

VOCERA WIRELESS COMMUNICATIONS SYSTEM AND SMARTPHONE USE

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Goal and Outline

- Goal: Introduce the Vocera Wireless Communications System, including the Smartphone Use
- Outline
 - Vocera Accounts and Account Profiles
 - Vocera System Architecture
 - Smartphone Introduction
 - Smartphone Use
 - Where to Obtain Help?

Vocera Features

- ▣ Powerful Vocera features:
 - Based on user profile and not on Smartphone ID
 - ▣ Anyone can pickup and use any Smartphone and have their customized options,
 - Like contacts, and
 - Call forwarding options
 - Email, text, call and broadcast to everyone in Group
 - ▣ Without looking up a single phone number or email address
 - Call forwarding
 - Integration with Lab PBX: full phone service

Vocera Accounts & Groups

- Vocera Account standard naming convention:
 - First initial followed by last name
 - Mary Westbrook's Vocera account is "mwestbrook"
- Vocera Groups for APS-IT similar to Remedy groups
 - A P S I T (all IT)
 - Controls (all Controls)
 - Everyone (all IT and all Controls)
 - I T Manager (Ken)
 - Linux Manager
 - MAC Manager
 - Network Manager
 - Network Technician
 - P C Manager
 - Printer Manager
 - Unix Manager
 - XRAY PC Manager
 - XRAY Unix Manager
 - Vocera Admin (Steve and Mary)

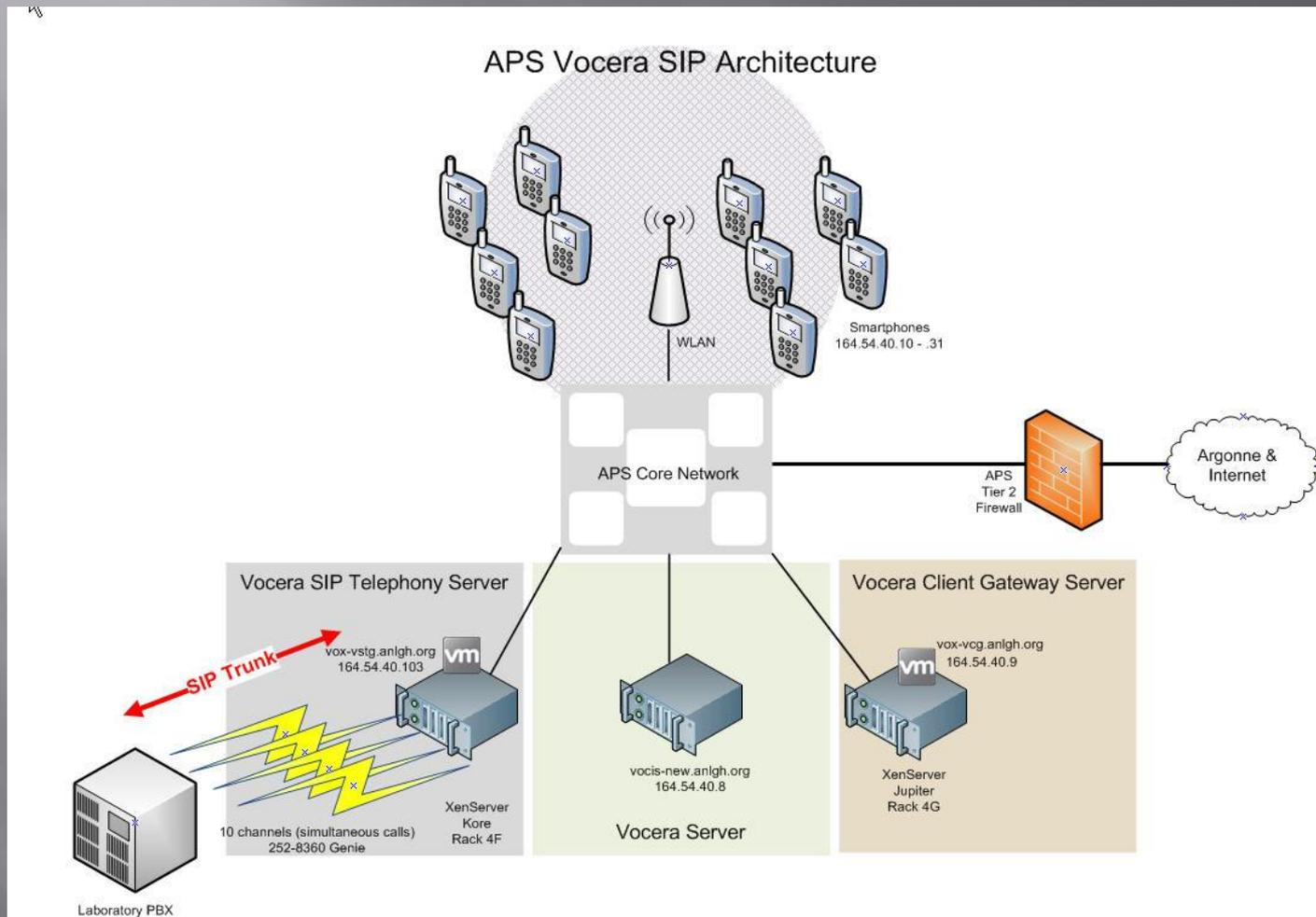
Vocera User Web Console

- ▣ Login to the Vocera User Console at:
 - <http://vocis.anlgh.org/console> using IE only
 - Login: FirstInitial+LastName, mwestbrook
 - If password is set, enter password
- ▣ Vocera User Console is used to customize a user's profile
 - Call forwarding
 - Add Contacts (Buddies)
 - RECOMMENDATION: Don't make unnecessary changes

Vocera Genie

- ▣ Genie persona named “Jean” or “Mark”, by default
- ▣ Can change genie using Vocera User Console
- ▣ To change Genie persona,
 - Login to <http://vocis-new.anlgh.org/console/index.jsp>
 - Announcements->Genie Persona
 - Select personality
 - Save Changes

Vocera Network



Vocera Range

- Wireless phone range limited to range of wireless network
- APS wireless network:
 - Bldg. 382
 - Bldg. 400a
 - Bldg. 400 Experimental Floor
 - Bldg. 401
 - Bldg. 402 Conference Center
 - Bldg. 411/412
 - Bldg. 420
 - Bldg. 431-438 LOMs
 - Bldg. 450
 - Bldg. 460 Argonne Guest House
 - Future: Storage ring, accessible during shutdown
- If you are off net or not logged into Vocera, your call forwarding options can help

Vocera SIP Upgrade

- SIP, **Session Initiation Protocol**, standard protocol for VoIP and other text and multimedia sessions
 - Instant messaging, video, online games and other services
- Text based protocol, much like HTTP
- Benefits
 - Upgrade from analog to IP telephony
 - Improved call quality
 - Caller ID feature
 - Compatible with VMware VMs
 - Support for legacy PBX systems
 - CIS has configured a single SIP trunk connection with 10 channels (simultaneous calls)
 - \$5K for PBX upgrades:
 - 10 SIP licenses
 - Required PBX hardware : IPI card
 - Software only solution
 - No longer rely upon old hardware
 - 10 year old server
 - 10 year old dialogic analog card
- For more information,
 - http://www.vocera.com/assets/pdf/datasheets/ds_siptelephony_0810_v2.pdf

Vocera Network

- Vocera Servers running v4.3 SP1
 - Vocera Server
 - Vocera Client Gateway (VCG)
 - Vocera SIP Telephony Gateway (VSTG)
- Vocera IP subnet: 164.54.40.0/24, VLAN 40
- “Vocera” SSID propagated throughout APS wireless network
 - Security mode: WPA-2 pre-shared key
 - Encryption: AES
- Smartphones operate at:
 - 2.4 GHz 802.11b/g
 - 5.0 GHz 802.11a
 - APS blocking 802.11b
 - Have observed Smartphones connecting at both:
 - 802.11a
 - 802.11g

Smartphone Deployment

- ▣ Motorola Smartphones (16 IT and 5 Controls)
 - Windows Mobile 6.1
 - Vocera v4.3 firmware
- ▣ Currently, using tethered configuration to deploy
 - Manual process
 - Must touch every Smartphone
- ▣ Using Motorola EWP Provisioning Tool v1.15 to build site-specific Vocera.cab file
- ▣ MS Active Sync (XP) or Windows Mobile Device Center (W7) on laptop
 - Firmware update/Install CAB files
- ▣ Manually set date/time
- ▣ Another Deployment Option:
Motorola Mobility
Services Platform (MSP)



Vocera Smartphone Anatomy

1. Speaker key
2. Holster latches
3. Volume up/down
4. Vocera Call button "Vocera Call" key
5. DND/Hold button
6. Rapid wall charger jack/USB cable port
7. Desktop charger contacts
8. Earpiece/upper microphone
9. Navigation key
10. Select key
11. Left soft key
12. Home key
13. Call/Answer key "Cell phone call" key
14. Speakerphone/lower microphone
15. Right soft key
16. Back key
17. Power/End key
18. Lanyard point
19. Headset jack



Smartphone Home Screen

- ▣ Status Indicators
- ▣ Recently used programs
- ▣ Home key
- ▣ To navigate:
 - Use on-screen soft keys
 - Use navigation keys
- (▲ ► ▼ ◀) Home key
- ▣ To select:
 - Use select key

Recently Used Programs

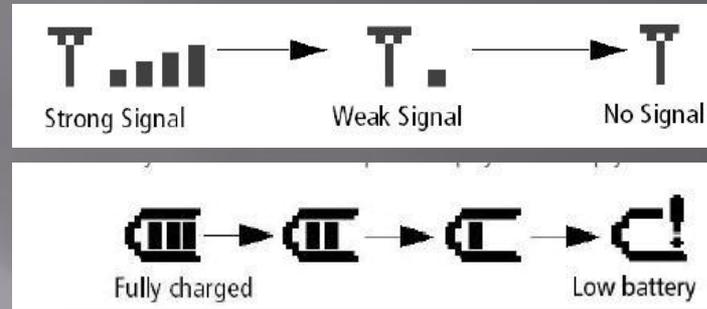
Status Indicators



On-screen Soft keys

Smartphone Status Indicators

- Wireless Service
- Battery Power
- Wireless Connection Status
- Speaker mode
- New message notifications:
 - Text
 - Email
 - Voice mail



Smartphone Display

- ▣ Automatic adjustment of the display brightness
- ▣ To save battery life, your display backlight turns off when not in use
- ▣ The backlight turns on when you press any key
- ▣ When in an application, use the navigation keys, to turn on backlight

Lock/Unlock Smartphone Keypad

- ▣ Lock keypad
 - You may want to lock the keypad to prevent accidental keystrokes
 - Press and hold the Home button and the quick list will display, select “Lock”
 - When keypad is locked, speaker mode is also locked
 - If you locked the keypad while in “speaker on” mode, it remains in “speaker on” mode
- ▣ Unlock keypad
 - Hit soft key under “Unlock”, followed by the asterisk

Smartphone “Getting Started”

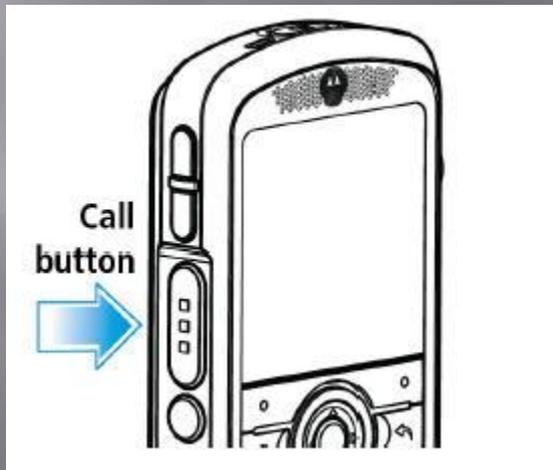
- ▣ Power on/off
 - Use Power/End key
- ▣ Toggle “Speaker” mode using “speaker” key on top
 - Speaker is off, by default
- ▣ Interact with Genie by issuing commands
 - Login
 - ▣ Press “Vocera Call” button and state your first and last name
 - Logout
 - ▣ Press “Vocera Call” button and state command “Logout”
- ▣ Calling
 - Smartphone works similar to a cell phone in terms of answering and disconnecting a call
 - Answer a call, use “Call/ Answer key”
 - ▣ Can also answer a call with “Vocera call” key
 - Disconnect a call, use “Power/End key”

Smartphone Calling

- ▣ Type of call
 - Call another Vocera user
 - Call Argonne phone extension
 - Call an outside number
- ▣ Call using Genie
 - Issue command:
 - ▣ “call Steve Potempa”
 - ▣ “call extension 2 8 9 1 4”
 - ▣ “call an outside number”
 - 6 3 0 2 1 7 9 5 2 5
- ▣ Call using Smartphone keypad
 - 2 8 9 1 4, push “Call/Answer” key
 - 7 1 6 3 0 2 1 7 9 5 2 5, push “Call/Answer” key

Answer a Call

- ▣ To answer a call,
 - ▣ Press the “Vocera call” key OR
 - ▣ Press the “cell phone call” key



How Can Someone Call You?

- ▣ Anyone can reach you by calling the Vocera Genie:
 - 2-8360 from inside the Lab, or
 - 630-252-8360 from outside the Lab
 - State name of person you are trying to reach, as “FirstName LastName”
 - If you are logged into Vocera, Smartphone rings
 - If not logged in, what happens is based on forwarding configured for your account
 - ▣ Call forwarded to your desk phone
 - ▣ Call forwarded to your cell phone
 - ▣ User is informed you are not reachable

No Smartphone Call Log

- ▣ What happens if you miss a call?
 - You hear it ring, but don't answer in time?
- ▣ Per Vocera tech support,
 - Caller name or number will be displayed on the Smartphone screen (you would just have to notice it)
 - No easy way to look up who just called from the Smartphone
 - No way to call back the number that just tried to call you
 - No call log on the Smartphones, like there is with a cell phone
 - ▣ Initial code programmed for badges, later ported to Smartphones
 - ▣ Call log was not a feature of badges
 - ▣ Vocera is considering call log implementation for Smartphones (possible future enhancement)
- ▣ Work arounds:
 - Caller can leave you a voice message on Smartphone
 - Or, setup call forwarding
 - ▣ Forward to desk or cell phone, and caller can leave a voice mail message

Automatic Call Forwarding Smartphone to Desk Phone

- Can update call forwarding in the Vocera User Console at:
 - <http://vocis.anlgh.org/console/index.jsp>
 - Login as first initial last name, mwestbrook
 - Use your Vocera password (ask Mary for help)
 - **Must use IE only**
- Everyone's desk and call phone have already been entered
 - If don't have a cell phone listed on IT Group card, no cell phone has been entered
- Setup Call Forwarding
 - Click on Basic information->Phone
 - Check that your office extension is correct
 - Enter your cell phone number, optional
 - Click on Call Forwarding on menu on left
 - Check box "Forward calls to desk phone"
 - Check box "Offline", forwarding occurs only when you are not logged in or are off the network
- Save changes
- Caller does not know the forwarding is occurring
 - Unless they have caller ID

Vocera User Console Call Forwarding

The image shows two overlapping screenshots of the Vocera User Console. The top screenshot displays the 'Call Forwarding' settings page, and the bottom screenshot displays the 'Basic Information' page.

Call Forwarding Options

Select whether and where incoming calls are forwarded. Note that these settings can also be configured in the system settings.

No Forwarding

Forward To Company Voice Mail

Forward To Another Badge, Group, or Address Book Entry

Forward To Desk Phone

Forward To Cell Phone

Forward To Home Phone

Forward To Another Number

Forward When

All All calls are forwarded -- your badge won't even ring.

Unanswered All calls you don't answer are forwarded.

Offline Forwarding occurs only when you are not logged in or are off the network.

Basic Information

Telephone Information

Desk Phone or Extension	Cell Phone
<input type="text" value="2-8914"/>	<input type="text" value="630-217-9525"/>
Home Phone	Pager
<input type="text"/>	<input type="text"/>
Vocera Extension	Dynamic Extension
<input type="text" value="9735"/>	<input type="text"/>
PIN for Long Distance Calls	
<input type="text"/>	
Phone Password	Re-enter Phone Password
<input type="text"/>	<input type="text"/>

Forward Calls

Smartphone to Cell Phone

- ▣ Use command, “Forward calls to my cell phone”
- ▣ For this to work, you cell phone number must be entered into your Vocera account profile
 - <http://vocis-new.anlgh.org/console/index.jsp>
 - **NOTE: Use IE only**
 - Click on Basic information->Phone
 - ▣ Check that your cell phone number is entered correctly
 - Save changes
- ▣ To disable, use command, “Cancel Forwarding”

How to Use Temporary Forwarding?

- ▣ You can tell the Vocera Genie to forward calls to an extension, like this:
 - "Forward my calls to extension 2-3-4-5-6"
 - If you forward calls, it won't ring the Smartphone at all, it will go directly to the extension
- ▣ To stop temporary forwarding calls,
 - Issue command:
 - ▣ "stop forwarding" or
 - ▣ "cancel forwarding"

Call Waiting

- ▣ If you hear a call-waiting tone during a call, it means that someone is trying to call you
- ▣ The name of the person calling you will flash on the Smartphone display
 - This name will be different from the person you are currently speaking with
- ▣ To accept call:
 - Press “call” button (cell phone call button)
 - ▣ Puts first call on hold
 - ▣ Answers second call
 - When done, press “call” button again
 - ▣ Returns you to first call
- ▣ To refuse call:
 - Ignore call waiting signal OR
 - Press Hold/DND button to cancel incoming call

Place Call on Hold

- ▣ To place a call on hold:
 - Press Hold/DND button
 - Other party is notified that the call is on hold
- ▣ To rejoin a call:
 - Press Hold/DND button
 - You are notified that you are rejoining a call on hold
- ▣ While call is on hold, can't use the keypad to make another call
 - However, you can use the Genie to make a call

NEW! Forward Calls Desk Phone to Smartphone

- Each Smartphone user has been assigned a Lab phone number
- Step 1: Forward your desk phone to the Lab number assigned to you (ITE-12 phone, use “*3” and enter forwarding number)
- Step 2: When a call to desk phone is received, it is forwarded to Lab number
- Step 3: Lab Telephony System receives call and sends call to Vocera SIP Trunk
- Step 4: Vocera Server, checks which user profile to forward the call to and connects the call
- To cancel forwarding, using ITE-12 phone, use “#3”

Note: Others can call your Smartphone directly using your assigned phone number

Mike Bauer	2-9732
Ryan Brody	2-9741
Tad Budraitis	2-9747
Fred Carter	2-9748
Clarence Clark	2-9754
Dave Cyl	2-9761
Dan Devito	2-9762
Tim Hentsch	2-9767
Joe Hermans	2-9768
Greg Knott	2-9769
Dave Leibfritz	2-9772
Troy Lutes	2-9774
Joe Midlock	2-9776
Steve Potempa	2-9777
Brian Pruitt	2-9778
Darryl Reigle	2-9780
Brian Robinson	2-9781
Roger Sersted	2-9782
Ken Sidorowicz	2-9783
Jon Smejkal	2-9787
Arista Thurman	2-9788
Dave Wallis	2-9789
Mary Westbrook	2-9735

Send a Broadcast

- ▣ Press “Vocera call” button to call Genie
- ▣ Issue command:
 - “broadcast group-name”
- ▣ You will hear a tone
- ▣ Speak your message
- ▣ Press “call end” button when done
- ▣ Use a “broadcast” to send an announcement to an entire group
- ▣ Recipients can speak to group by pressing and holding the “Vocera call” button (walkie-talkie mode)
- ▣ Different than calling a group
 - Calling a group connects you to the first available member of the group

Send/Retrieve/Delete a Voice Message

- ▣ To send a voice message:
 - Use “Vocera call” button to call Genie
 - Issue command:
 - “record a message for firstname lastname”
 - “record a message for mary westbrook”
- ▣ To retrieve a voice message:
 - Genie informs recipient that there is a waiting message
 - Issue command:
 - “play messages”
 - Will hear the recorded voice of the person who sent the message
- ▣ To delete voice messages:
 - Issue command:
 - “delete all messages”

Vocera Apps

- ▣ Texting and Email is done through Vocera Apps
 - Favorites
 - Company Directory
 - ▣ Lookup any user with a Vocera account
 - ▣ Add Vocera user as a Favorite
 - build your contact list
 - ▣ Call another Vocera user
 - ▣ Send a text message to another Vocera user
 - Messaging
 - ▣ Email (text only)
 - Settings

Favorites/Buddies

- Add Favorites (Buddies)
 - Vocera User Console (recommended)
 - On Smartphone
 - Company Directory
 - Add contact manually
- Add “Outside Buddies” using User Console

The screenshot shows the Vocera User Console interface in a web browser. The main page is titled "Buddies" and displays a table of existing buddies. A sidebar on the left contains navigation links, with "Buddies" highlighted. Below the table, there are buttons for "Add Buddy" and "Add Outside Buddy". An "Edit Outside Buddy" dialog box is open, showing a form to add a new contact.

Type	Full Name	Nickname	VIP Status	Ring Tone	Site
	Bauer, Mike	Mike		Ring-Tone-01	Global
	Midlock, Joe	Joe Midlock-Global			Global
	Potempa, Steve	Steve Potempa-Global			Global
	Westbrook, Aaron	Aaron			
	Westbrook, Mary				

Edit Outside Buddy

You can add/edit a buddy who is an outside contact (not a badge user). This buddy will use a telephone to call your badge and to accept calls from your badge.

First Name * Last Name *

Nickname *

Phone Pager

Email Address

Send/Receive Text Messages

- ▣ To send:
 - Select Vocera User
 - ▣ Vocera Apps->Favorites OR
 - ▣ Vocera Apps->Company Directory
 - Menu->Text Message
 - Enter text message
 - ▣ Check out “Quick notes”
 - Click on left soft key to “send”



Message from Mary Westbrook
Hi!

- ▣ To receive:
 - Will hear a tone on Smartphone
 - Check screen for text message

Delete Text and Email Messages

- ▣ Delete one-at-a-time
 - Text
 - Email
- ▣ Delete all text and email messages
 - Issue command:
 - ▣ “delete all text messages”
 - ▣ Give it some time

NEW! Send Email to Smartphone

- ▣ Send email to svcvocera@aps.anl.gov
 - Svcvocera setup as:
 - ▣ ANL service account, and
 - ▣ Zimbra mailbox
- ▣ Email message must be a text message
 - (not html)
- ▣ Cannot send picture/images
- ▣ In the subject use Vocera username or Group
 - Send to me, use "mwestbrook" or
 - Send to group, like PC Managers, use "P C Manager"
- ▣ **NOTE: Everyone's Vocera account: first initial followed by last name**
- ▣ Persistent notification window

Received one or more messages.
Please check Inbox for all
messages.

Receive Email

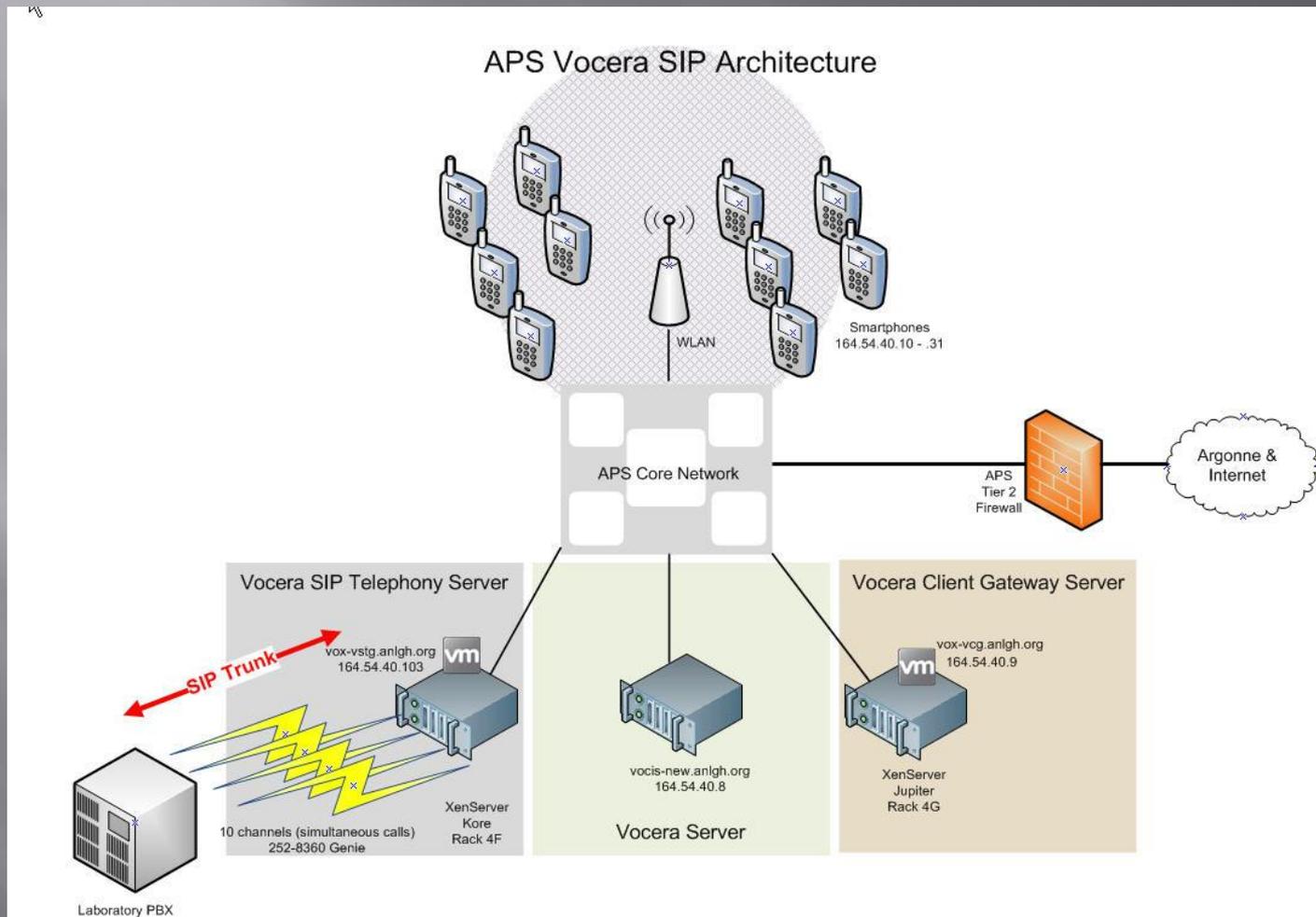
- When notice email notification, enter Vocera Apps
- Select “Messaging” icon
- Read message
- Play message



NEW! Where is?

- ▣ Vocera Server monitors Smartphone to AccessPoint associations
- ▣ The MAC address for each access point radio has been entered into the Vocera system
- ▣ And, each AP Radio MAC address has been associated with a location
- ▣ When issue “where is” command
 - Vocera returns the location
 - “where is Ken Sidorowicz?”

Vocera Network



“Searching for Gateway”

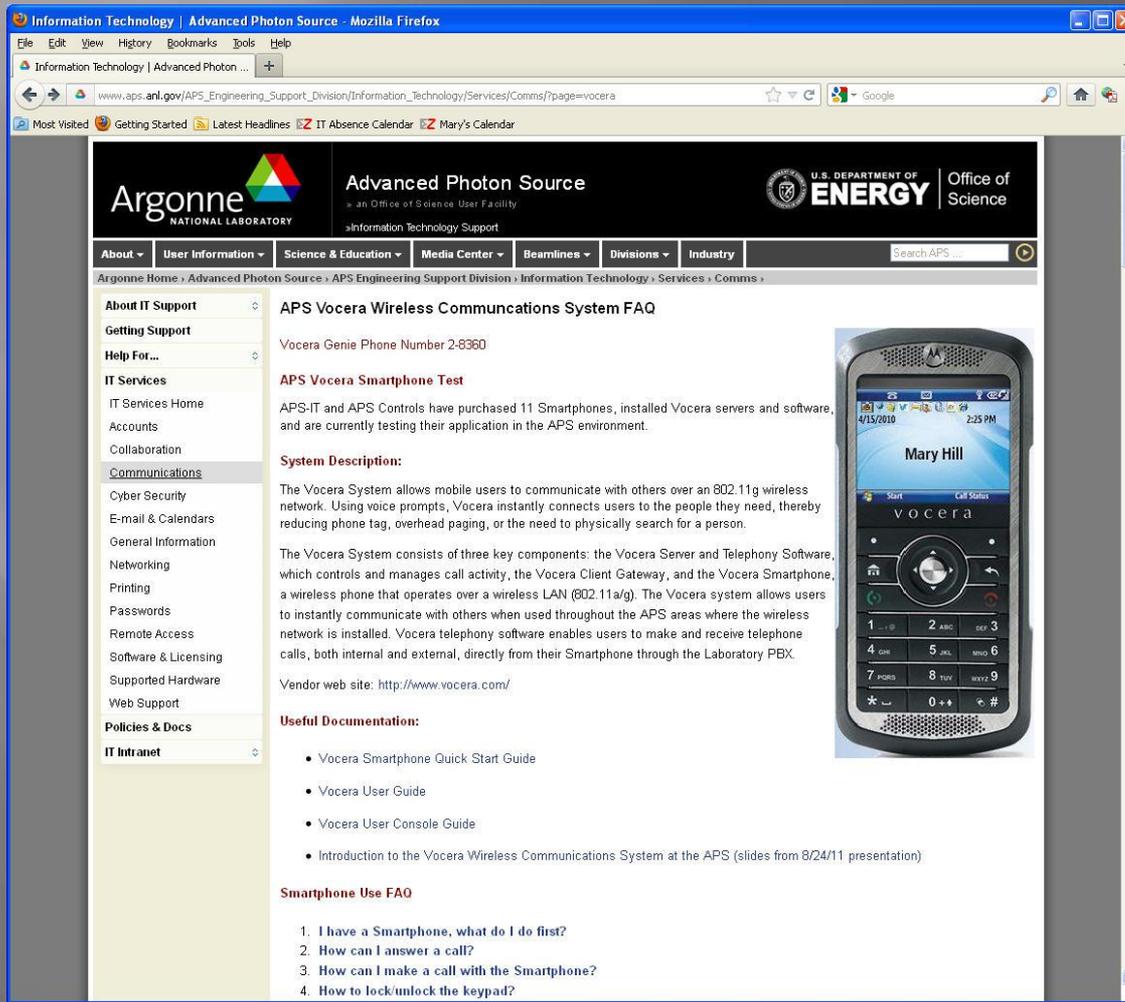
- ❑ Smartphone must be able to reach Vocera Client Gateway Server (VCG)
- ❑ **Your Smartphone** is unable to communicate with the VCG
 - Poor signal or no signal in your area
 - Wireless interference problems in your area
 - Network problems
- ❑ **All Smartphones** cannot communicate with VCG
 - May require reboot of VCG Server
 - Please notify Steve or Mary
- ❑ Recently resolved a problem of the Smartphones not working in areas supported by HP MSM460 access points
 - Wireless controllers and access points firmware upgrade
 - **Version 5.7.0.3-11516**

Where to Obtain Help?

- ▣ For Vocera assistance, contact Mary or Steve directly
- ▣ Mary or Steve will contact Vocera technical support, if needed
- ▣ Vocera FAQ web page
 - http://www.aps.anl.gov/APS_Engineering_Support_Division/Information_Technology/Services/Comms/?page=vocera
 - Smartphone Quick Start Guide
 - Smartphone User's Guide
 - ▣ Speed Dialing
 - ▣ Contacts
 - ▣ Set a photo or picture as background
 - ▣ Internet browsing
 - ▣ More

Vocera FAQ Page

- Updates are added to the Vocera FAQ page



The screenshot shows a Mozilla Firefox browser window displaying the Vocera FAQ page. The page header includes the Argonne National Laboratory logo, the text "Advanced Photon Source" (an Office of Science User Facility), and the U.S. Department of Energy Office of Science logo. A navigation menu contains links for About, User Information, Science & Education, Media Center, Beamlines, Divisions, and Industry. The main content area is titled "APS Vocera Wireless Communications System FAQ" and includes sections for "Getting Support" (Vocera Genie Phone Number 2-8360), "APS Vocera Smartphone Test" (describing the purchase and testing of 11 smartphones), "System Description" (explaining the 802.11g wireless network and the three key components: Vocera Server and Telephony Software, Vocera Client Gateway, and Vocera Smartphone), "Useful Documentation" (listing guides and presentations), and "Smartphone Use FAQ" (listing four common user questions).

Information Technology | Advanced Photon Source - Mozilla Firefox

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www.aps.anl.gov/APS_Engineering_Support_Division/Information_Technology/Services/Comms/?page=vocera

Most Visited Getting Started Latest Headlines IT Absence Calendar Mary's Calendar

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 - Web Support
- Policies & Docs
- IT Intranet

APS Vocera Wireless Communications System FAQ

Vocera Genie Phone Number 2-8360

APS Vocera Smartphone Test

APS-IT and APS Controls have purchased 11 Smartphones, installed Vocera servers and software, and are currently testing their application in the APS environment.

System Description:

The Vocera System allows mobile users to communicate with others over an 802.11g wireless network. Using voice prompts, Vocera instantly connects users to the people they need, thereby reducing phone tag, overhead paging, or the need to physically search for a person.

The Vocera System consists of three key components: the Vocera Server and Telephony Software, which controls and manages call activity, the Vocera Client Gateway, and the Vocera Smartphone, a wireless phone that operates over a wireless LAN (802.11a/g). The Vocera system allows users to instantly communicate with others when used throughout the APS areas where the wireless network is installed. Vocera telephony software enables users to make and receive telephone calls, both internal and external, directly from their Smartphone through the Laboratory PBX.

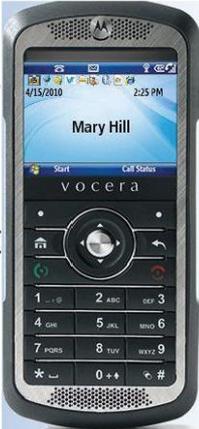
Vendor web site: <http://www.vocera.com/>

Useful Documentation:

- Vocera Smartphone Quick Start Guide
- Vocera User Guide
- Vocera User Console Guide
- Introduction to the Vocera Wireless Communications System at the APS (slides from 8/24/11 presentation)

Smartphone Use FAQ

- I have a Smartphone, what do I do first?
- How can I answer a call?
- How can I make a call with the Smartphone?
- How to lock/unlock the keypad?



Smartphone and Vocera Profile Customizations

- ▣ If too many customizations render Smartphone un-usable:
 - Master clear
 - Rebuild
- ▣ If Vocera account profile suffers from over-customization:
 - Will restore to “default” settings
- ▣ Or, if can't login to Vocera User Console
- ▣ Contact Mary for help

Going Forward

- ▣ We are still learning about the Vocera Wireless Communication System,
 - Continue to develop the Vocera FAQ page
 - Please share your experiences and report problems
- ▣ Possible future projects:
 - “Tweak” voice performance on wireless network (QOS)
 - Explore Motorola Mobility Services Platform (MSP)
 - ▣ Automate deployment of new Smartphones
 - ▣ Automate maintenance of existing Smartphones
 - ▣ Automate firmware updates
 - ▣ Automate date/time setting on Smartphones
 - Explore “Vocera Connect”
 - ▣ Android and iPhone Vocera solution
 - ▣ Evaluation requested
 - ▣ Requires upgrade to v4.3 SP1 build 2355
 - Current, v4.3 SP1 build 2349
 - ▣ 5-pack license and maintenance \$610
 - \$699 Smartphone + CAL

Thank You

- ▣ Thanks for your kind attention!
- ▣ Hope this presentation was helpful!

Vocera Funny Genie

- ▣ Issue command:
 - “turn funny genie on” (already on)
 - Enables alternate prompts and commands
- ▣ Try these commands:
 - Good bye
 - Beam me up
 - Beam me down
 - Call Captain Kirk
 - Make it so
- ▣ Issue command:
 - “turn funny genie off”
 - Must be disabled on server

