SIP.edu Working Group Meeting

Internet2 Fall Member Meeting
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Draft Agenda

• SIP.edu goals and overview
• Working Group update
  – Implementation status
  – Cookbook status
  – SIP.edu workshops
  – Vendor support
• Presentations
  – SIP.edu by numbers
  – ENUM in Australia
  – UA registration
• Expanding the charter
SIP.edu Goals and Overview
**SIP.edu Goals**

- **SIP Connectivity**
  
  Build a large base of SIP-reachable Internet2 users by making existing campus PBX, Centrex, and VoIP systems reachable via SIP

- **SIP Addressing**
  
  Facilitate the convergence of communications identities by promoting the use of email addresses for voice and multimedia communications
SIP.edu Architecture (Phase 1)

- SIP User Agent
- DNS SRV query sip.udp.bigu.edu
- INVITE (sip:bob@bigu.edu)
- SIP Proxy
- telephoneNumber where mail="bob"
- Campus Directory
- INVITE (sip:12345@gw.bigu.edu)
- SIP-PBX Gateway
- PRI / CAS
- PBX
- bigu.edu
- Bob's Phone
If Bob has registered, ring his SIP phone; Else, call his extension through the PBX.
Why Phone NUMBERS?

• Users should not be burdened with device addresses, when it’s people they really care about

• Addresses should be mnemonic and empower enterprises to manage the identities of their users

    sip:dbaron@mit.edu

• It’s time to put E.164 phone numbers behind us!

• A.G. Bell did not say:

    “+1-617-252-1232, come here. I need you!”
SIP.edu “gaps”

• SIP is more than voice
  – Video and IM are important too
  – Presence services change the user experience

• Chickens without eggs only gets you half way
  – We’ve made everybody SIP reachable, now who’s going to call them?

• The 12-digit keypad problem will be with us for awhile
  – What do we do until the devices have a 21st century user interface?
Implementation Status

Welcome to the Johannes Gutenberg University of Mainz 9/14/05
Implementation Status (cont.)

• SIP Proxies
  – Avaya
  – Cisco
  – Interactive Intelligence
  – Iptel.org SER (11)
  – Pingtel

• Gateways
  – Asterisk (4)
  – Avaya
  – Cisco (7)
  – Interactive Intelligence
Implementation Status (cont.)

• PBXs
  – Ericsson
  – Lucent (2)
  – Mitel
  – Nortel (6)
  – Siemens (3)
Cookbook Status

See http://mit.edu/sip/sip.edu/

• Sections have been added
  – Cisco SIP Proxy Server (CSPS)
  – Cisco Gateways

• Missing pieces
  – Asterisk gateway

• Some information is over two years old now
  – Proxy and gateway sections could be updated for current releases
  – User agent section is also dated
Vendor Support

• Avaya
  – Developed LDAP plug-in for directory integration
  – Sponsored first SIP.edu hands-on workshop

• Cisco
  – Discount package for CSPS

• Comcast
  – Sponsored first SIP.edu implementers workshop

• Pulver.com
  – Developed BlueLava package for SER/Asterisk
  – Workshop support – software and instruction
SIP.edu Workshops

• Implementers workshop (1)
  – Dealt with technical and policy issues surrounding deployments

• Hands-on workshops (2.5)
  – Provided hands on experience with proxies and user agents
  – Servers and hard phones provided by Texas A&M ITEC
Presentations
ENUM
ENUM Quickie

- E.164 number: +1-617-252-1232
- Strip and reverse: 23212527161
- Dot it: 2.3.2.1.2.5.2.7.1.6.1
- Add root: 2.3.2.1.2.5.2.7.1.6.1.e164.arpa

DNS query

Get list of URLs

1) sip:dbaron@mit.edu

2) mailto:dbaron@mit.edu
A few words about ENUM

from AARNet -

• Australian Trial running since June 2005 (Governed by ACMA and AusRegistry)

• AARNet is a Tier 2 Registrar and provides this service to its members and associates
  
  – Two commercial Registrars provide the service to the public

• In stage 1 a dedicated number range is used 05900xxxxx
  \( \rightarrow x.x.x.x.0.0.9.5.1.6.e164.arpa \)

• ~ 40 ENUMs registered so far (by AARNet)

• Developed our own Admin-system
ENUM Issues

• Worldwide deployment has been slow
  – Especially in North America – country code 1 has not yet been assigned

• Who “owns” the numbers anyway?
  – Even if your number is included in e164.arpa does it get assigned to you – or your carrier?
  – Do you get control over the responses?

• Results – private roots
  – But which one(s) do you use?
  – What if they give you different answers?
ENUM Testing in SIP.edu

So is the answer just another root for .edu?

• Test ENUM server at SipEduEnum.pulver.com

• Test SIP redirect server too

    sip:+<countrycode><number>@redirect.SipEduEnum.pulver.com:5062
UA Registration
UA Registration Thoughts

Some early thoughts on an MIT solution…

• Allow open registration for any one in the campus community
  – Reuse X.509 client certificates for authentication
  – Or mail a secret to a campus email address

• Users would be able to manage their own SIP account via the web
  – Change SIP password
  – Change SIP service options
  – Default would be to forward to their listed PBX number
  – Or maybe just record a message and email it
UA Registration Thoughts (cont.)

• Users should be able to manage their call routing
  – Send calls to their PBX number
  – Or any other SIP URI that they choose
  – Or maybe to any “local” number
  – Allow for temporary registration of a SIP contact
  – Allow for recording a message and forwarding to email
  – Maybe allow for forking

• Custom call handling options
  – Routing based on From: field
  – Routing based on To: field
  – Time of day routing; calendar based routing; etc.
  – Special routing for unauthenticated calls
UA Registration Thoughts (cont.)

• Users should be able to manage their identities
  – Allow activation of aliases
    • Email aliases
    • Mailing lists the control
    • PBX numbers that they publish
    • Other unique numbers they “own”
  – Allow setting of their PSTN identity
    • Their published PBX number
    • Maybe any other number that they publish
    • Or some authentication method
UA Registration Thoughts (cont.)

- Users should be able to see their current SIP registrations
- Users should have access to their call histories
  - Outgoing calls
  - Incoming calls
  - Missed calls
- Call details should be available for advanced debugging and abuse analysis
- Third party call control for originating calls and changing identities
Expanding the Charter
Expanding the Charter

• Options for “raising the bar” for SIP.edu
  – Should we just continue down the current path of increasing SIP reachability?
  – Or what might be the next “level” of deployment?
  – Or is there a set of “add-on” features that we might put forth as options for campuses to implement?

• Soliciting input from the Working Group membership
Expanding the Charter (cont.)

• Preliminary thoughts include
  – Expanded peering and connectivity
  – Policies for federated identities and peering
  – Models and best practices for UA registration services
  – Multimedia and presence alternatives
    • Promote SIMPLE based IM
    • Document sharing and whiteboarding
      – Integration with other app’s – eg. calendars
      – Service procurement – a “voice Quilt”
      – Best practices for marketing SIP services on campus
SIP.edu

– Web page:
  http://www.internet2.edu/sip.edu/

– Mailing list:
  mailto:sip.edu@internet2.edu

– Conference calls:
  Thursdays – 2:00 – 3:00pm Eastern US