Context Transfer of Mobile IPv6 Multicast Listeners

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Introduction

- Context Transfer Protocol - CXTP (RFC 4067) introduces a mechanism for the secure transfer of context data between ARs

- Multicast Listener Discovery - MLDv2 (RFC 3810) used by Routers to discover the presence of multicast listeners

  - Supports multicast filters and SSM

Multicast Context Transfer

- Goal is to support seamless handover of mobile multicast listeners using either ASM or SSM

- Uses listener's current context in the previous AR to quickly re-establish trees in the next AR

  - With MLDv2, explicit tracking of individual listener group interest is required

Multicast Context Data (1)

- The entity responsible for feeding the information into the context data block will retrieve it from the local multicast interest manager, for instance, from the MLDv2 router

- Each Multicast Context Data Block includes a list of Multicast Group Records, one for each group the terminal is interested in

Multicast Context Data (2)

- Multicast Group Records:

  - Holds the current filter for the specified group address - Same format as MLDv2, *INCLUDE* or *EXCLUDE* a list of sources in order to support both ASM and SSM

  - Allows options which may carry additional context information related to the group

    - for ASM and when using PIM-SM, routers may want to include the known sources (Active source list option)

MLDv2 extensions

- Mobile terminals don't require any network stack modifications

- Routers must implement MLDv2 explicit tracking of listeners

  - for each MLDv2 group state, an additional list of records containing each of the listeners' address and their individual interest must be kept

  - This is reasonable considering the dimensions of most access networks

Integration with Fast Handovers

- In predictive scenarios, the terminal sends the FBU to the previous AR

- This is will trigger the previous AR to send a Context Data message to the next AR containing the multicast context information

- The next AR will then build the multicast trees required by the terminal (if not yet created) in parallel to the handover process

Integration with CARD

- Candidate Access Router Discovery (CARD) allows terminals to retrieve information about candidate next ARs

- Multicast Context information could be included in the CARD Reply messages to let the terminals know which AR already has some, or all, of the required multicast trees already built

Thank you