

Running Asterisk in a Corporate Environment: a Beginner's Tale

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How I Got into the Phone Business



Stephen Uhler

Astricon 2005

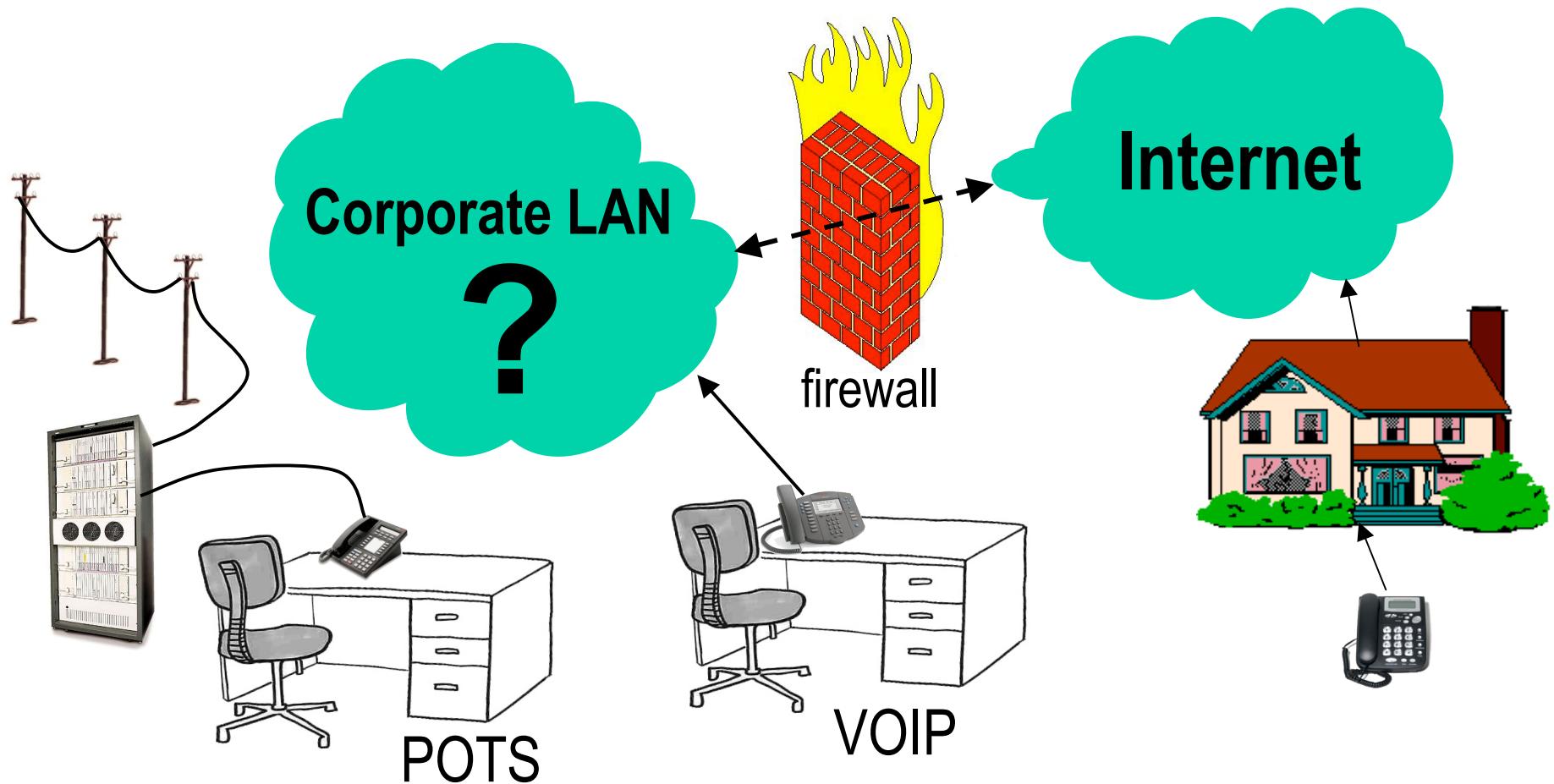
Sun Labs (2/19)

Early Asterisk Development

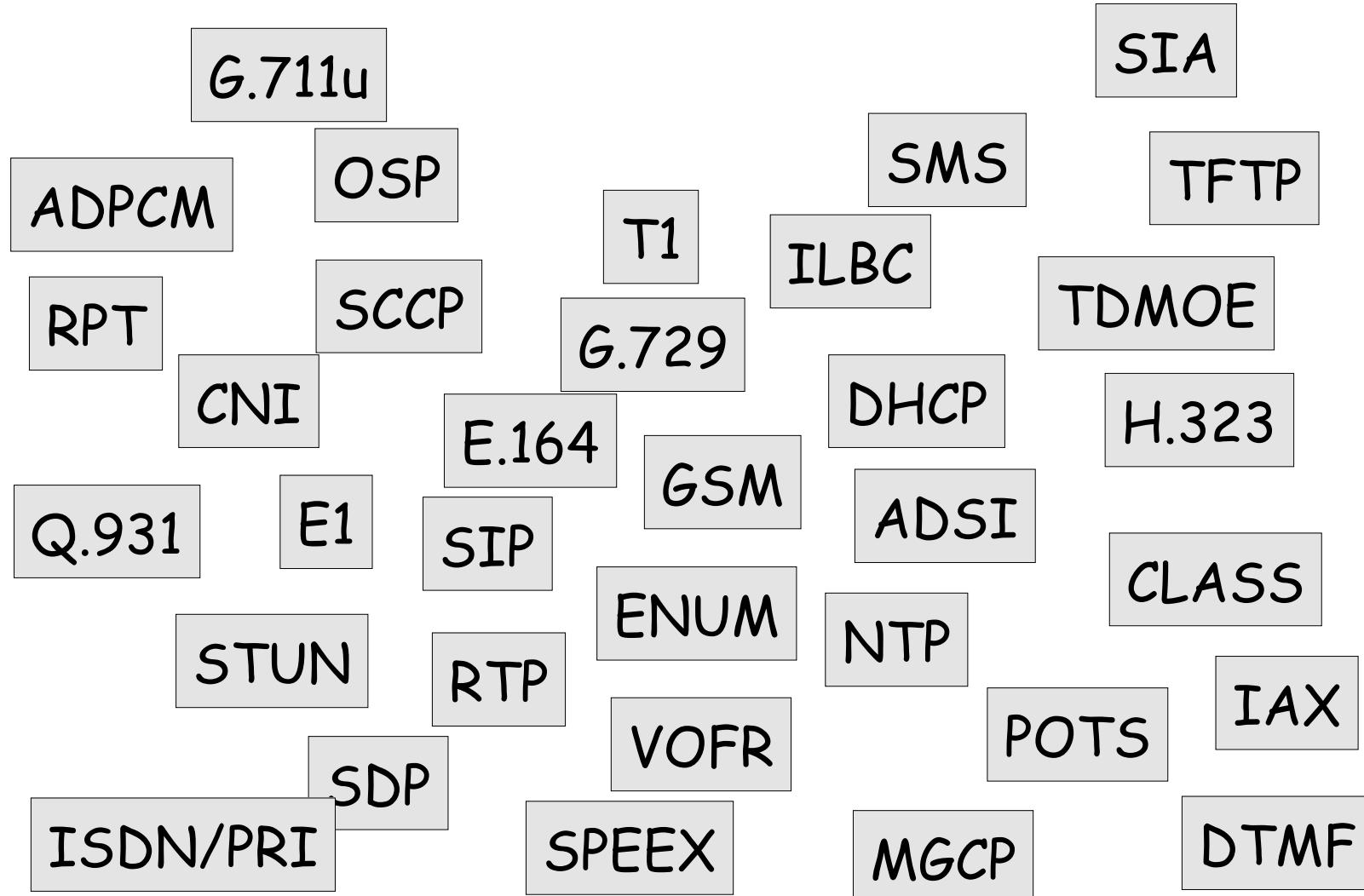


"No, no. It's three thumps for call waiting and
five thumps for call forwarding"

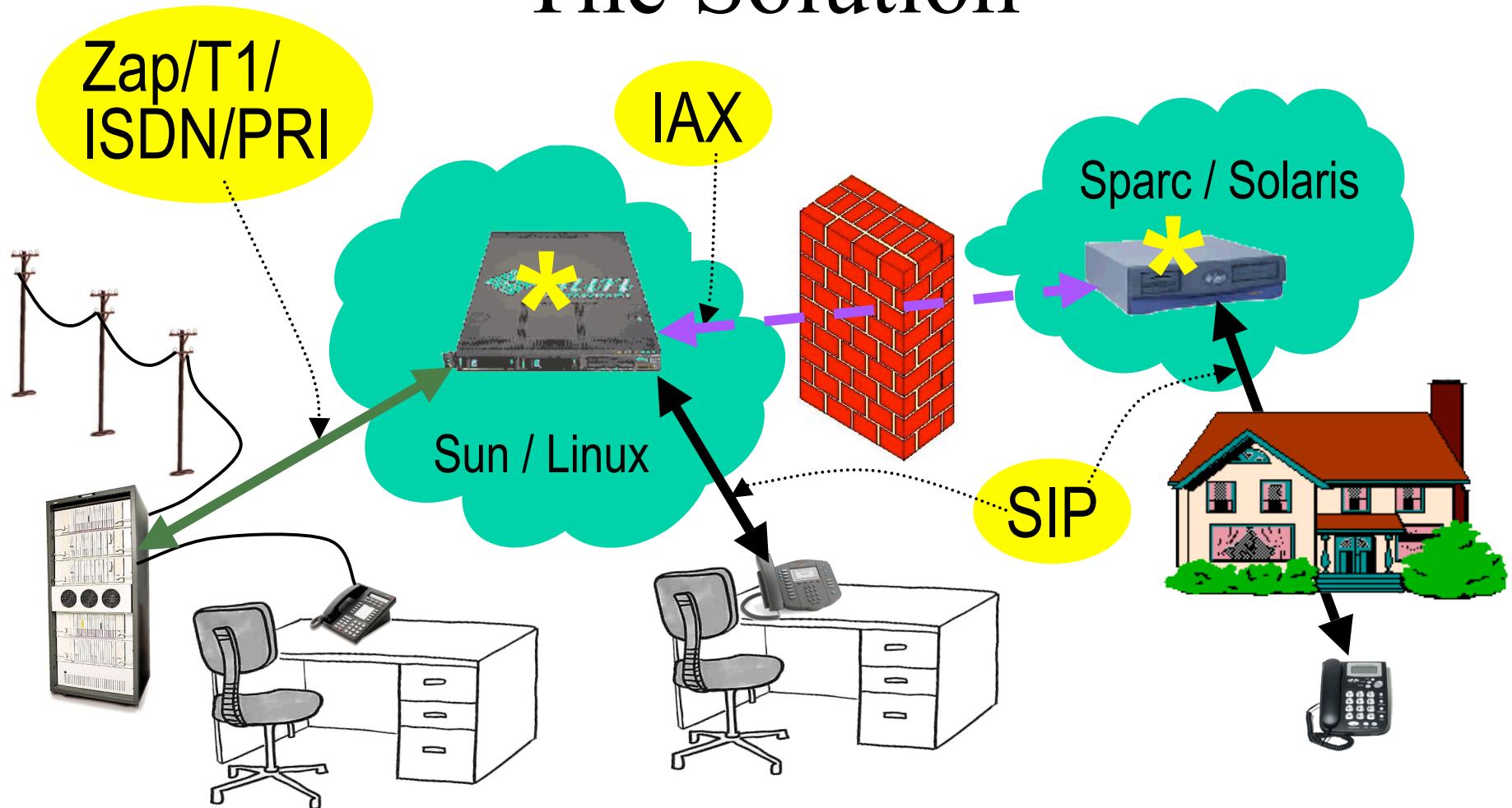
The Problem



VOIP Related Protocols



The Solution



Phone-y Expectations



“Can you hear me now?”



The good-old days, when hanging-up on someone actually meant something



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DHCP

in a Corporate Environment

- The “POTS” equivalent of connecting the wires
 - You don’t own it
 - It’s broken
 - It’s easy to spoof
 - The phones won’t work without it

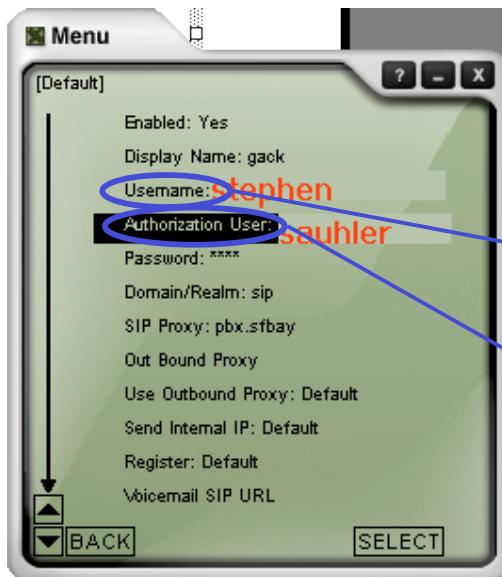


The Pieces

(from the config file perspective)

- **`sip.conf`**
 - To connect to commercial VOIP phones
- **`iax.conf`**
 - To traverse the corporate firewall
- **`zapata.conf`**
 - To connect to the existing telephony infrastructure
- **`extensions.conf`**
 - To tie everything together

SIP: Take 1



```

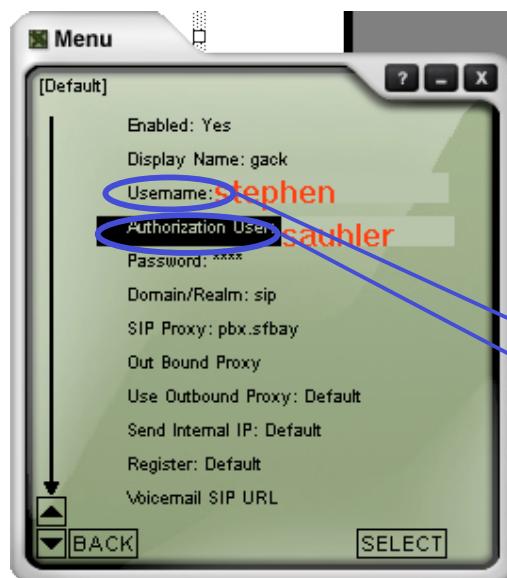
sip.conf
[xlite]
type=friend
username=stephen
secret=a_secret
callerid="Stephen" <18888>
authorization??

```



Sep 23 17:37:58 NOTICE[29805]: chan_sip.c:9530
 handle_request_register: Registration from
 'stephen <sip:stephen@sip>' failed for '129.150.27.47'

SIP: Take 2



sip.conf

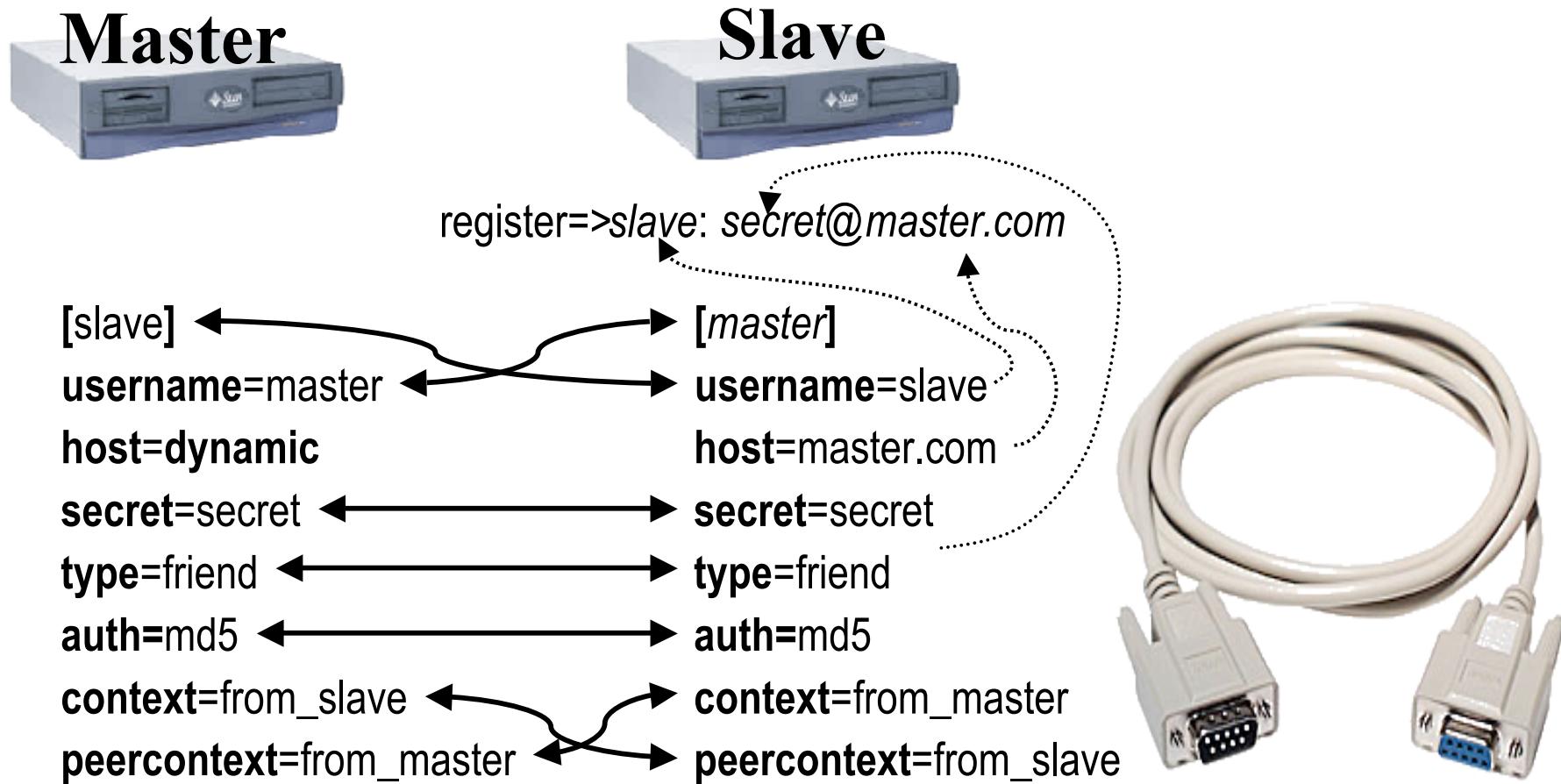
```
[stephen]
type=friend
username=stephen
secret=a_secret
callerid="Stephen" <18888>
authorization??
```

must match
for *

REGISTER sip:sip SIP/2.0

```
From: stephen <sip:stephen@sip>;tag=211106824
To: stephen <sip:stephen@sip>
Contact: "stephen" <sip:stephen@129.150.27.47:5060>
Call-ID: 2678041C0DAD46D08CC6E6913B6CCD04@sip
Authorization: Digest username="sauhler",realm="asterisk", ...
```

Connecting *'s with IAX: Making a VOIP “null modem” cable



Getting Zapped

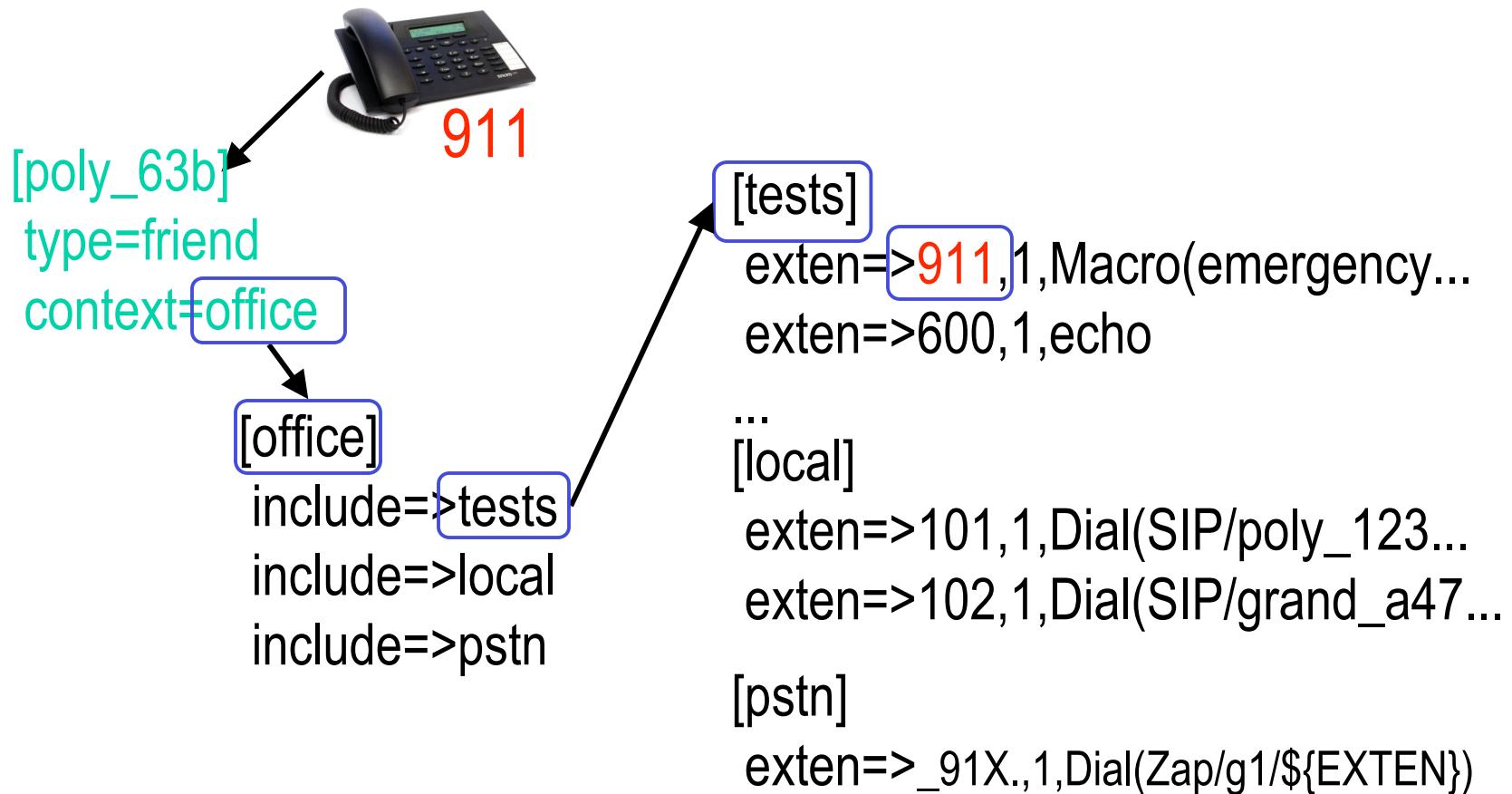
- How (not) to connect to the Company PBX
- Learn “Telco Speak”

Connect the TE110P to the G3R through the 120A2 CSU module with a TN464 circuit pack configured for ISDN-PRI protocol version “B” with mulaw companding over a T1 cross-cable.

Putting Contexts in Context

- Calls enter a context from a channel
 - SIP, IAX, Zap...
- Specify context *name* with:
 - context=*name* *iax.conf*, *sip.conf* ...
 - [*name*] *extensions.conf*
- Name context based on capability, not technology
- Put capabilities that connect channels in their own contexts

More Context



Contexts – Call Flow

extensions.conf
iax.conf



Dial(IAX2/**slave**/\${EXTEN})

[from_slave]
exten ...

[slave]
username=master
context=from_slave
peercontext=from_master

Slave

[**from_master**]
exten ...

[master]
username=slave
context=from_master
peercontext=from_slave

Contexts – Call Flow



extensions.conf
iax.conf

[from_slave]
exten ...

[slave]

username=master

context=from_slave

peercontext=from_master

Dial(IAX2/**master**/\${EXTEN})

[from_master]
exten ...

[master]

username=slave

context=from_master

peercontext=from_slave

A Caller-Id Example

; Send 5-digit caller-id to local extensions, 10-digit callerid otherwise

[macro-t1]

```
exten => s,1,Set(CALLERID(num)=$[IF(${MATH(${LEN(${MACRO_EXTEN})}>5,i)}}.${EXT_PREFIX}${CALLERID(NUM):-2}.)  
exten => s,2,Dial(Zap/g1/${MACRO_EXTEN})
```

..\${CALLERID(NUM)})

Sunlabs Setup

