

draft-liu-dmm-mobility-api-01
draft-liu-sdn-mobility-00

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draft-liu-dmm-mobility-api-01

- Was presented in IETF#83
- Changes from last version
 - Intended status:
 - Informational -> Standards Track
 - Updates: 5014 (if approved)
 - Add references
 - I-D.draft-korhonen-6man-prefix-properties
 - I-D.draft-bhandari-hdc-class-based-prefix-04
 - Add usage examples

Background-RFC5014

- RFC 5014 defines socket API extension used for source address selection. Application can use this API to override the default source address selection mechanism for IPv6.
- Currently, RFC 5014 defines the following type of source address selection preference:
 - `IPV6_PREFER_SRC_HOME` /* Prefer Home address as source */
 - `IPV6_PREFER_SRC_COA` /* Prefer Care-of address as source */
 - `IPV6_PREFER_SRC_TMP` /* Prefer Temporary address as source */
 - `IPV6_PREFER_SRC_PUBLIC` /* Prefer Public address as source */
 - `IPV6_PREFER_SRC_CGA` /* Prefer CGA address as source */
 - `IPV6_PREFER_SRC_NONCGA` /* Prefer a non-CGA address as source */

Problem and proposal

- In DMM scenario, applications on the MN need to select the proper IP address based on the prefix type
- RFC5014 need to be extended to allow MN in DMM scenario select source address

Extensions of RFC5014

- IPV6_PREFER_SRC_LOCAL_HNP:
 - Prefer to use locally allocated home network prefix.
- IPV6_PREFER_SRC_REMOTE_HNP:
 - Prefer to use the home network prefix that allocated by other access router instead of the one that the MN currently attach.

Usage example

- In DMM scenario, the application on the mobile node can always select the `IPV6_PREFER_SRC_LOCAL_HNP` as the most preferred sourced address.
- The mobile node's operating system need to guarantee that for the on-going session, it will not interrupt the on-going session even there is a new prefix available.

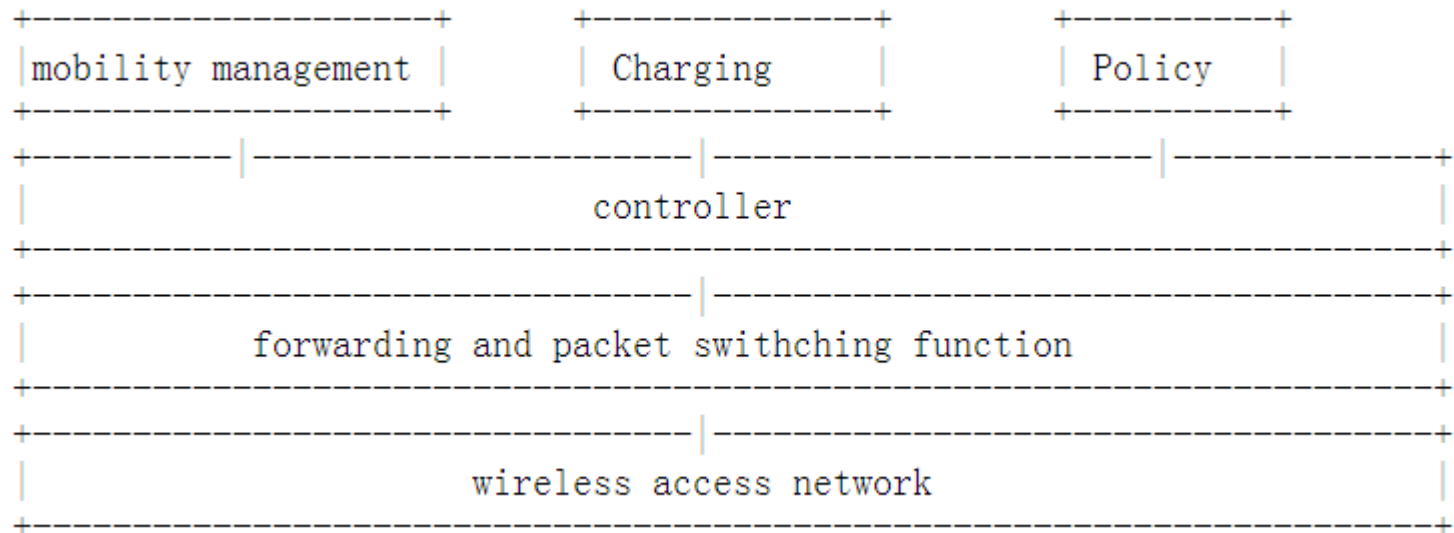
Next Step

- Have interest to work on this?
- Within the scope of DMM?
- Create a work item?

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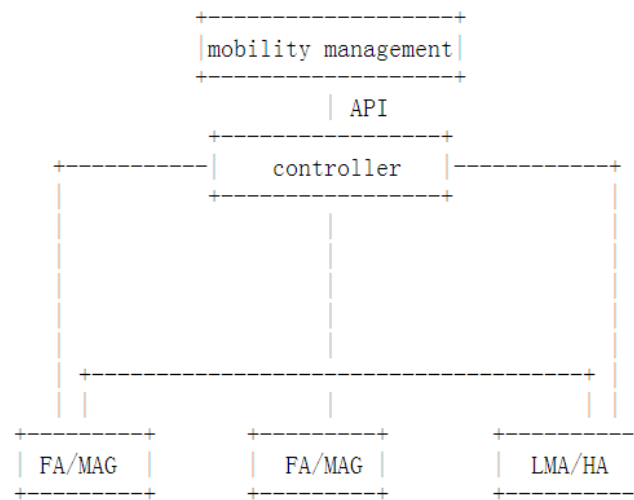
- Motivation
 - There is ongoing research work and discussions of using SDN in cellular network.
 - SDN can provide enough IP packets processing ability for the cellular core network.
 - Mobility support is critical for the cellular core network.
 - If mobility can be supported by SDN, the cellular core network can be significantly simplified. The data plane traffic routing can also be optimized.

Architecture



Potential Solutions

- Enhance SDN to support mobility tunnel handling
 - To support mobility, the mobility management function monitors the mobile node's movement event. When the FA/MAG detects the mobile node's movement, it needs to update the binding cache entry that maybe maintained in the mobility management function. The mobility management function then control the forwarding function(FA/MAG) to do the mobility tunnel processing.



- Routing based SDN mobility support
 - the forwarding function needs to detect the movement event of the mobile node and notify the controller and mobility management function in a timely manner. A routing path needs to be set up from the MAG/FA to the Internet access point in a timely manner.

Next Step

- Any Interest from the group?
- Comments?