

Mobile IP

- g Mobility = IP address change
  - Network prefix changes; All hosts on the same LAN have the same prefix
- g What can we do?
  - Correspondent hosts (those that communicate with me) should be unaware of mobile's movement

Needed Component(s)



### Packet forwarding to Mobile

- g Packet reaches home network
- g HA captures packet [promiscuous mode or using gratuitous ARP]
- g HA tunnels packet to mobile at new address [?]

### New address for mobile

1. Foreign Agent Care of Address
  - g IP address of MH = address of FA
  - g FA receives packet; decapsulates it
  - g Delivers packet to mobile
  - g FA is tunnel end point
2. Co-located care of address
  - g Mobile gets local address
  - g HA tunnels packets directly to new address
  - g MH is tunnel end point

### Other components

- g Registration request
  - Mobile to HA
- g Registration reply
  - HA to mobile
- g Both are UDP messages; port 434
- g Agent discovery
- g Deregister: on return to Home Network

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### Agent Discovery

- g Extend ICMP Router Discovery
- g Agent advertisement or Agent solicitation
- g MH must implement agent solicitation

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### Move detection

- g MH records lifetime of agent advertisement; expired; no further advertisement or advertisement from another agent; register with new agent
- g Use network prefixes [only if advertisement includes prefix length extension]

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### Registration

- g Request forwarding of packets when in foreign network
- g Inform HA of new address
- g Renew registration
- g Deregister on returning
- g Message exchanges between MH, HA and optionally FA

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Registration via FA

- g MH sends Registration request to FA
- g FA processes request, relays to HA
- g HA sends Registration Reply to FA [grant or deny]
- g FA processes reply, relays to MH

MH registering with HA directly

- g MH to HA: Registration Request
- g HA to MH: Registration Reply

Type	SBDm GrTx	Life	Time
ha1	ha2	ha3	ha4
Home	Agent		
Care	of	Address	
id			

**8 bits**

- g S: Simultaneous binding [Maintain prior binding]; allow duplicate datagram; tunnel separate datagram for each binding
- g B: Broadcast datagrams requested
- g D: MH will decapsulate; co-located care of address
- g M: Minimal encapsulation
- g G: Use GRE: Generic Routing Encapsulation
- g R: sent as zero, ignore
- g T: Reverse tunneling requested
- g X: sent as 0; ignore

**Reply**

- g Type=0; code=0 [accepted] or 1[no simultaneous binding; others? Rejected]
- g Lifetime: #of seconds the registration is valid for
- g Id: 64 bit id; must match that of the request