SIP.edu Project

CSG VoIP Workshop

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SIP.edu

• Goals
  – Grow SIP connectivity in Internet2
  – Increase value proposition for end-user SIP adoption
  – Promote convergence of voice and email identity
  – Low entry-cost means for campuses to...
    • Provide a useful service
    • Get their feet wet with SIP

• Means
  – Publishing “cookbook” with several alternative “recipes”
  – Obtaining corporate sponsorship and promotional pricing
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 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
- DNS
- SIP-PBX Gateway
- PRI / CAS
- PBX
- bigu.edu
- Bob's Phone
- SIP.edu Architecture (Phase 1)
If Bob has registered, ring his SIP phone; Else, call his extension through the PBX.
SIP.edu Call Flow Example

• SIP DNS lookup for MIT.EDU points to SIP proxy
  – Sends INVITE to bob@mit.edu to proxy

• SIP proxy checks MIT directory
  – Maps call to PBX extension – eg. 37669@mit.edu

• SIP proxy checks dial plan
  – Routes call to PBX gateway

• PBX rings phone
SIP.edu Configuration

- Internet
- Internet2
- Campus Network
- SIP Server
- DNS Server
- LDAP Server
- SIP/PRI Gateway
- PBX
- PSTN
DNS SRV Lookup

- Internet
- Internet2
- Campus Network
- SIP Server
- DNS Server
- LDAP Server
- SIP/PRI Gateway
- PBX
- PSTN
SIP INVITE

SIP

SIP Server

DNS Server

LDAP Server

Internet

Internet2

Campus Network

PBX

PSTN

SIP/PRI Gateway

SIP INVITE
LDAP Lookup

- SIP Server
- Internet
- Internet2
- Campus Network
- LDAP
- SIP/PRI Gateway
- DNS Server
- LDAP Server
- PBX
- PSTN
Call Sent to PBX Gateway

- SIP
- SIP Server
- Campus Network
- DNS Server
- LDAP Server
- SIP/PRI Gateway
- PBX
- PSTN
- Internet
- Internet2
- PBX Gateway
- Call Sent to PBX Gateway
Media Stream via Gateway to PBX

- RTP
- SIP Server
- DNS Server
- LDAP Server
- Internet
- Internet2
- Campus Network
- SIP/PRI Gateway
- PBX
- PSTN
SIP.edu Configuration

- Internet
- Internet2
- Campus Network
- SIP Server
- DNS Server
- LDAP Server
- SIP/PRI Gateway
- PBX
- PSTN
SIP to PBX and PSTN Calling

- SIP Server
- Campus Network
- DNS Server
- LDAP Server
- SIP/PRI Gateway
- PBX
- PSTN
PBX and PSTN to SIP Calling

Internet

SIP Server

DNS Server

LDAP Server

SIP/PRI Gateway

Internet2

Campus Network

PBX

PSTN
SIP.edu Reachable Users
SIP.edu Quotes

“This project was initiated by the need to provide reliable, IP based phones for the Toolik Lake research station located north of the Brooks Range.” University of Alaska Fairbanks

“sipETH: Internet Telefonie for the ETH Zurich: This project has been inspired by the Internet2 SIP.edu initiative. During the exploration process many new ideas have led to a new vision for our project.” ETH Zurich

“Our SIP.edu infrastructure has allowed us to utilizing our Internet2 connections to reestablish the telephone tie lines connecting our two institutions.” MIT and WHOI
SIP.edu – Just do it!

Questions?