobility Table	
MN IP Address	RG MAC Address

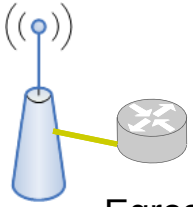
SDN Controller

Ingress switch



Egress switch

Track MN mobility and modify closest UGW
Calculate shortest path to closest UGW



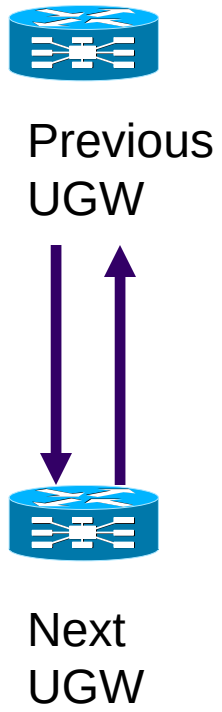
Egress switch

Ingress switch

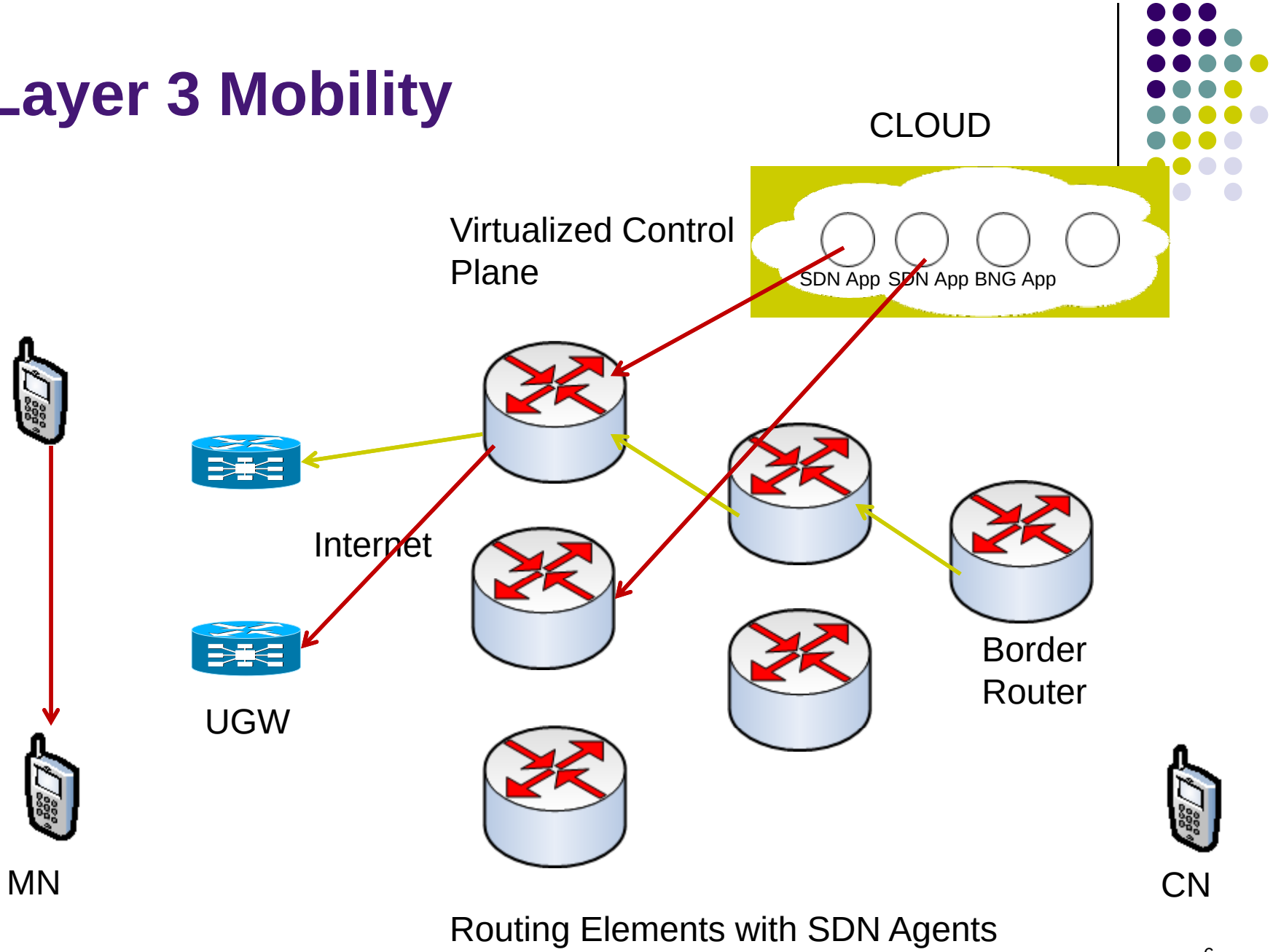
UGW

Layer 3 Mobility

- Simple handover signaling can be used adopted from RFC 5949
- Predictive handover case, PUGW sends HI message
  - NUGW replies with Hack
- Reactive handover case, NUGW sends HI message
  - PUGW replies with Hack
- Possibility of tunneling any outstanding data

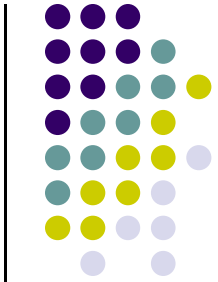


Layer 3 Mobility



Routing Elements with SDN Agents

Conclusions



- Extends vEPC to fixed network for Wi-Fi mobility
- Effective use of Network Function Virtualization (NFV) and Software-Defined Networking (SDN)
- Unifying fixed network and mobile network