AUTOCONF Problem Statement

draft-baccelli-autoconf-problem-statement-01

Emmanuel Baccelli, Kenichi Mase, Simone Ruffino, Shubhranshu Singh
Status

- -00 published shortly after IETF66th
  - Addressed comments received during the meeting

- Few comments received on the ML

- -01 version out
Status (cont.)

• Alignment of -01 with the architecture draft
  – Terminology

• WG consensus required on key issues to go forward
  – some questions remain unanswered to date
    • What kind of devices are we configuring?
      – MANET routers
      – MANET hosts
    • What are we configuring?
      – Prefixes
      – Addresses

• Decision to be made about which document should contain these answers
  – All of these in the problem statement draft?
Current structure of PS draft (-01)

• Overview of the problem and terminology
• Deployment scenarios
• Problem statement
• Solution guidelines
• General requirements
• Security considerations
Problem Statement sec.

- **General goal:** configuration of one or more
  - unique local address in MANETs
  - global address for Internet traffic outside MANETs

- **Identified problems:**
  - Specific broadcast characteristics
    - IPv6 Autoconf cannot be applied
  - Dynamic topology
    - address uniqueness disrupted by partitions and mergers
  - Multiple gateways
    - address/prefix choice can impact application performance
Solution Guidelines sec.

• was: “Framework”

• Identification of three distinct phases:
  – Address generation
  – pre-service DAD
  – in-service DAD

• 4 models derived as combinations of these phases:
  – Full DAD
  – No DAD
  – No pre-service DAD
  – No in-service DAD
Full-DAD model

(Address generation) (In-service DAD)

Duplicate address
+-----------------+ detected +-----------------+
| NO ADDRESS | <-----------------| NORMAL | 
+-------------| phase | 
| +-----------------+ duplicate address Address | 
| (Tentative) address | generated +---------+ checked |
| | | |
| +-----------------------------------------------------------------+ |
| | | ADVERTISING phase |
| | | |
| | | |
| | | +-----------------+ +-----------------+ |
| | | LOCAL AD. | GLOBAL AD. |
| +---+ | phase | +---+ | phase | +---+
| | +-----------------+ +-----------------+ 
+-----------------------------------------------------------------+

(Pre-service DAD)
No DAD model

Fig. 2 Phases model without DAD.
No Pre-service DAD model

In-service DAD

Fig. 4 Phases model without pre-service DAD.
No In-service DAD model

Pre-service DAD

+-------------------------------------+
|                                     |
|                                     |
|                                     |
| +--------------+         +---------------+         +--------------+ |
| |  NO ADDRESS  |         |  ADVERTISING  |         |    NORMAL    | |
| +--->|    phase     |-------->|     phase     |-------->|     phase    | |
| +--------------+         +---------------+         +--------------+ |

Fig. 3 Phases model without in-service DAD.
Next Steps

• Further alignment with arch. draft
  – In particular, regarding questions about
    • what kind of devices (routers/hosts)
    • what we are configuring (prefixes/ addresses)

• Do post your comments on the ML!
Thanks