

Voice over IP @ MIT

Individual SIP Accounts

“Blue Sky Potential”

MIT Association of Independent Living Groups

John R Covert

Phi Kappa Theta

January 2009

IT 101

Overview

In 15 minutes we will cover:

- What VoIP is.
- Individual VoIP options are available at MIT
- An example of how one FSILG is using VoIP
- Some “blue sky” ideas for the future

What is VoIP

- Voice over IP is simply sending telephone calls as packets between internet-enabled devices.
- Replaces the legacy circuit-switched telephone network (a hybrid of digital and analog circuits).
- Gateways between legacy and VoIP will be needed for years. Invisible and explicit gateways.
- Various protocols. Most widely used is SIP.

VoIP Device

v

TCP or UDP packets

v

VoIP Device or Gateway

Analog Device

Frequency Domain Multiplexing

Digital Conversion

Time Domain Multiplexing

Personal VoIP @ MIT

- web.mit.edu MIT-google enter VoIP should take you to:
<http://web.mit.edu/ist/topics/voip/>
- Personal SIP accounts: “This experimental service is aimed at advanced users and has limited support.”
- But they are cool, and free, and get you an MIT campus extension (a real 617 number) and voicemail.

Personal SIP Account Activation

- Go to the Personal SIP Account management page. Certificates required.
<https://voip.mit.edu/cgi-bin/personal/sipmgr>
- Click the Activate SIP Account button.
- Enter a password. (Device password.)
- Click the Activate Account button.
- Info:
<http://mit.edu/ist/topics/telecommunications/psip/using.html>
<https://confab.mit.edu/confluence/display/SIP/SIP+Users+at+MIT>

What can I connect to my account?

- Any VoIP phone or softphone, on campus or anywhere in the world. More than one at a time on the same account. All can make separate outgoing calls, all ring on an incoming call, first to answer gets call.

Polycom

Cisco/Linksys/Sipura

Snom

Grandstream

SJphone

Zoiper

X-Lite

Asterisk PBX

What can I call?

- Campus phones, including tie lines to Harvard, Woods Hole, etc.
- Many other Universities and private companies via ISN dialling (access code at MIT is *0 or 4-8999)
- Any valid SIPURL (sip:xxxx@yyy.zzz) worldwide.
 - If a regular phone has a SIP equivalent in many countries (not North America, yet) it will be listed at `b.a.c.k.w.a.r.d.s.n.u.m.b.e.r.e164.arpa`

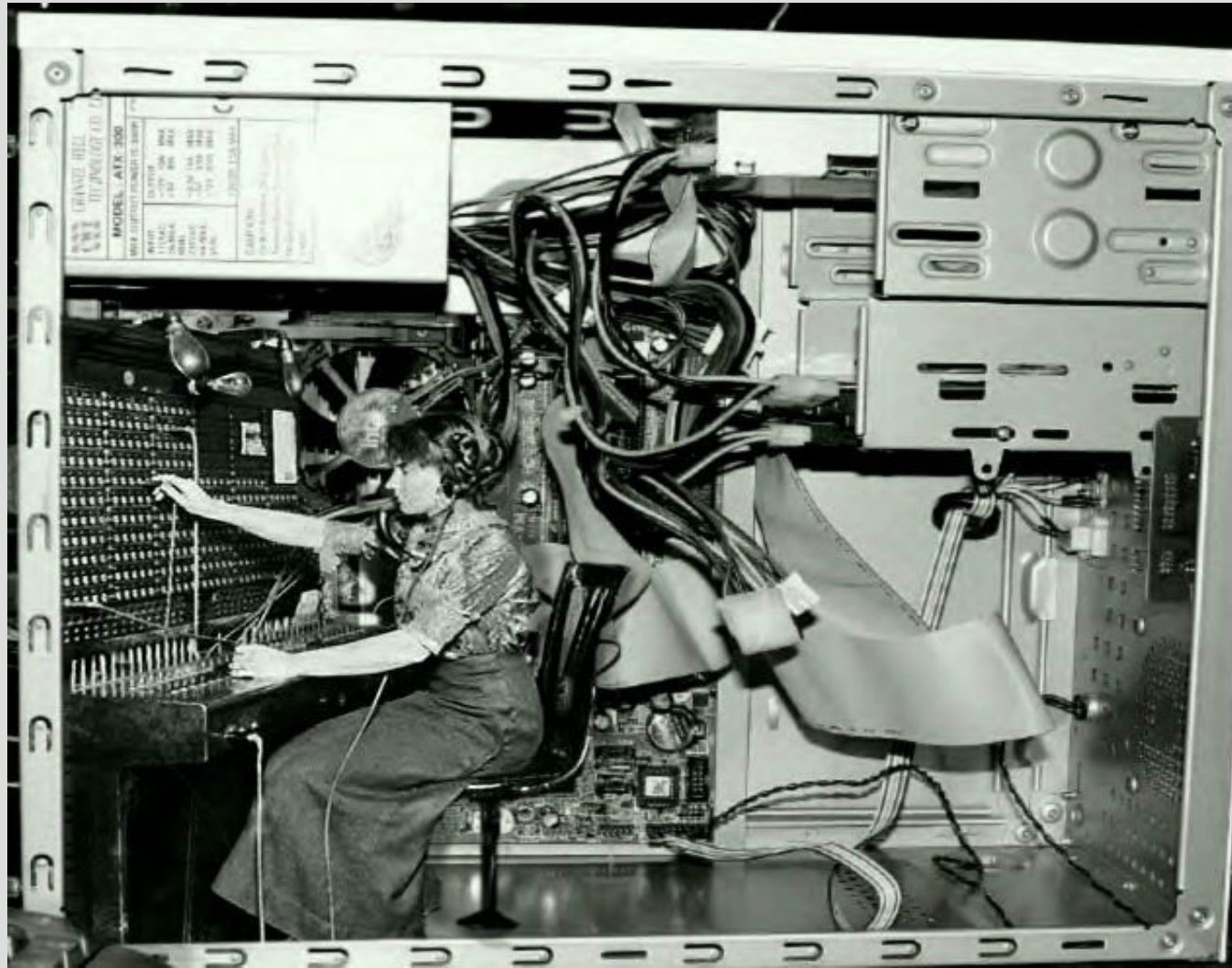
Who can call me?

- Anyone, by calling your 617 number

(I meant for free)

- Anyone who can call a SIPURL:
 - `covert@mit.edu`
- Anyone who has ISN dialing
 - (their access code) your MIT extension * 270 #

What is “Asterisk PBX”?



What can I do with it?

- Asterisk is fully scriptable, and you can do ANYTHING you can program.
- Example:
 - Port your \$40-\$70/month POTS (plain old telephone service) house phone (keep your number) that handles one call at a time to an ITSP (Internet Telephony Service Provider) such as VoicePulse for \$11/month for four calls at a time, and 2 cents per minute outgoing (incoming free).
 - Put a “house phone” on each floor. PoE now!
 - Incoming calls go to a Voice Menu, which can do ANYTHING.

How could the AILG IT committee help you?

- Once the community network upgrade project is finished, the AILG IT committee will be able to take on new projects. None of these are concrete yet, but may be considered:
 - Recommend ITSPs
 - Train you on doing your own Asterisk
 - Provide turnkey pre-built Asterisk solutions for your house servers
 - Operate centralized shared Asterisk service.

Demo / Play / Questions

- Demo of some fun things with Asterisk
- Questions?