

# Passing Mobile Subscription Info over DHCP and RA

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# Problem Statement

- It is common for mobile device (UA) to switch between WiFi and MN
- In an environment where the WiFi network and MN network are the same provider, and the WiFi network uses simple PSK authentication rather than EAP-SIM or WPA-Enterprise, the network operator will want to get the active mobile subscription associated to the UA to provide service continuity and/or enhanced experience.

# Mobile-Sub-Info Option

- Define a new option “Mobile-Sub-Info” in DHCP, DHCPv6 and RA.
- The option contains a network URI.
- Client can use the URI to exchange its Mobile Subscription Info
- The actual exchange is over HTTPS which is outside of the DHCP, DHCPv6 and RA process

# Use Case Assumptions

- UA roams from MN to WiFi (e.g., home WiFi)
- UA uses simple PSK for authentication
- In IPv4 environment, DHCPv4 option will be used.
- In IPv6 environment, both DHCPv6 and RA options will be used.
- The mechanism mimics the Captive-Portal Identification in DHCP and Router Advertisements (RAs) defined in RFC 8910.

# IPv4-only Client Behavior

- Client supports this option should include “Mobile-Sub-Info” in the option in the Parameter Request List in DHCPREQUEST message.
- Server may send the “Mobile-Sub-Info” in the DHCP ACK w/o client explicitly requesting.
- Client doesn’t support or its policy dictates not to share the info may simply ignore the URI.
- Client that supports the exchange may initiate the exchange process over HTTPS with URI.
- We propose to use EAP-AKA over HTTPS to exchange the mobile subscription info.

# DHCP Server Behavior

- Server that supports “Mobile-Sub-Info” must include a URI in the DHCP ACK while receiving a DHCPREQUEST with the option in the Parameter Request List.
- Server “may” include the URI w/o the option in the DHCPREQUEST.

# IPv6 Client Behavior

- Client supports this option should include “Mobile-Sub-Info” in the option in DHCPv6 SOLICIT message.
- Upon receiving the URI in REPLY, Client that supports the option may initiate the exchange process over HTTPS with the URI.
- We propose to use EAP-AKA over HTTPS to exchange the mobile subscription info.

# DHCPv6 Server Behavior

- Server that supports “Mobile-Sub-Info” must include a URI in the ADVERTISE and REPLY while receiving ” Mobile-Sub-Info” option in the SOLICIT.



# RA Behavior

- Server supports “Mobile-Sub-Info” must include “Mobile-Sub-Info” in the RA.
- Client that supports “Mobile-Sub-Info” may initiate the exchange process over HTTPS with the URI.
- We propose to use EAP-AKA over HTTPS to exchange the mobile subscription info.

# Some Considerations

- Multiple SIM Subscriptions
  - Client must use the active data “SIM” subscription for the exchange.
- URI Consistency
  - Network may support all three methods. It highly recommends to use the same URI to avoid any ambiguity.

# Open Area

- Questions?
- Next Step?