

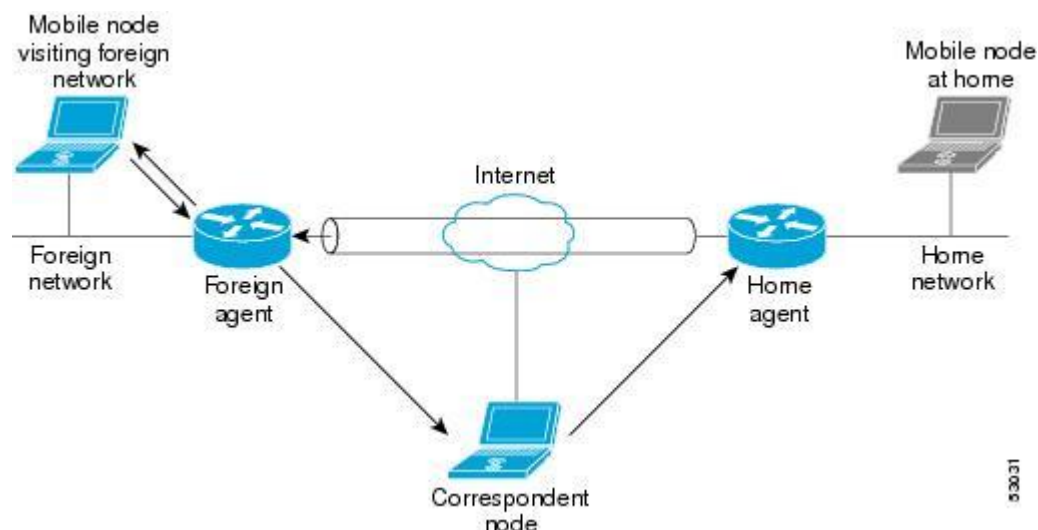
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# Self-Chosen Project - Mobile IP Simulation

## Description

Mobile IP is a standard communications protocol that is designed to allow an end host to move wherever it needs or wants to on the Internet without having the need to change its IP address. The host with a mobile IP is known as a mobile node, with a home address tied to its home network. And a home agent that intercepts packets that are meant for the mobile node if it is in a foreign network, registered to a foreign agent.



## Motivation

After learning about Mobile IP in NSCAP class, it seems like the first step to learning about more advanced protocols that enable mobility and portability for wireless devices. Therefore, in order to get a more in-depth understanding of this particular protocol, a hands-on implementation to simulate the protocol is a must.

## Rough Plan

With the framework of the OSPF homework, I plan on implementing a special type of router device with agent capabilities such as advertising, registering with hosts, and intercepting packets. Moreover, I would need end hosts that can connect to agents, they would store their home address and current care-of-address (COA), and also be able to move between agents.

By having hosts and routers, the packets from hosts would be encapsulated in headers for forwarding between routers. It would become two-tier IP addressing.

In my current design, the agents are special routers, and the COA is based on the agents instead of having a unique address for every mobile node.

## Expected Results

If things go well, I hope the simulation can behave as closely to the protocol as possible. With visualization already mostly implemented in the OSPF homework, when a certain end host A tries to send a packet to another end host, let's say B, who has temporarily moved out of its home network and is now in a foreign network registered to an agent. The packet should be forwarded to the home agent, which is then forwarded to the foreign agent and to end host B.

And when B wants to send out a packet, the packet should follow the shortest path possible to the destination.