Problem Statement

FMC BoF at IETF 85

draft-xue-intarea-fmc-ps-02

November 6, 2012, Atlanta, US
Our Scenarios

Operators Service & Internet

- VPN Service
- Game/Video (Skype etc.)
- Remote education
- Cloud
- VoD or Live video

Within coverage area, the internet, VPN or operator’s service must be guaranteed

- High BW guaranteed for smartphone
- QoS and BW adjustable based on the traffic status;

Internet/Meeting, etc

Hot Spot

Cellular

WiFi

Cellular

WiFi

Fixed

Internet service

Internet/Meeting, etc

Home

HD Video/QQ/MSN/Game
Our Architecture

Cellular
- E-UTRAN
- UTRAN
- GERAN

Core Network
- Operator's Service
- Policy Control

Fixed Network
- BPCF
- IP Edge
- BBF AAA

Internet

Public WiFi

RG NAT
Problem Statement Use Case 1 – Why Group ID?

- Service Quality (QoS) for subscriber should be guaranteed, no matter which type of device, so we need to bind all the devices belonging to one subscriber to one group
- All the devices belonging to one subscriber should be charging as one bill
- Application switching among different devices belonging to one group
Application for Use Case 1-Uniform Policy Control

Application: Bandwidth sharing, Application mobility, etc.
Use Case 1 – Protocol Issues

- IP edge is the policy enforcement point for FMC architecture.
- To enforcement policy, the first thing is to recognize the traffic, which means to base on the IP packet, the IP edge should enforce right policy for special group.
- We need to transmit the group ID using IP layer protocols
Use Case 1 – Solution Approaches

• Embed Group Identifier in network layer, so that different nodes in the network can make use of it.
  – Subscriber/Group ID can be transmitted in IP layers as option IPv4 header or IPv6 header
  – ICMP can be used
  – UDP can be used

• Protocol work in IETF is needed.
Problem Statement Use Case 2 - UE mobility in IP network

Issues:
- Fixed network does not track devices
- Devices connected to Wi-Fi come and go, so their status must be tracked
- Mobility tracking should be enabled in hot spot or home WiFi access network
Application for Use Case 2 – Resource management

The IP edge router should adjust the load in the network for the roaming devices.
Use Case 2 – Protocol Issues

- Fixed IP network edge routers need to signaling protocol to report the connectivity status of the devices;
- Access points need to transmit the status via protocols
Use Case 2 – Solution Approaches

• New extension based on CAPWAP.
  – Connectivity status transmitted via protocols such as CAPWAP.
  – New signaling protocol.

• Protocol work in IETF is needed.
Thank You