Service Provider Considerations for Offering Presence Services with SIP

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Agenda

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Introduction – Background

- Innovation in telecommunication has created complexity
- Multiple devices and communication methods result in lost time when trying to reach someone
- Presence provides a way to increase reachability
- TDC Song wants to develop the current basic VoIP service in order to offer their customers an improved reachability solution

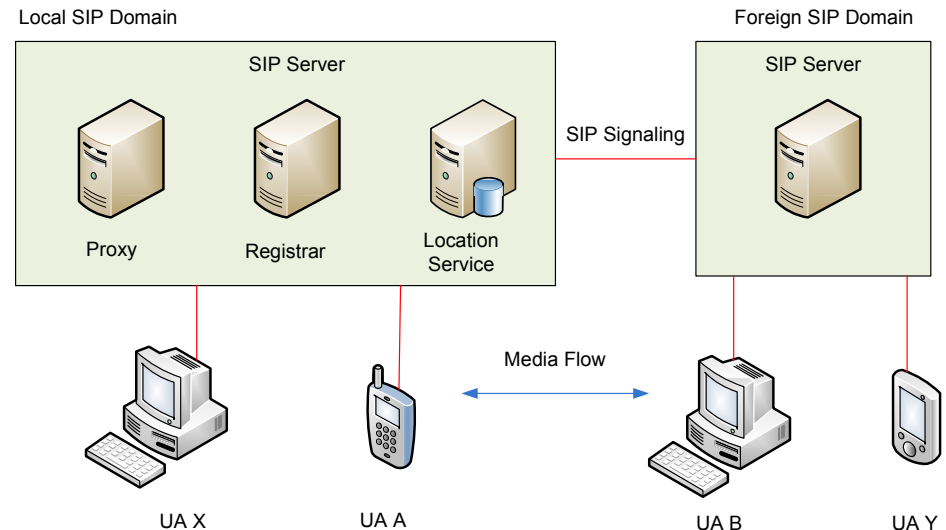TDC Song

Introduction – Problem statement

- SIP has well defined standards for presence, but
- Software implementations do not support presence especially on the client side
- Is it possible to create a working SIP presence environment using the existing software components?
- In addition, is this environment secure, private and reliable enough to transport confidential information?

Introduction – Research methods

- The objective of the literature study:

  - Form basic understanding of SIP

  - Gain deeper knowledge of presence

- The literature review is mostly based on RFCs and Internet-Drafts

- The objective of the empirical study:

  - Collect information from existing SIP servers and clients

  - Modify the existing TDC Song's SIP network to support presence by configuring new servers

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Session Initiation Protocol

- SIP is a general signaling protocol
- Used for creating, modifying and terminating sessions
- HTTP-like text based protocol
- Infrastructure includes several components: proxy, registrar, location service
- Media session is handled by other protocols directly between user agents

Local SIP Domain

SIP Server

Proxy   Registrar   Location Service

SIP Signaling

Foreign SIP Domain

SIP Server

Media Flow

UA X   UA A   UA B   UA Y

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Presence

- Presence information contains knowledge of user's availability and willingness to communicate
- Emerged in proprietary instant message clients, nowadays standardized for SIP by the IETF
- The presence system includes a presentity who publishes his status to the presence service and a watcher who subscribes to this information
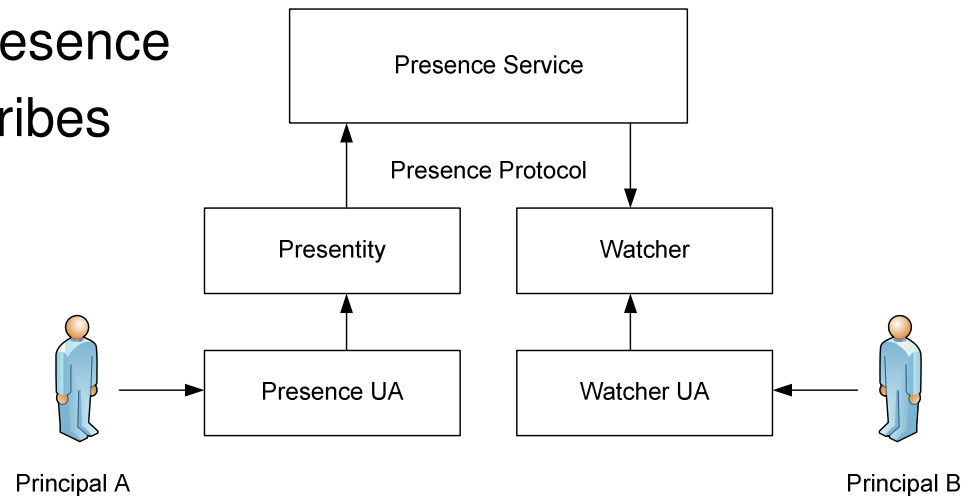
Presence

- SIP transports presence information encoded with XML as a payload
- XML Configuration Access Protocol (XCAP) is used to read, modify and delete resource lists and presence rules
- Standards allow more diverse presence information than just available, busy, on the phone, e.g. mood and location
- Lots of status updates correlate to packet count which may lead to congestion
- Security and privacy need to be well protected
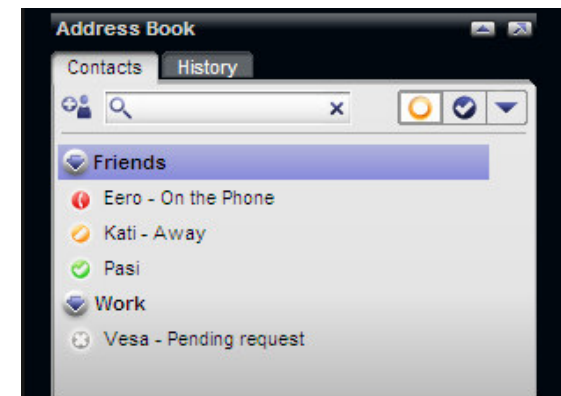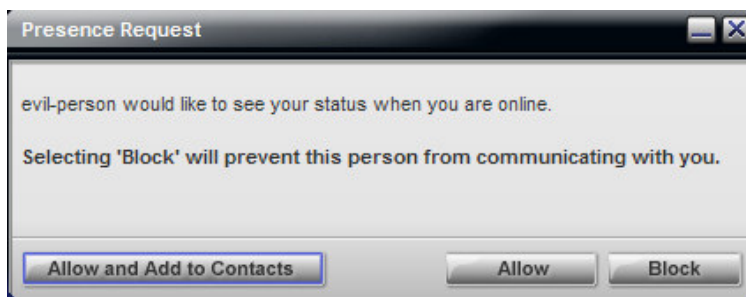
Software solutions

- There are two open source SIP servers available with adequate support for presence: SER and OpenSER

- OpenSER was chosen for this project due to its more advanced features in the current release

- OpenSER can provide carrier-grade SIP proxy service

- The only open source XCAP server available is OpenXCAP

- Client offering is very limited, only CounterPath has two SIP softphones for Windows capable of generating presence and XCAP information

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Presence service

- Presence services was built on OpenSER 1.3, OpenXCAP 0.9.7 and Bria 2.1 softphones

- Bria clients register to OpenSER and exchange presence information with it, also normal session signaling is handled by OpenSER

- Resource lists and presence rules are sent to OpenXCAP, which updates OpenSER's database and informs it about the changes

- OpenSER adjusts presence signaling according to these rules and settings

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Testing results

- Testing focused on basic usage scenarios within the capabilities of the software

- Presence traffic between the clients and the server worked flawlessly

- Also XCAP resource lists and presence rules worked very well although a couple client restarts were required

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Conclusion

- Standards are mature enough for a successful service
- We managed to create presence service using SIP
- This service is limited to PC softphones and only to basic presence features
- Security and privacy requirements were satisfied although not optimal
- More advanced solutions would require more sofisticated clients which work on different platforms, especially on Symbian

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Thank you

- Questions?
- Contact: plehto@cc.hut.fi

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