Strawman Framework

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Strawman Framework

- One analysis of the problem
    - Available as *draft-zorn-roamreq-00.txt*
- Related Work

Example Problem

- Fred has signed up for Internet access with ISP A in his local area.

- ISP A has joined an association of other ISPs (which we will call ISPGROUP) in order to offer service outside the local area.

- Fred travels to another part of the world, and wishes to dial into a phone number offered by ISP B (also a member of ISPGROUP), possibly retaining his IP address from ISP A.

Problem Breakdown

- Phone number presentation
  - Fred must be able to find and select the phone number offered by ISP B

- Phone number exchange
  - When there is a change in the status of phone numbers, there must be a way for providers in ISPGROUP to notify each other and propagate the changes.

- Phone book compilation
  - When these updates occur, there must be a way to compile a new phone book for ISP A, based on the submitted changes.
  - *Issue: are policy-based phonebooks necessary?*

Problem Breakdown (cont'd)

- Phone book update
  - Once a new phone book is compiled, there must be a way to update Fred's phone book.
- Connection management
  - Fred's machine must be able to dial the phone number, successfully connect, and interoperate with the Network Access Server.
- Authentication
  - Fred must be able to secure access to the network.
  - One approach: use of RADIUS/TACACS+ authentication proxies and "realms", I.e. use of fred@ispa.com as userID in PPP authentication.

Problem Breakdown (cont'd)

- NAS Configuration/authorization
  - The Network Access Server (NAS) must receive configuration parameters in order to set up Fred's session.
  - *Issue: RADIUS/TACACS+ servers may send network specific parameters not relevant to ISP B*
  - Solution: RADIUS/TACACS+ proxies can shield servers from network specific knowledge by inserting/modifying parameters

Problem Breakdown (cont'd)

- Security
  - If desired, additional security measures should be supported for Fred's session. These could include use of token cards, or tunneling.
  - Requires definition of token card attributes
  - *Issue: if security attributes are requested, modification by proxies may be problematic*
- Routing
  - Fred may wish to retain the IP address given to him by ISP A
  - Through tunneling, this can be supported
    - symmetric tunneling
    - asymmetric tunneling

Problem Breakdown (cont'd)

- Accounting
  - ISP B must keep track of what resources Fred used during the session: time, speed, ISDN/modem, etc.
  - Many accounting protocols in use
    - SNMP, RADIUS, syslog, TACACS+, etc.
  - Not clear that accounting protocols need to be standardized for this purpose, just accounting record formats, and transmission protocols.

Related Work

- NAS protocols
    - RADIUS, TACACS+, etc.
- IP mobility
    - routing
- Tunneling
    - PPTP, L2F, etc.