CMPE 257: Wireless and Mobile Networking  
Spring 2005  
Wireless Internetworking II

Announcements  
- Homework on MAC due 05.06.  
- Midterm moved to 05.10.

Today  
- Finish Mobile IP.  
- FLIP.

“TCP Performance in Mobile-IP” [Choong]  
- How does TCP perform atop Mobile IP?  
- What additional overhead is introduced by Mobile IP?  
  - Tunneling/encapsulation.  
  - Fragmentation.  
  - Triangle routing.  
  - Handoffs.
Example: Triangle routing

- Source of overhead:
  - Additional processing at HA and FA.
  - Additional delay due to “triangulation”.

Goal

- Determine impact on TCP performance.
  - Combined overhead sources.
  - Individual overhead sources.

Methodology

- Several scenarios that compound/isolate overhead sources.
- “Baseline” scenario.
- Compare performance between scenario pairs.
- FTP transfer between MH and CH.
- Metric: TCP throughput.

Summary of Results

- Dogleg routing as main cause of TCP throughput degradation.
  - Solution: route optimization.
- Handoff is second.
  - Mobile-IP’s inherent delay in re-establish connectivity with new FA.
  - Solutions:
    - Increase frequency of router advertisements.
    - Use link-layer information to trigger handoff.