

# IP Traffic Offload Option for Proxy Mobile IPv6

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draft-gundavelli-netext-pmipv6-sipto-option-01.txt

# Motivation

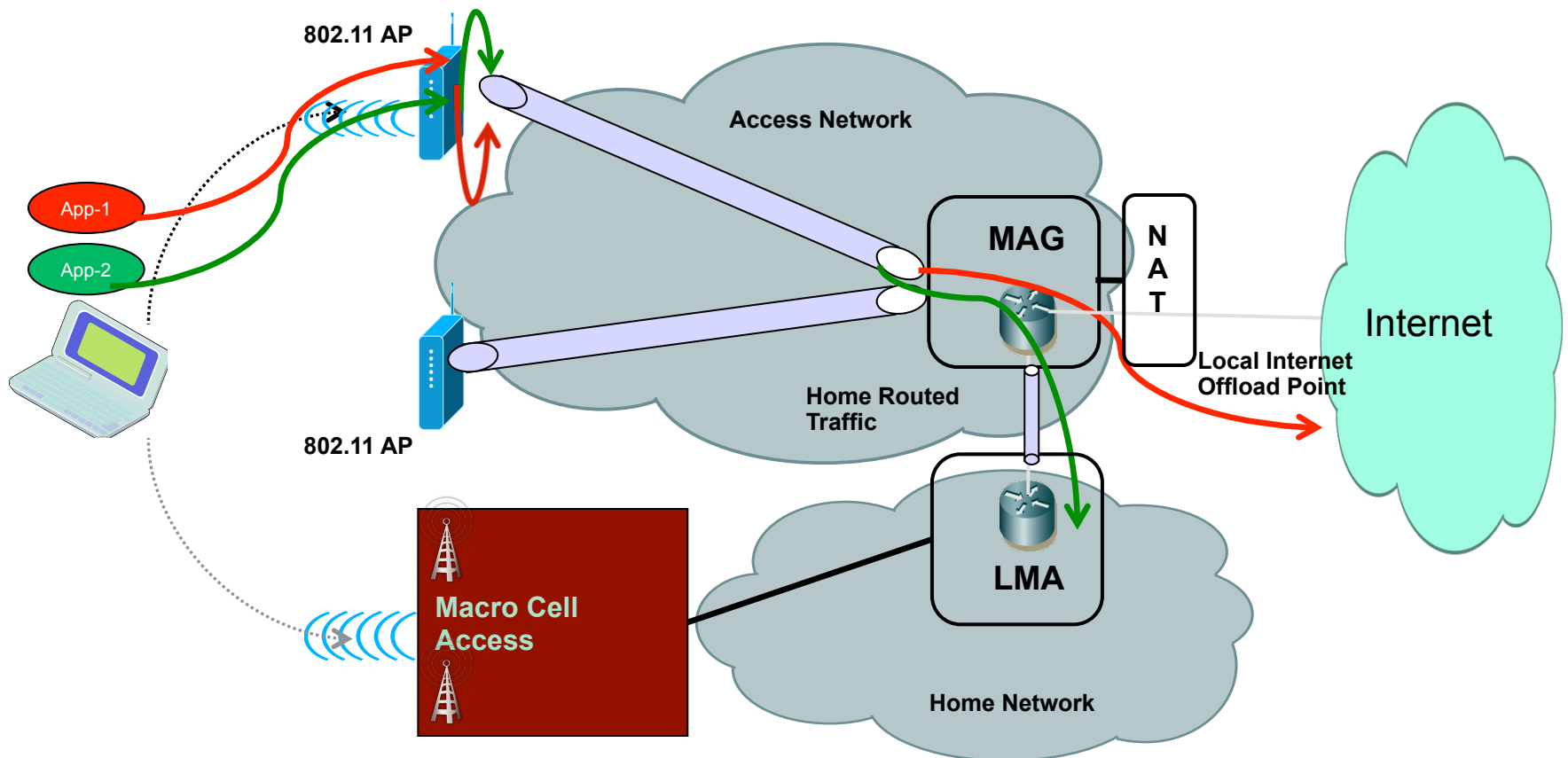
- In Proxy Mobile IPv6, the IPv4 home address delivered to a mobile node is anchored on the local mobility anchor in the home network.
- All the IP traffic from the mobile node using this IPv4 address, is always reverse tunneled by the mobile access gateway in the access network to the home network.
- With the exponential growth in the mobile data traffic, mobile operators are exploring new ways to offload some of the IP traffic flows at the nearest access edge where ever there is an internet peering point, as supposed to carrying them all the way back to the home network.

# Motivation (Contd..)

- Not all IP traffic needs to be routed back to the home network, some of the non-essential IP traffic which does not require IP mobility support can be offloaded at the mobile access gateway in the access network.
- This approach provides greater leverage and efficient usage of the mobile packet core with increased overall network capacity and by lowering transport costs.
- The local mobility anchor in the home network can potentially deliver the IP flow selectors to the mobile access gateway in the access network, for selecting the IP flows that needs to be offloaded.

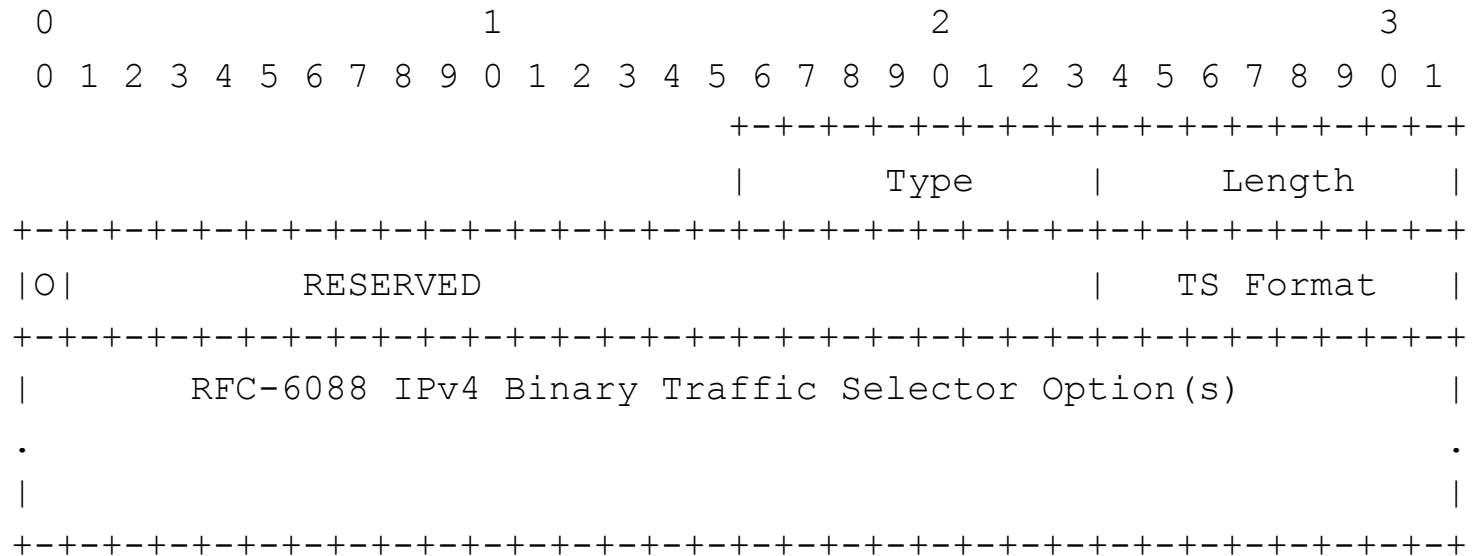
# IP Traffic Offload Support

- The ability to offload “certain” IP flows at the MAG. Or, the inverse capability supporting “Except” offload rule”.



# IP Traffic Offload Selector Option

The Offload traffic selector sub-option carried in PMIPv6 signaling includes the parameters used to match packets for offload/upload:



1. The Sub-Type identifies the Offload Traffic Selector Option
2. The “O” Flag identifies the offload/upload direction
3. This option can be present in PBU/PBA messages

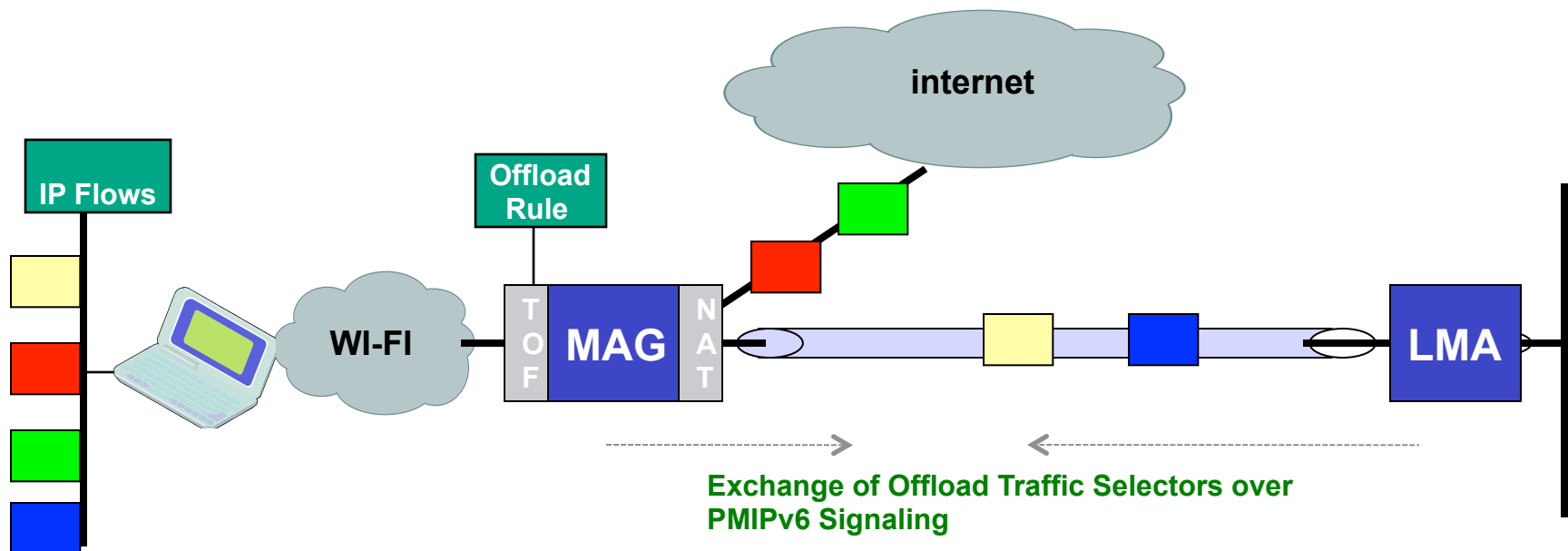
# Traffic Offload Granularity

- The select rules for offload/upload traffic can be scoped at different levels. However, in practical terms only few options make sense and can be supported

Filter	Scope
Destination Prefix	Operator value added services
IP Flow Tuple	src/dst address, src/dest port
Application Granularity	Application identifiers (Dest Port or IP Address)
Access Network Identifiers	802.11 SSID
APN (PDN Identifier)	With single APN support for WLAN access, not an option for IPv4
{ Except-Offload-All Rule }	The approach of VPN Split Tunneling

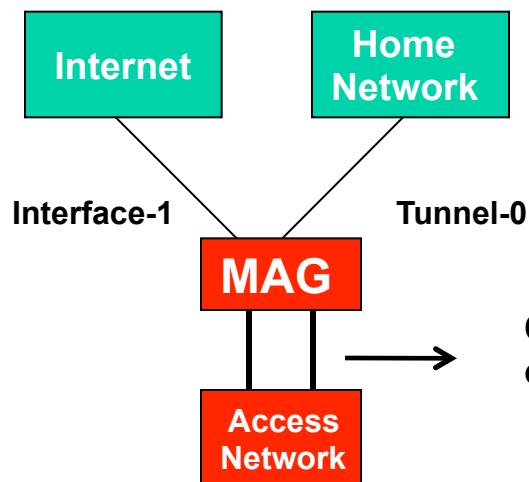
# IP Traffic Offload Selector for PMIPv6

- The IP Traffic offload selector option is exchanged between the MAG and LMA as a mobility option over PMIPv6
- The mobility option container will leverage the RFC-6088 option formats, IPv4 binary traffic selector option will identify the flow selectors.



# Offload Policy Enforcement on MAG

- The offload policy is applied on the input interface of the MAG in the access network
- The output interface for each IP flow from the mobile node, if its towards internet or home network is based on the policy



Flow Selector	Input Interface	Output Interface
F1	VLAN-0	→ Tunnel-0
F2	VLAN-1	→ Interface-1

Offload policy Enforced on input interfaces



# Thank You

