MIPSHOP and Detecting Network Attachment (DNA)

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Mobile IPv6 related Optimization work

- Here is a simplified breakdown of work areas for Mobile IPv6 Optimization:
  - Movement Prediction (FMIPv6)
  - Movement Detection (MDOpt, FastRA, FRD &etc)
  - Address Configuration (OptiDAD, aDAD, &etc)
  - Location Signalling (HMIPv6)
- FMIPv6 and HMIPv6 are handled in MIPSHOP so why aren't the other two?

Applicability of MD and Addrconf

- Movement Prediction, Mobility Signalling tied to Mobile IPv6 in FMIPv6 and HMIPv6.
- Movement Detection and Address Configuration are based on existing mechanisms:
  - Neighbor/Router Discovery
  - Stateless Address Autoconfiguration & DAD
  - DHCP (not explicitly in MIPv6)
- Optimizations may have greater applicability than Mobile IPv6.

Detecting Network Attachment (DNA) BoF

- Deals with quickly obtaining presence on a new link
- May not be on critical path if prediction is available
- Potential benefits for handovers:
  - Provide support where prediction fails or is unavailable
  - Reduce needed overlap times for make-before-break and local tunnels
  - Provide unambiguous movement information
- Also applicable to MIPv4, DHC, ZEROCONF.

DNA ⊃ Movement Detection

- Movement Detection aims to:
  - Receive RA quickly
  - Determine if RA implies link change.
- These are goals for DNA as well.
- Network Attachment Detection is an effort to handle issues like Movement Detection in a generic way.
- Good chance that generic detection of network attachment can be used to solve MD issues.

Is DAD Optimization in DNA?

- DAD Optimizations aim to reduce delay due to Duplicate Address Detection in handovers
- Existing work on this has no home.
  - Stateless DAD schemes (OptiDAD)
  - Stateful DAD schemes
  - Constrained Addressing Domains (DupAddrDetectTransmits=0)
- Applicable for any systems wishing to send/receive immediately.
- Network Attachment Detection often followed by address configuration.

Link Layer Triggering?

- Link Layer triggers provide a hint to start DNA
- Can provide verification for router information change
- Simple triggers (Link Up/Down?) *No Prediction*

Co-ordination of MIPSHOP and DNA

- Some potential interaction with reactive handovers.
- Address Management a critical task for fast handovers.
- Both interested in Link-Layer information.
- DNA only useful if meets other groups' requirements.