P2PSIP Concepts and Terminology

draft-willis-p2psip-concepts-04
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Major Changes This Rev

• Terminology
• Locating and Joining an Overlay
• Role of the Overlay as Distributed Database
• NAT Traversal and Transport Service
• Credentials
• Client Models
Terminology Changes

△ Overlay Name
   Was “Overlay-ID” user-friendly name.

△ Client
   definition cleaned up, deleted “peer subset”.

+ Service
   definition added.

+ Service Name
   added user-friendly name.

△ Users
   named human, aka “User Name”

- △ Resources
   stored in overlay by resource ID.
   Labeled by user or service name.

- P2PSIP UA
   deleted

+ Joining Peer
+ Bootstrap Peer
+ Admitting Peer

△ Admission vs Insertion
   clarified
Locating and Joining an Overlay

- Current rev has more detailed model
- Several Roles Defined
  - Joining Peer
    - The one coming in
  - Bootstrap Server
    - Easy-to-find introducer, finds a Bootstrap Peer
  - Bootstrap Peer
    - finds appropriate Admitting Peer
  - Admitting Peer
    - Performs insertion into database
    - May stay on as link or referrer
- Roles can be combined in implementation
Role of Overlay as Distributed Database

• Overlay provides a distributed database
  – Database stores information about resources
  – P2PSIP will standardize resource representation

• Database stores resource records keyed by ID
  – Users, whose names hash to resource IDs
  – Services, whose names hash to resource IDs
  – Other types of resources?

• How does overlay work to pass messages?
  – Store contact, retrieve contact, and use with SIP
  – Store contact, pass message along peers to contact
  – Store “serving proxy’s” peer ID, use it to route SIP
Overlay Stores Contact

1. Puts Contact at Peer
   alice@example.com

2. Get Alice's contact
   bob@example.com

3. Sends INVITE to Alice's Contact
Overlay Routes to Contact

1. Puts Contact at Peer
   alice@example.com

2. Send INVITE to Alice
   bob@example.com

3. Forward INVITE

4. Forward INVITE

5. Forward INVITE

6. Forward INVITE
Overlay Stores “Proxy” Peer

1. Put Contact at Peer
2. Get Alice's proxy
3. Send INVITE to Alice's Proxy
4. Forward INVITE to Alice

alice@example.com

bob@example.com
NAT Traversal and Transport Service

• Two possible approaches now described
  – Super (public) and ordinary (natted) peer
  – Fully-distributed, aka Partial mesh of persistent connections with edge routing

• Note: Transport discussion later in this meeting.
Credentials

- Resources, especially Users and Services, have credentials.
- Used in authentication and authorization decisions.
- Peers hold and show credentials for the users and services they are representing.
- Are peer credentials a discrete class?
- How do service credentials work?
Client Models

• Requirement for a client still under debate.
• Three models proposed:
  – Client attaches to a peer, which does all the work for it
  – Client attaches to peer and acts as storage auxiliary for that peer
  – Client interacts with distributed database, but doesn’t act as part of database
• Further discussion later in this meeting.
Additional Questions

- Selecting between multiple peers offering same service
- Visibility of messages to intermediate peers
- Hybrid Domains
Futures

• Should we publish this as a concepts and terminology info draft or is this draft becoming the “Framework” draft called for by our charter?