

Mobile IP Home Agent Elements and Behavior

This topic describes Mobile IP home agent for subscriber access.

Mobile IP is a tunneling-based solution that enhances the utility of JUNOS routing platforms at the edge of the network between fixed wire and wireless network domains. This tunneling-based solution enables a router on a user's home subnet to intercept and forward IP packets to users who roam beyond traditional network boundaries. Mobile IP is useful in environments where mobility is desired and the traditional land line dial-in model does not provide an adequate solution, and in environments where a wireless technology is used.

You configure Mobile IP home agent parameters in the `[edit services mobile-ip]` hierarchy level, the `[edit logical-systems logical-system-name]` hierarchy level and the `[edit routing-instances routing-instances-name]` hierarchy level.



NOTE: Currently, JUNOS software does not support configuration of the Mobile IP foreign agent.

Traditionally, IP addresses are associated with a fixed network location. To achieve mobility, the mobile node assumes a secondary IP address that matches the new network and redirects the traffic bound to the primary or home address to the mobile node's new network. In the Mobile IP architecture, the two agents that accomplish this task are the home agent and the foreign agent.

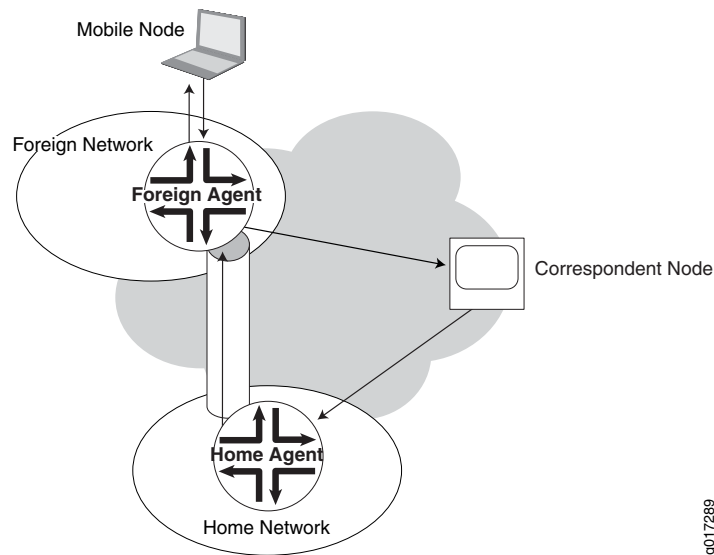
When a mobile node roams into a new, foreign network, it negotiates with the foreign agent to get a secondary IP address, which is referred to as the care-of address. The mobile node registers this care-of address with the home agent. The home agent then establishes a tunnel to the care-of address if the tunnel is not established earlier.



NOTE: You need to establish only one tunnel between the home agent and the care-of address. Demultiplexing of the traffic is done through IP address inspection.

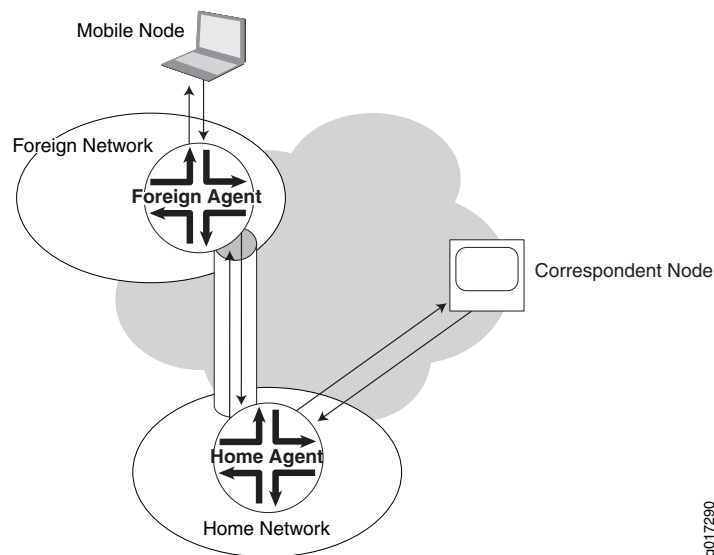
Packets sent to the home address of the mobile node are redirected by the home agent through the tunnel to the care-of address at the foreign agent. The foreign agent routes the packets to the mobile node's home address. Figure 1 illustrates this forwarding and routing process behavior. Although the traffic to the correspondent node comes from the foreign agent, to the correspondent node the traffic appears to come from the mobile node's home network.

Figure 1: Mobile IP Network Without Reverse Tunneling



If the mobile node's home address is a private address or if the foreign agent implements ingress filtering, a reverse tunnel from the care-of address to the home agent is required. This reverse tunnel capability is negotiated between the foreign agent and the home agent when the mobile node requests registration. Traffic from a correspondent node to the mobile node is forwarded by the home agent through the foreign agent as in the other scenario. Figure 2 shows how traffic from the mobile node to a correspondent node is tunneled from the foreign agent to the home agent and then routed to the correspondent node by the home agent.

Figure 2: Mobile IP Network with Reverse Tunneling



Mobile nodes typically belong to a virtual network, which is an address range or subnet that is not directly served by any physical, routed interface on the home

network. These mobile nodes never return home to attach to a physical interface on the home agent. Traffic destined for the mobile node can be forwarded over any interface.

You can use the Mobile IP home agent feature to configure the home agent within the default router context with either local or AAA authentication. When you configure local authentication, you can also configure Mobile IP independently in any named routing instance in any configured logical router. When you configure AAA as the authentication method, you can configure Mobile IP only in the default router context.

The Mobile IP home agent can also receive, process, and send Worldwide Interoperability for Microwave Access (WiMAX) vendor-specific RADIUS attributes (VSAs). This feature enables Mobile IP home agent to work in a WiMAX home connectivity services network (H-CSN), to provide for mobility management at the IP layer.

The home agent handles the following tasks:

- Registration of mobile nodes
- Routing and forwarding of mobile node traffic

Related Topics

- Mobile IP Registration
- Mobile IP Routing and Forwarding
- Mobile IP in the WiMAX Environment
- Configuring Mobile IP

