

What problems does a mobile ad-hoc architecture have to solve? In each case, why don't standard wireline solutions work (or do they)?

- Finding neighbors/links
- Minimizing collisions/maximizing bandwidth
- Conserving battery
- Allocating addresses
- Forwarding messages
- Identifying malicious nodes
- Defending itself from malicious nodes

How does MPR work?

Each node sends hello messages to communicate what it knows about its neighborhood

Links may be unidirectional (if a node hears messages from a neighbor that doesn't hear messages from the node) or symmetric

No node is its own two-hop neighbor, but a one-hop neighbor can be a two-hop neighbor

Each node builds a map of its two-hop neighborhood using the above rules

Each node finds a minimal (not optimal) set of neighbors that "cover" all two-hop neighbors

⇒ Don't need to know the algorithm for choosing the relays

Proposed routing protocols:

DSDV: How does it differ from Bellman-Ford?

AODV: How does it differ from DSDV? (Reactive vs proactive)

OLSR: How does it differ from OSPF/wireline link state routing?

GPSR: How does it route? What issue arises for this scheme?

Address Allocation:

MANETConf: Arriving hosts contact a proxy, which floods the network to verify availability of offered address

ZAL: Arriving hosts get half of the address space

Virtual nodes: Geographical subdivision of address space