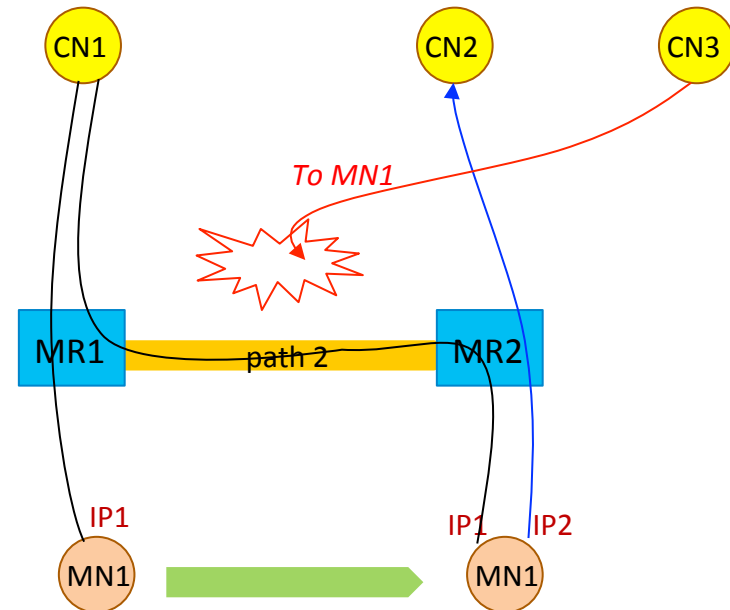


# draft-xiong-dmm-ip-reachability-00

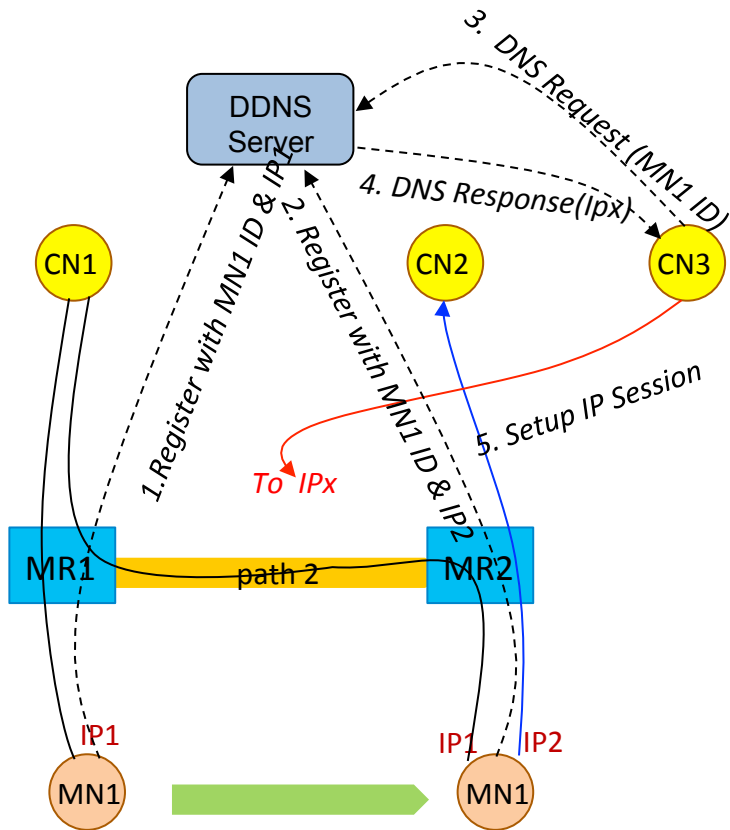
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Huawei Technologies

# MN IP Reachability Problem

If Mobile host has multiple IP address, the CN3 wants to initiate a new IP session with the MN, which/How the MN's IP address is selected? Why ?

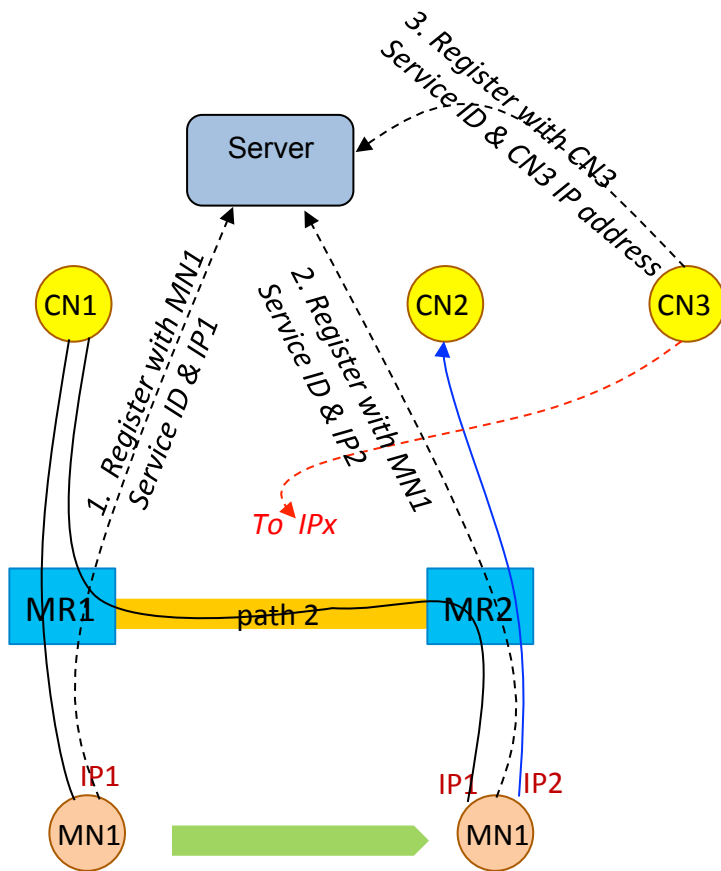


# DDNS Method



- The MN1 has a global unique ID, e.g. FQDN
- When the MN1 gets a new IP address, it can register its new IP address to the DDNS Server with its ID.
- The CN3 wants to setup a new IP session with the MN1, CN3 gets the MN1 IP address from the DDNS Server.
- The CN3 uses the IP address provided by the DDNS Server to setup the IP Session.

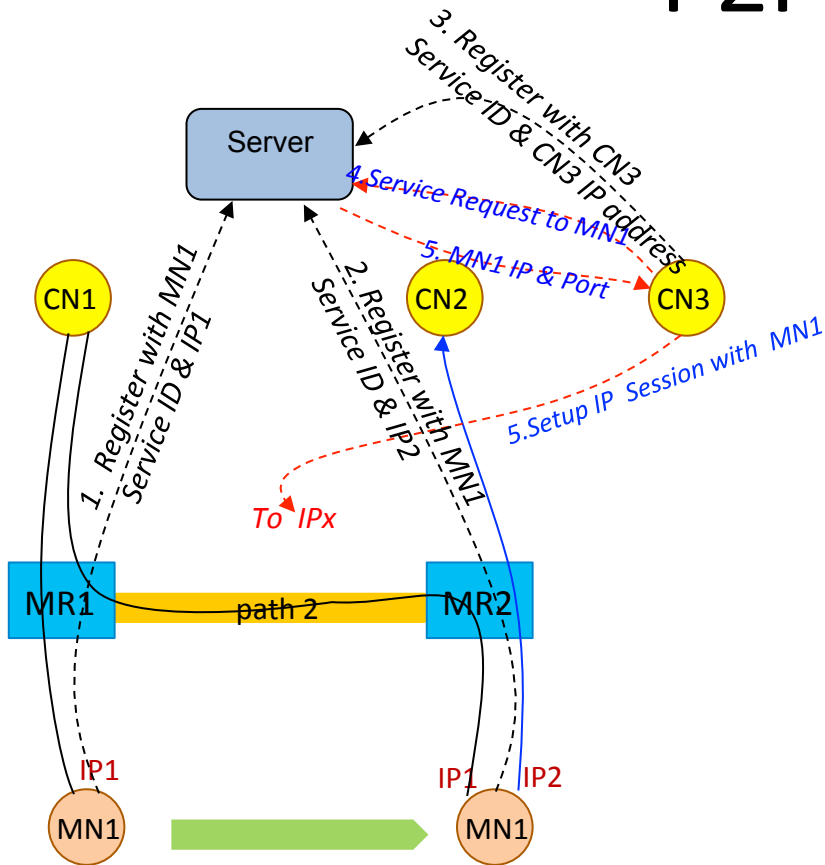
# Server Registration Method



- The MN1 and CN3 register to the same Server for a special service (e.g. MSN Messenger) using its IP address.
- When the MN1 gets a new IP address, it can register its new IP address to the Server.
- If CN3 wants to initiate a service to the MN1, there are 3 modes to setup the IP session:
  - **P2P mode**: After the server provides MN1 IP address and Port information to the CN3, the CN3 directly setup the IP Session with the MN1 without the server involved.
  - **Server Central mode**: For the CN3, the server proxies the MN1, at the same time for the MN1, the server proxies the CN3, the Servers is in the CP/UP path of the IP session between CN3 and MN1;
  - **Combined mode**: The server is only in the path of the signaling path of the IP session between the CN3 and MN1, and the user plane is directly setup between CN3 and MN1.

# Server Registration Method

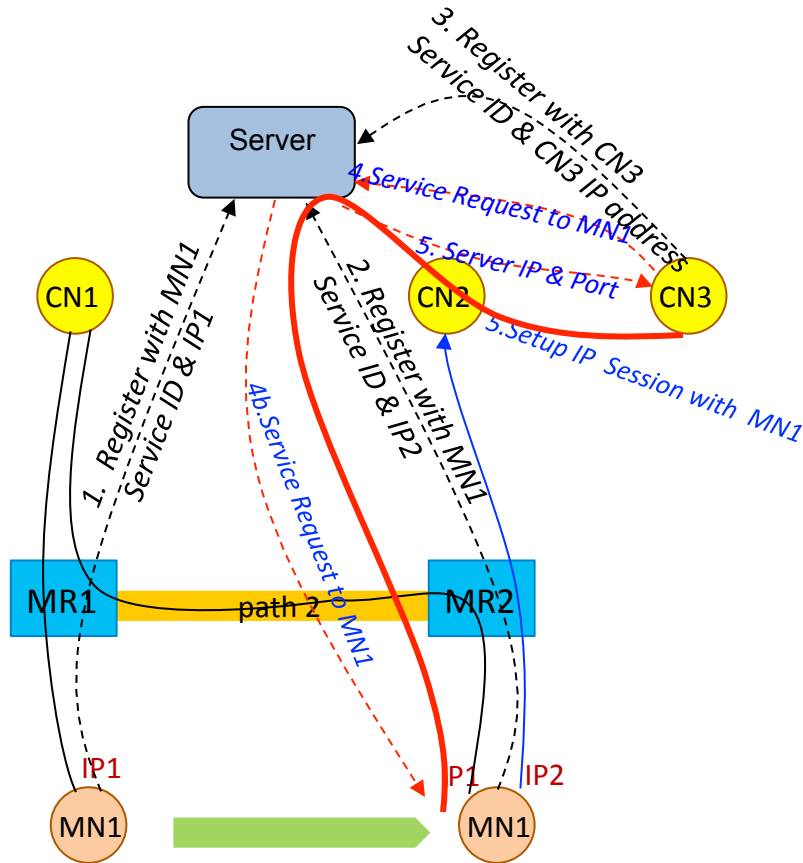
## P2P Mode



- The MN1 and CN3 register to the same Server for a special service (e.g. MSN Messenger) using its IP address.
- When the MN1 gets a new IP address, it can register its new IP address to the Server.
- If CN3 wants to initiate a service to the MN1, it sends the “Service Request to MN1” message to the server
  - The server then provides MN1 IP address and Port information to the CN3, the CN3 directly setup the IP Session with the MN1 without the server involved.

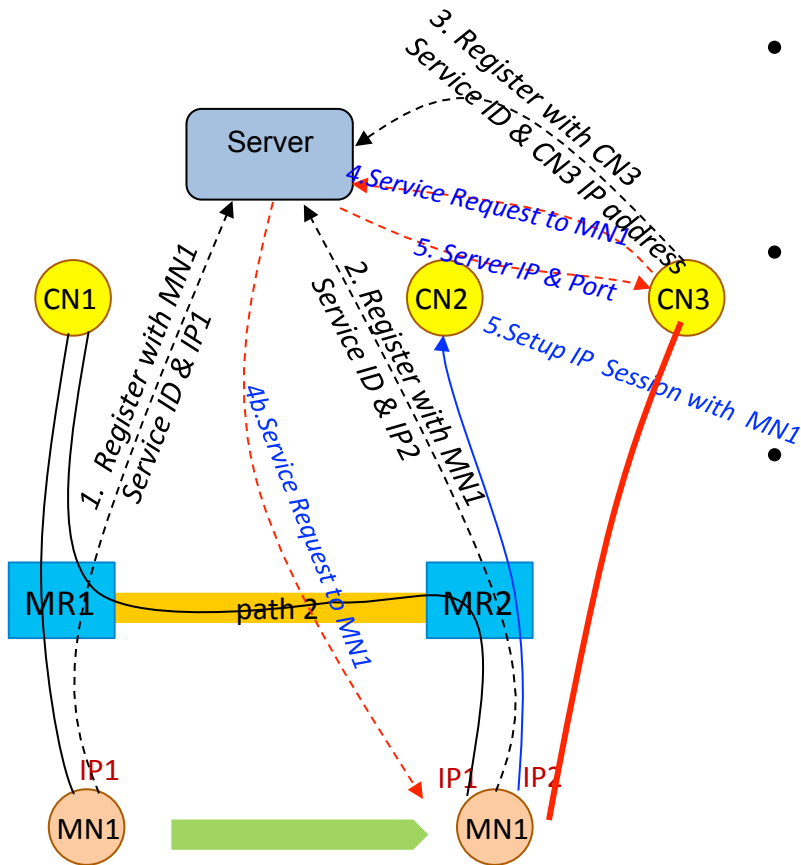
# Server Registration Method

## Server Central Mode



- The MN1 and CN3 register to the same Server for a special service (e.g. MSN Messenger) using its IP address.
- When the MN1 gets a new IP address, it can register its new IP address to the Server.
- If CN3 wants to initiate a service to the MN1, it sends the “Service Request to MN1” message to the server
  - The Server provide its IP address and port information to the CN3 as the MN1 contact information.
  - At the same time, the server proxies the CN3 to setup an IP Session to MN1.
  - After that, the IP session between CN3 and MN1 is combined two parts: CN3-Server part and Server-MN1 part. i.e. the Servers is in the CP/UP path of the IP session between CN3 and MN1;

# Server Registration Method Combined Mode



- The MN1 and CN3 register to the same Server for a special service (e.g. MSN Messenger) using its IP address.
- When the MN1 gets a new IP address, it can register its new IP address to the Server.
- If CN3 wants to initiate a service to the MN1, it sends the “Service Request to MN1” message to the server
  - Similar as Service Central mode, the CP for the IP session pass through the Server, but the UP for the IP session is directly established between the CN3 and MN1.

If there is no CP and UP for the IP session, then combined mode is server central mode.

# Issues to be investigated

- The paper shows there are no big potential issues with the MN IP reachability for the DMM, but the following issues still needs to be investigated:
  - When does the MN update its new IP address to the DNS/APP Server and to keep the previous IP session's continuity?
  - If the MN's old and new IP address are used for the CP and UP separately, then when to update the IP address registration in the APP server ?



# How to Forward

- Collect MN IP reachability issues and provide detailed IP address updating in the DNS/APP server during/after the DMM procedure.
- Possible or Necessary to continue to update the draft ?