

Mobile-IP Basic

- Mobile Host (MH)
 - obtain care-of (C/O) address
 - foreign agent: router or BS that is willing to route
 - temporary IP (i.e. DHCP)
 - register with home agent
- Home Agent (HA)
 - maintain C/O address for MH away from home network
 - intercept packets for MH (proxy-ARP)
 - encapsulate and tunnel to C/O address
- Foreign Agent (FA)
 - Advertisement: (i.e. extending ICMP-router advertisement)
 - Decapsulate packet and deliver to MH

Route Optimization

- Binding
 - home address --> care-of address
 - life time: timeout
- Cache Agent
 - maintain location cache: direct tunneling
 - flush out or request update entries that timeout
 - binding update from HA: update cache
 - binding advise: request new binding from HA
- Home Agent
 - send binding update upon receiving normal IP for MH
 - back-off to prevent lack of cache agent at sender

Authentication

- Registration (MH to HA) message includes:
 - MD-5 checksum with pre-established shared secret
 - sequence number => prevent replay
- Binding Update (HA to CH) message:
 - nonce: random number used only once
 - trusted nodes along the path (IP trust level)
- MH - FA:
 - upon registration, establish shared key (clear text)
 - when move away, send binding update to old FA with MD-5 checksum

