Multihoming Implementation on Mobility First

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Multihoming on Mobility First

- <u>Multihoming:</u>   Host can connect to the network using multiple interfaces simultaneously.

- <u>Design goals for Multihoming on Mobility First:</u>
  1) Implementing multihoming on Sender side and Receiver side.
  - Host can set a priority for choosing a network interface for sending or receiving data.

    But it is up to the network to dynamically allocate the network interface of preference.

    2) Enabling the Network Manager(embedded in Network layer) to make a decision dynamically to select the network interface for the destination to forward the packet.
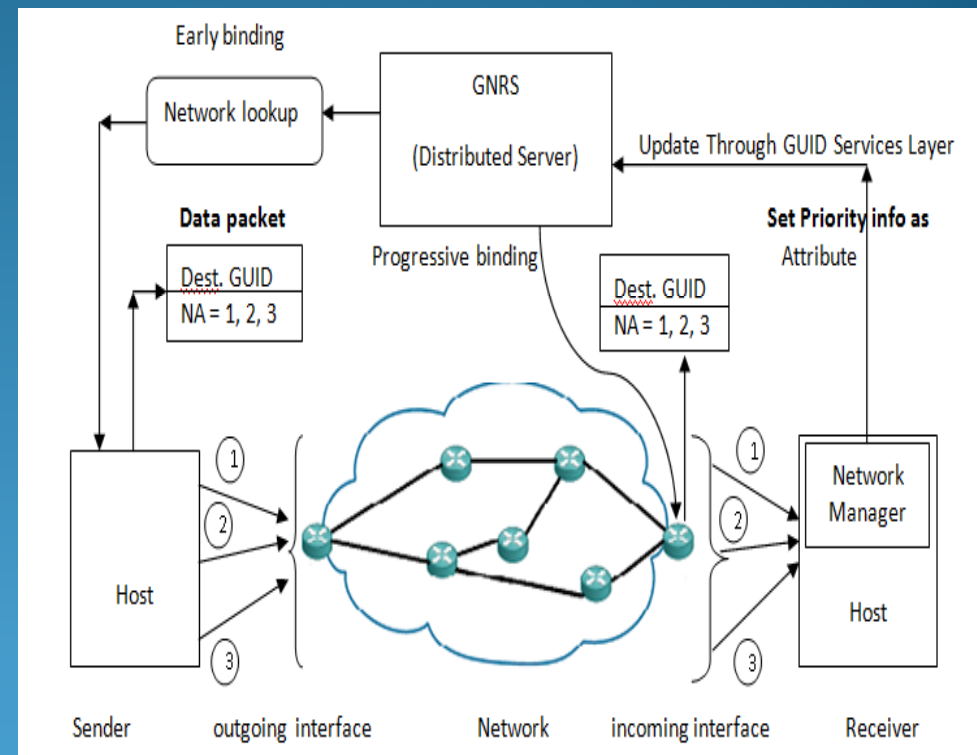
Ideas and Challenges

Ideas:

- Multihoming on sender is similar to anycast (with exceptions) .

- On receiver side, it is implemented based on user priority e.g. the battery usage, the available data plan and the performance of the network channel .

- The Network Manager is responsible for Network Interface Management.

Challenges:

- Performance evaluation is required to check if the priority should be set per flow basis or by some other means.

- Since one GUID is associated to one device, it can't be used for multiple network connections simultaneously.

- We may need virtual GUIDs which will be assigned to the same device to allow the multiple connections for different applications of the same host simultaneously.

Work Plan for next week

- Design the Receiver side multihoming.
- Set up the environment for experiment by the emulator and the wireless devices.

Work Plan for Summer

- Design and implementation of Multihoming on both Sender and Receiver side on Mobility First.

- Experiments on testbed with different wireless networks to test the multihoming implementation.

- Emulate different scenarios to evaluate the efficiency and hence optimize the policies for multihoming for different applications.