Autoconf via XREQ/XREP

Charles E. Perkins

IETF 77

March 26, 2010

Scenarios – gateway or

- A manet can be standalone (no Internet g/w)
- If a gateway exists, manet nodes may try to get a topologically correct global address (or NATted address)
- If gateway exists, it sends occasional beacons
- Gateways can come and go

Want an address? Just ask!

- A node gets an address by requesting it.
- Tricky: for routability of the request packet, the node already needs an address
- Solution: pick a random address to use for some number of milliseconds
- For IPv6, this is great – short least time

Standalone

- Node doesn't receive any beacon, so it picks a random address in a preallocated range (perhaps subnet of MANET_LOCAL prefix)
- Floods XREQ. If XREP arrives, the address is taken and the node must try again
- Even if node misses hearing a beacon

Gateway operation

- If node hears a beacon, pick random temporary address in subrange of the advertised prefix and unicast a XREQ to the gateway.
- Node can also unicast a XREQ to the gateway with temporary address in subrange of MANET_LOCAL, if it does not want global address
- Multiple gateways are possible – node

Mobile IP

- Natural model for support if gateway exists – use locally allocated address as care-of address.
- If home agent is in the MANET, more fun – but the node acts as if it is on the home network so just have to tweak business about gratuitous ARP and so on.

Contributors (circa 2001)

- Ryuji Wakikawa
- Elizabeth Belding
- Anders Nilsson
- Jari Malinen
- Yuan Sun
- Antti J. Tuominen
- Charles E. Perkins