

Mobile Agent Discovery Proxy (MADP) in IPv4 Mobility Management

draft-yao-mip4-mobile-agent-proxy-00.txt

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Background and Objectives

- In xDSL networks with WiFi extension, periodical transmission of Agent Advertisements (AA) by mobility agents is used by Mobile Nodes (MN) to detect movement.
 - the interval at which AAs are sent should not be long.
- Home Agents (HA) and Foreign Agents (FA) are located on or beside Edge Routers (ER) that usually serves thousands of MNs (typically between 2000 and 5000 in xDSL networks)
- Periodically multicasting AA to MNs in such a large link consumes a significant amount of the aggregation network bandwidth and CPU resources of ERs.
- A MADP can be set in access nodes to make the MNs detect movement fast meanwhile avoiding CPU and network bandwidth consumption

Summary of MADP draft (1/2)

- The MADP behaves as a proxy to the MNs regarding the Agent Discovery process.
 - MADP maintains mobility agents information locally (we name this locally information as “Cached Information”)
 - MADP transmits AAs to MN periodically on behalf of its HA/FA and responds to AS from MNs on behalf of its HA/FA.
 - MADP transmits AS when it needs them (e.g. at its startup, re-configuration, at the request of a MN if required)
- Loop Prevention
 - The MADP should be configured to know which of its interfaces is the upstream interface and which are downstream interfaces.
 - An AS received on the upstream interface should be silently dropped.
 - An AA received on a downstream interface should be silently dropped.

Summary of MADP draft (2/2)

- MADP's Cached Information includes:
 - All fields required to build valid AA messages for MNs that are consistent with mobility agents (HA/FA) information
- MADP maintains its Cached Information as following:
 - The Cached Information can be statically configured or dynamically received from upstream HA/FA solicited or unsolicited AA messages
 - If dynamically received from upstream HA/FA , there are two possible ways:
 - One is to retrieve Cached Information at its startup or re-configuration or on MADP's demand
 - The other is to refresh Cached Information with a period relatively longer than the one that would be in use without MADP.

Next steps

- Request that the MADP draft becomes a WG Document
- Resolve upcoming comments

Thanks!

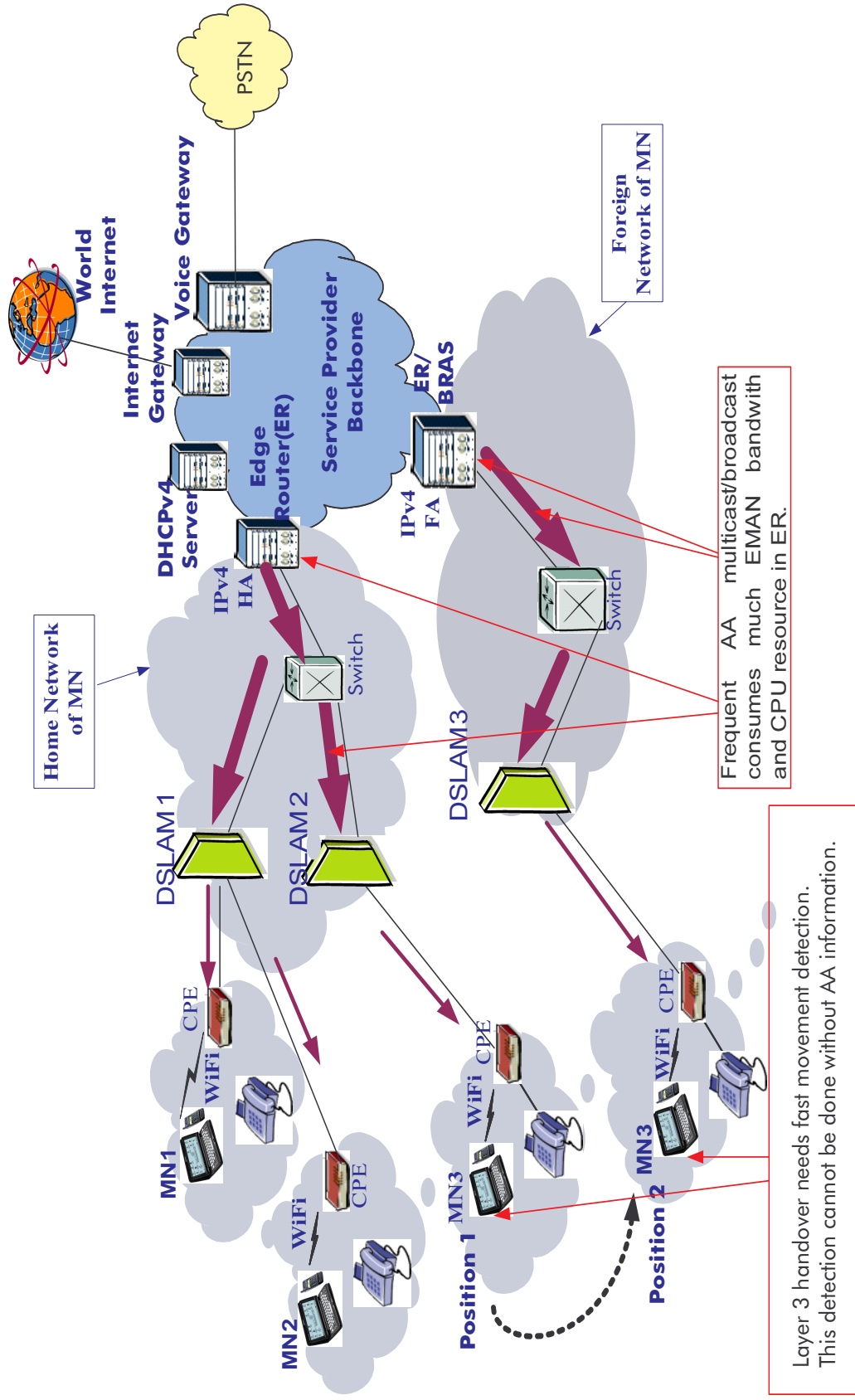
Any Comments?

Backup

Cached Information

- MADP's Cached Information includes:
 - The Values in ICMP Router Advertisement fields of AA (specified in section 2.1 of [RFC3344]): ICMP Code, Lifetime, Router Address(es), Num Addr.
 - The values in Mobility Agent Advertisement Extension fields of AA
 - Length, Sequence Number, Registration Lifetime, "R"bit, "B" bit, "H"bit, "F"bit, "M"bit, "G"bit, "r"bit, "T"bit, "reserved" field, Care-of Address(es), the number of Care-of Addresses
 - The values in Prefix-Lengths Extension fields of AA
 - Mobile IP Agent Advertisement Challenge Extension as defined in [RFC4721]

DSL Network Architecture and the Problem without MADP



Basic Idea of MADP

