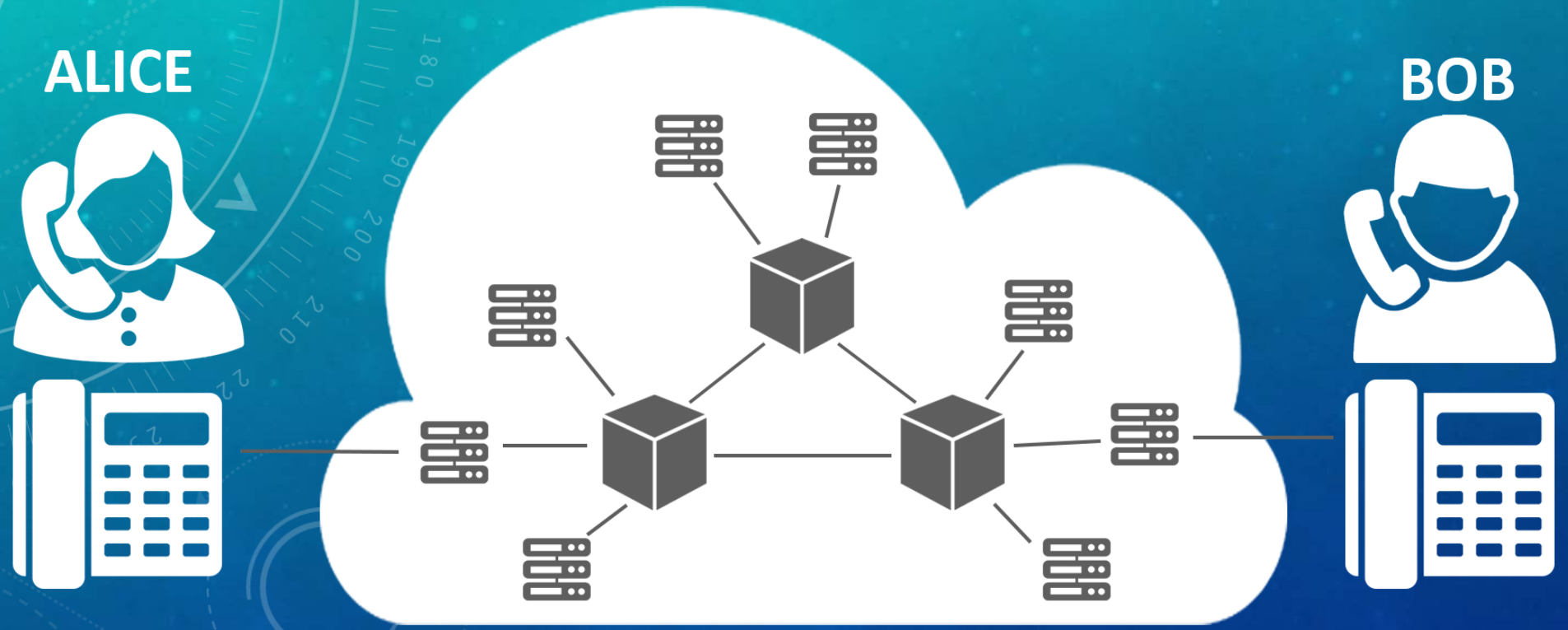
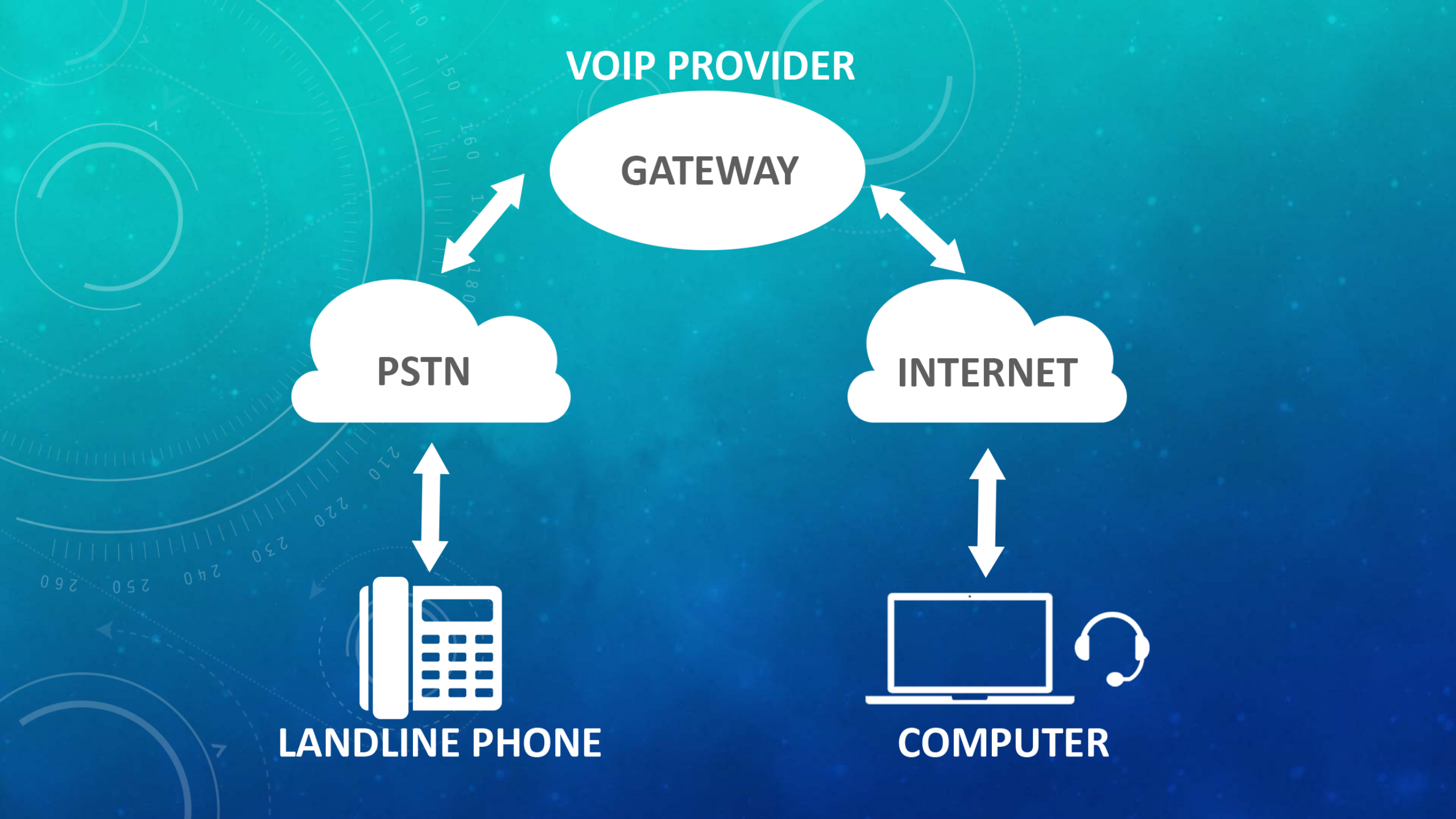
Caller ID Spoofing

BROUGHT TO YOU BY:

JOHN, KHURRAM, & MOHAMED

PUBLIC SWITCHED TELEPHONE NETWORK




VOIP PROVIDER
GATEWAY
PSTN
INTERNET
LANDLINE PHONE
COMPUTER

CALLER ID - METHODS

Voice over IP (Internet Protocol)

- Open source software (PBX, asterisk, FreeSwitch) and VoIP providers
- Minimal cost
- Some VoIP providers allow numbers to be configured

Caller ID Spoofing Services

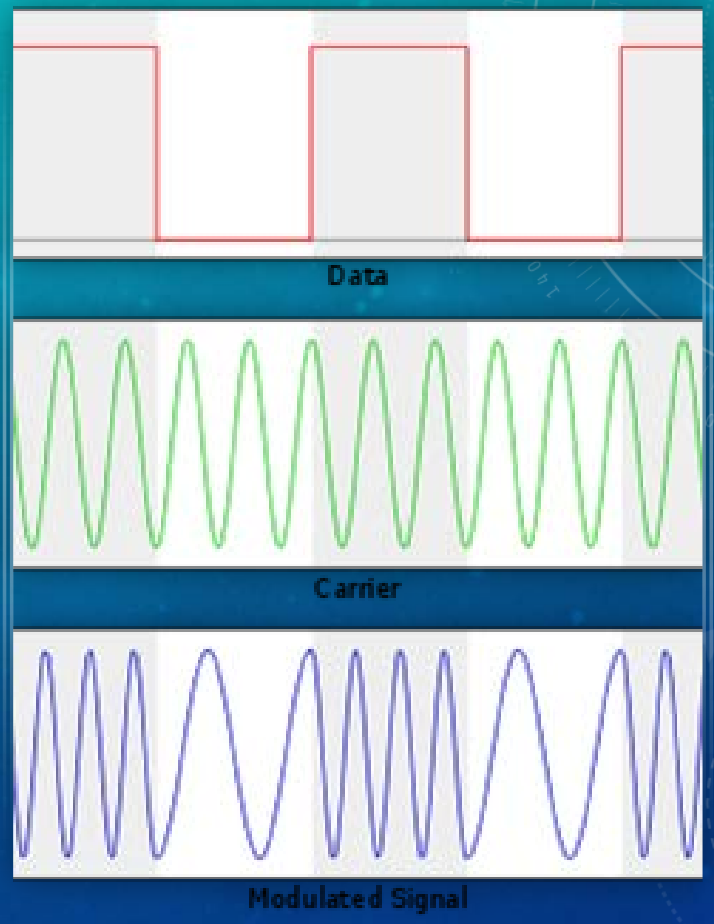
- Companies that offer spoofing services for a fee
- Very easy to use

Orange Box

- A combination of hardware and software that generates caller ID FSK signals
- Mimicks telephone providers central office equipment
- Requires direct connection to phone line

TRADITIONAL CALLER ID TRANSMISSIONS

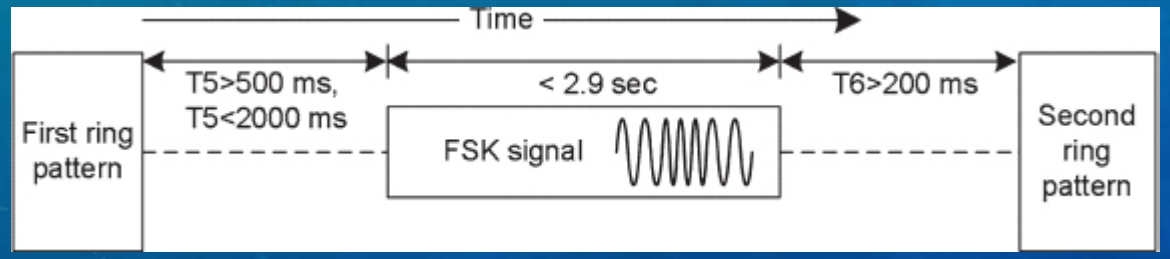
- Telephone providers transmit CID (Caller ID) based on client's information when making outgoing calls
- Frequency Shift Keying is used
  - One tone 1200 hz – binary 1
  - Other tone 2200 hz –binary 0

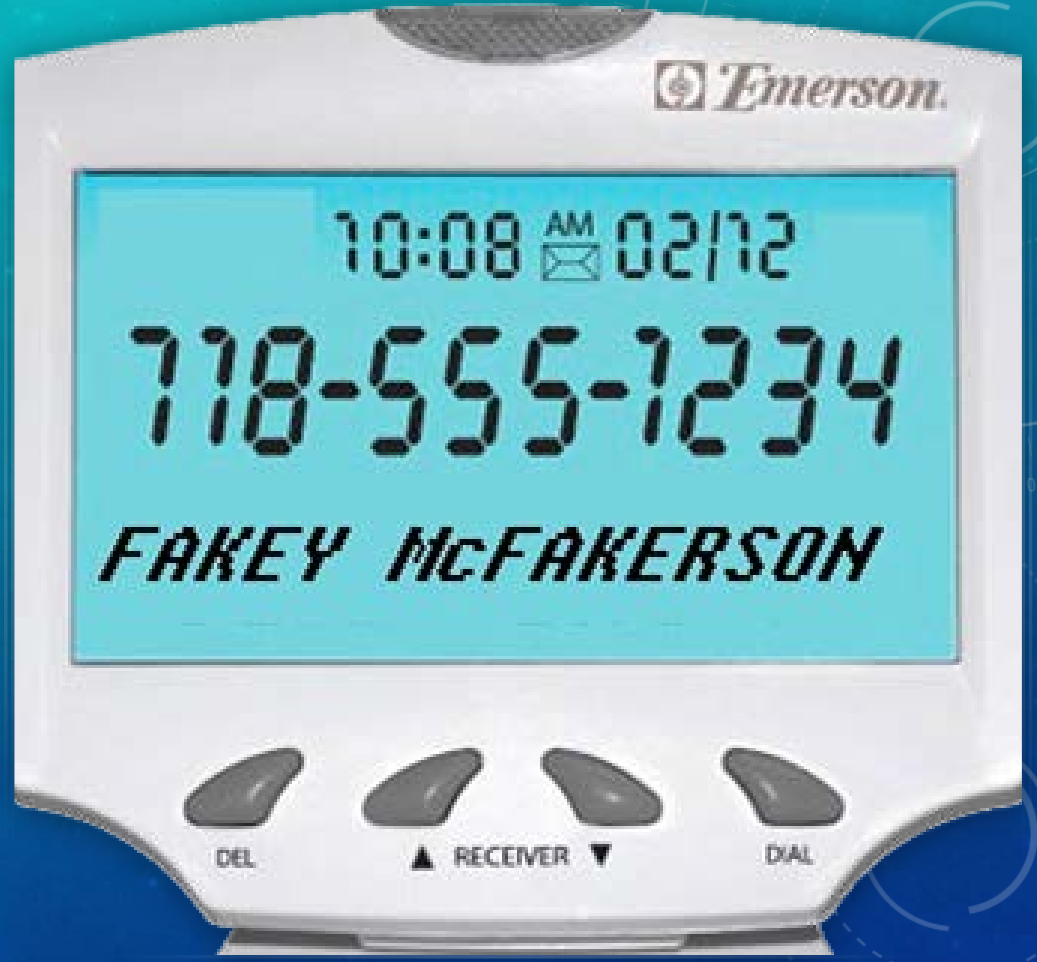


CALLER ID - MESSAGE

- Message is composed of ASCII characters

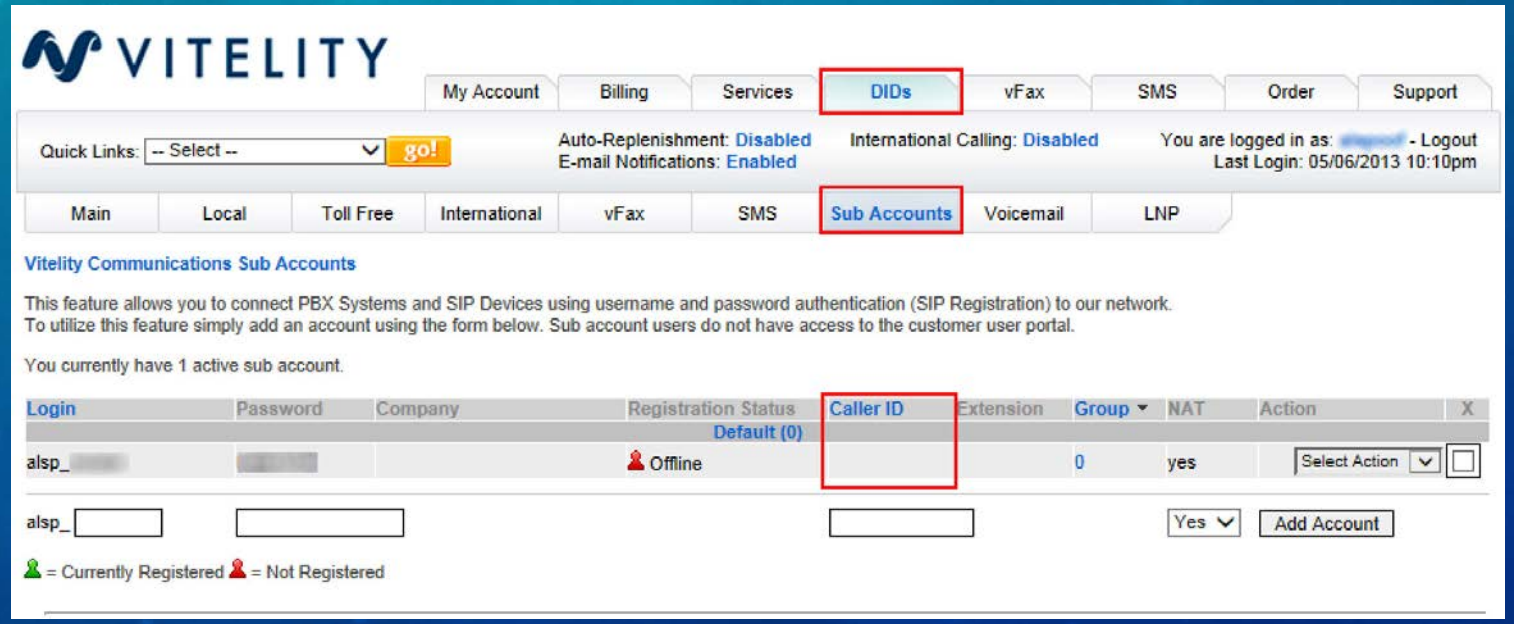
1. Initially, send a series of 1s and 0s are sent to synchronize timings
2. Send a series of 180 1s are sent
3. Send a byte representing type of message
4. Send a byte representing length of message
5. Send a byte representing month, day, hour, and minute
6. 10 digit phone number in 10 bytes
7. Checksum byte





VOIP CALLER ID SPOOFING

- Recall: VoIP requires gateway, which, creates connection between internet and PSTN
- Gateway is the point where VoIP caller ID spoofing occurs
- VoIP software is configured with outgoing caller ID
- Gateway will convert specified caller ID into signaling protocol used by PSTN



CIA ANALYSIS

- Caller ID spoofing impacts Integrity and Confidentiality
- **Integrity**
  - Caller ID spoofing allows for people to take on false identities
- **Confidentiality**
  - Caller ID spoofing has been used in the past to hack into voicemail systems, and access private messages

The INDEPENDENT

Richard Branson
My plot to free Zimbabwe from Robert Mugabe's tyranny
Interview, page 10

Hamish McRae
Don't lose faith in the EU – the markets haven't
Economic Life, page 69

In today's Arts&Books magazine
• Thea Gilmore
• Will Ferrell
• Alan Partridge

New hacking shame

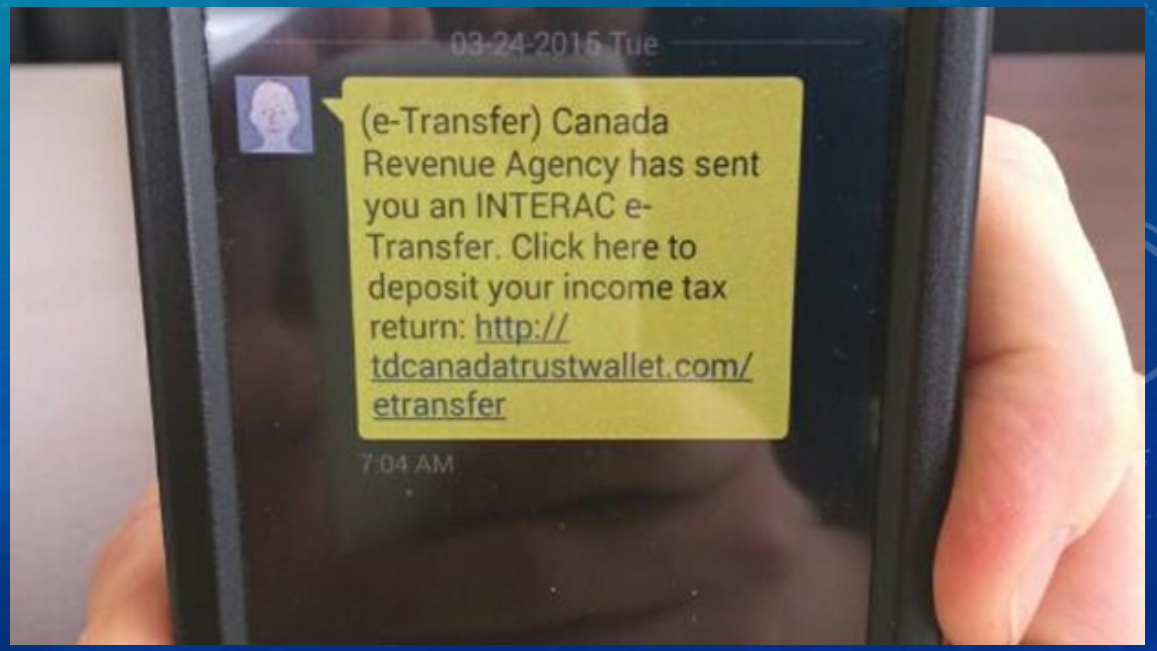
Exclusive Police were given evidence in 2002 that News of the World had access to illegally obtained messages from Milly Dowler's phone – but did nothing about it

POSSIBLE EXPLOITS

- SWATTING (SHOWN IN THE VIDEO EARLIER)
- VISHING (VOICE PHISHING)
- FRAUD
- PHONE SCAMS
- SOCIAL ENGINEERING

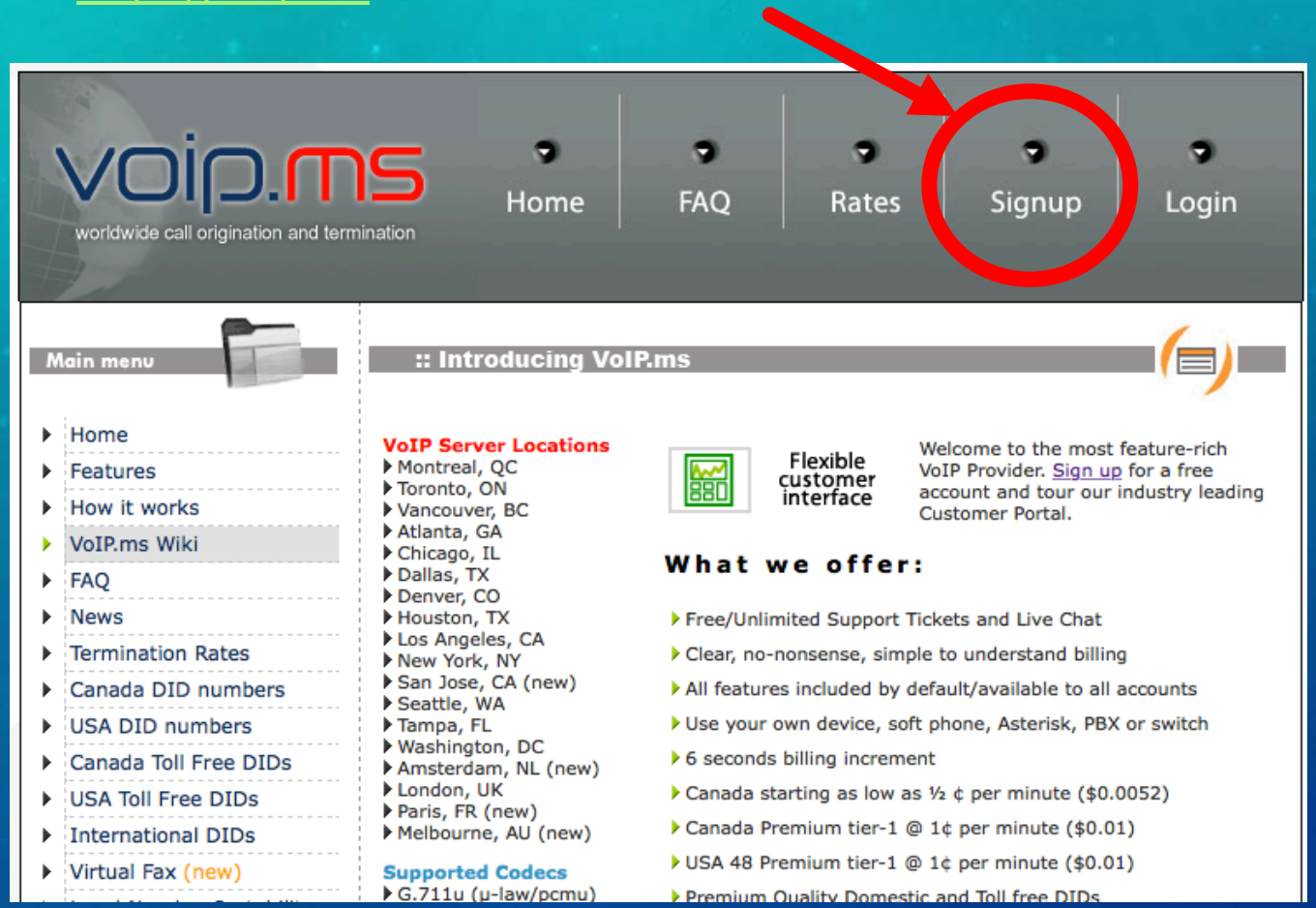
CRA SCAM

- Scammed originally occurred in 2015
- Fraudsters claimed to be CRA Agent
- Uses a spoof Caller ID which is the actual number of CRA
- Tells victim that there was mistake in tax return
- Threatens victim to pay penalty or they may face jail time
- Scam used again in Feb 2016 in Alberta
- Recently used to steal personal information



HOW TO: SPOOF YOUR CALLERID

Create an Account on https://voip.ms



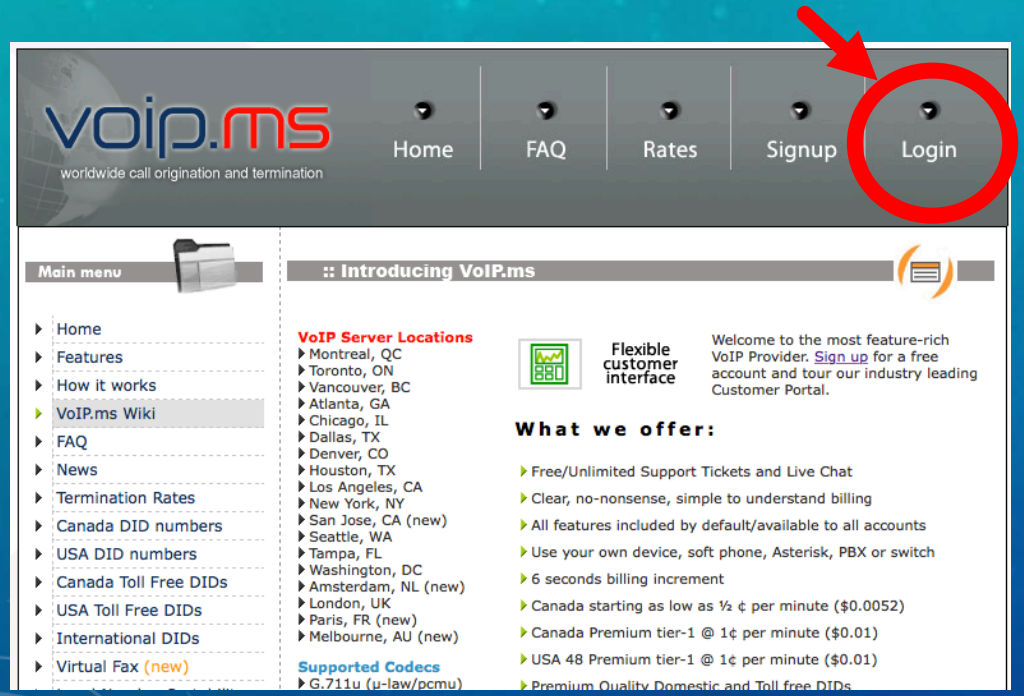
HOW TO: SPOOF YOUR CALLERID

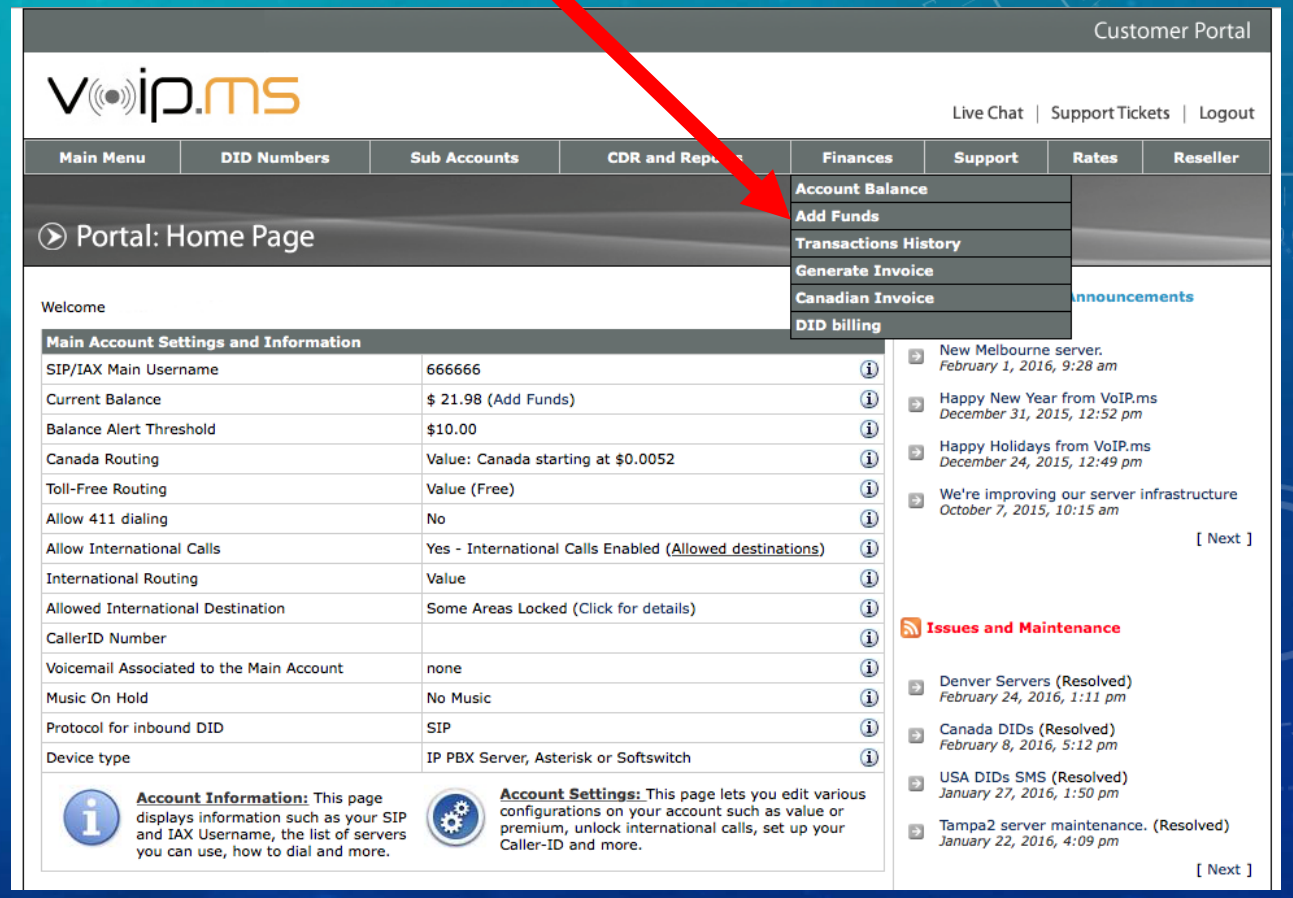
When account is created login

Add funds to account by clicking "Finances" and "Add funds".

Most Canadian and USA calls are charged at $0.01 per minute.

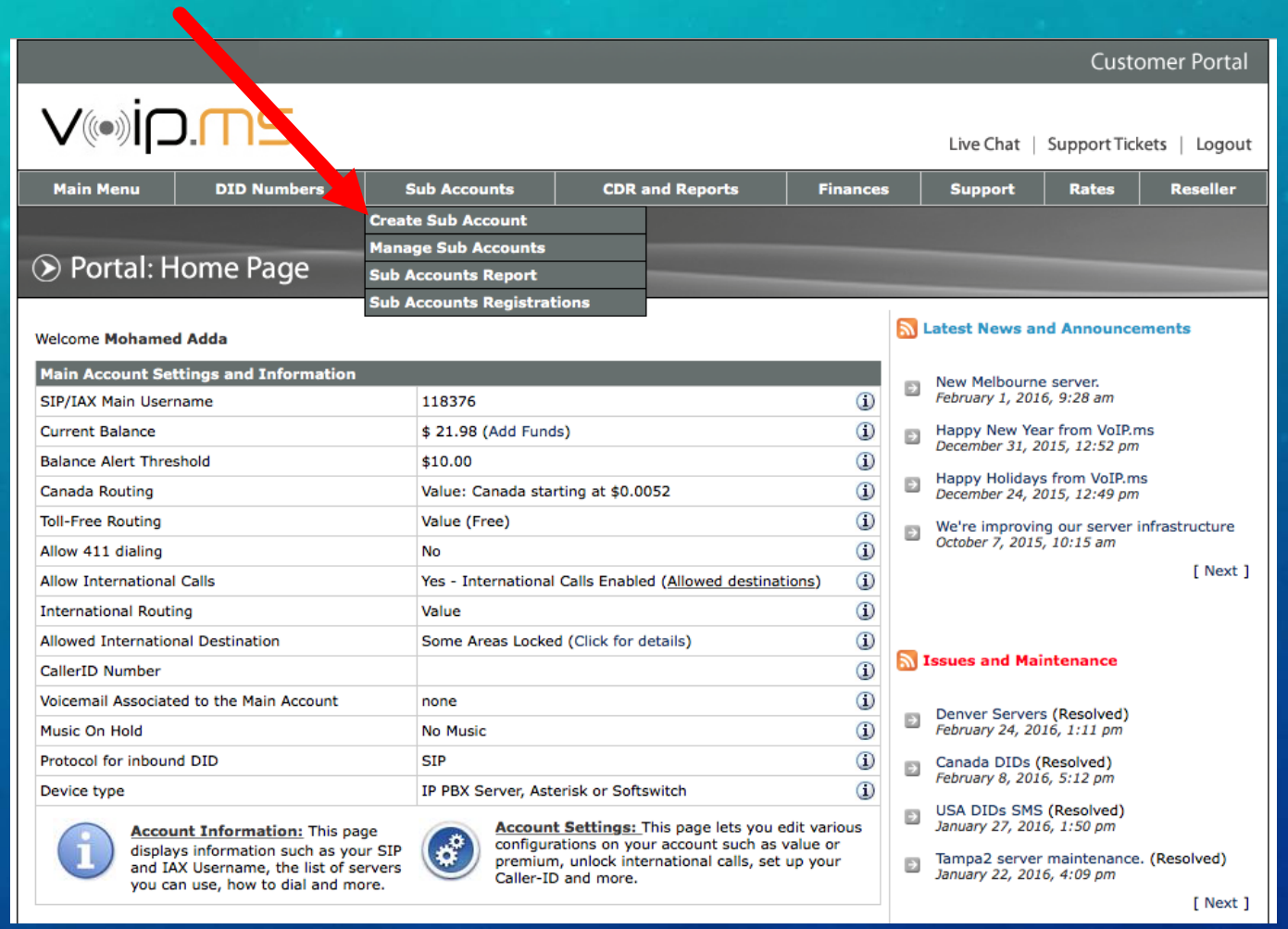
Criminals can use prepaid credits purchased by mules, to hide trail.





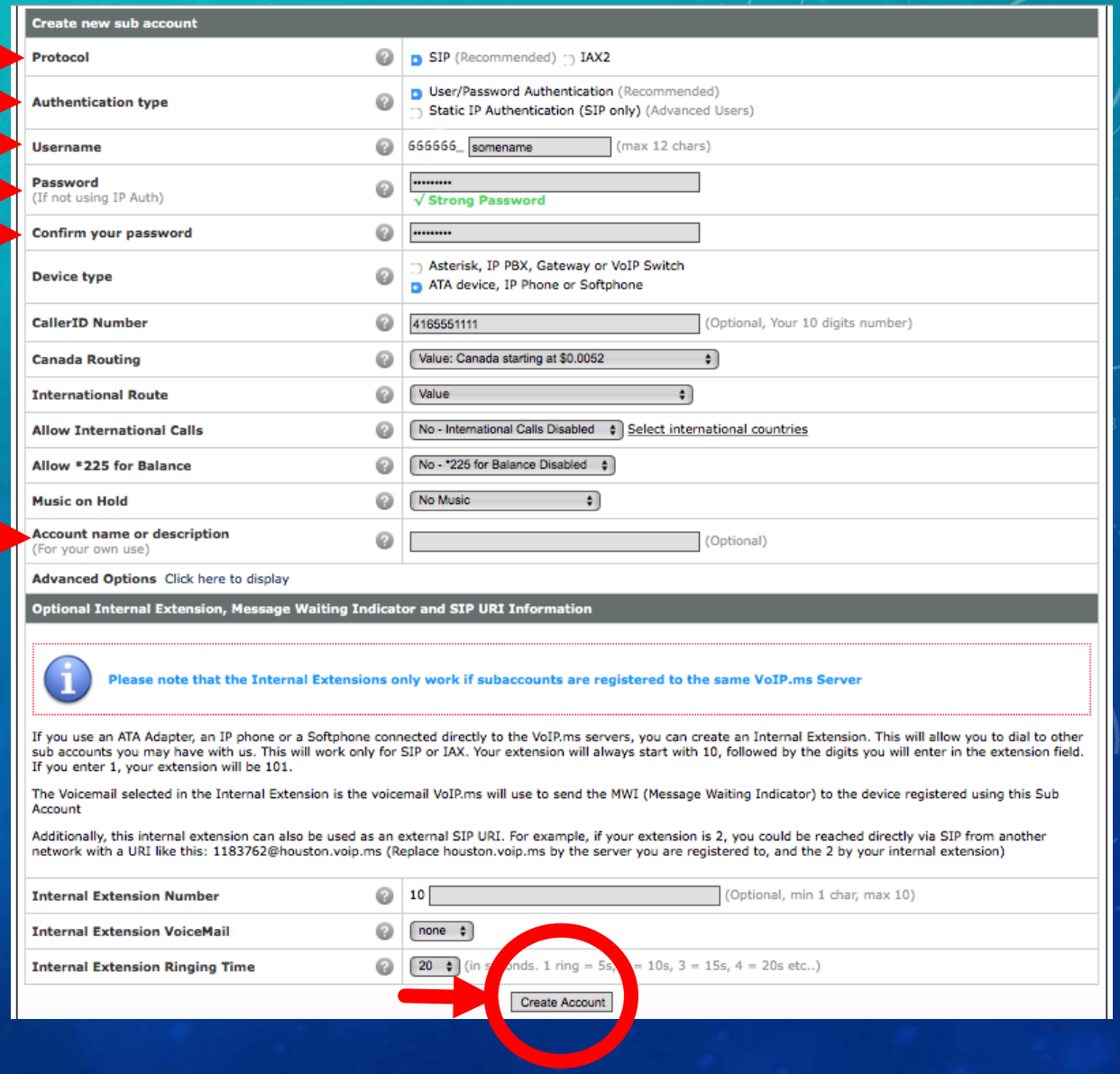
HOW TO: SPOOF YOUR CALLERID

Create a sub account by clicking "Sub Accounts" then "Create Sub Account".



HOW TO: SPOOF YOUR CALLERID

1. Under *Protocol* make sure "SIP" is selected.
2. Under *Authentication type* make sure "User/Password Authentication" is selected.
3. Beside the field *Username* you should see 6 digits followed by and _ i.e. 6666666_ , in the field enter a username.
   - Your username will be 6 digits, _, and the entered username i.e. 555555_somename.
4. Enter and confirm a password to associate with the Sub-Account.
5. Under "*CallerID Number*" enter the number you would like to spoof i.e. 14165551111.
6. If you choose to enter an "Account Name or Description".
7. Click “Create Account” when finished.

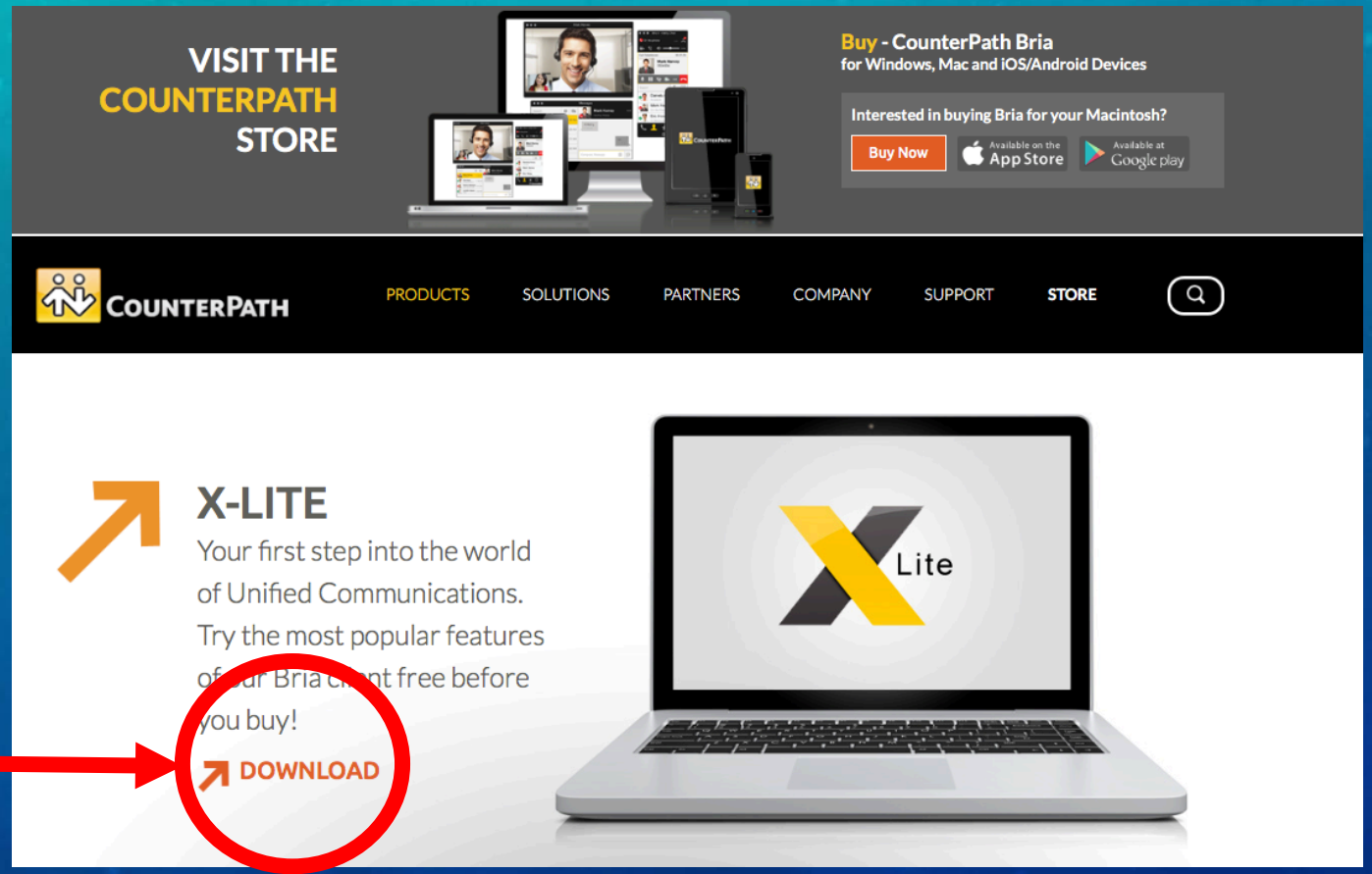


HOW TO: SPOOF YOUR CALLERID

Download X-Lite from http://www.counterpath.com/x-lite/.

If installing on mobile device download from Apple App Store or Google Play Store.

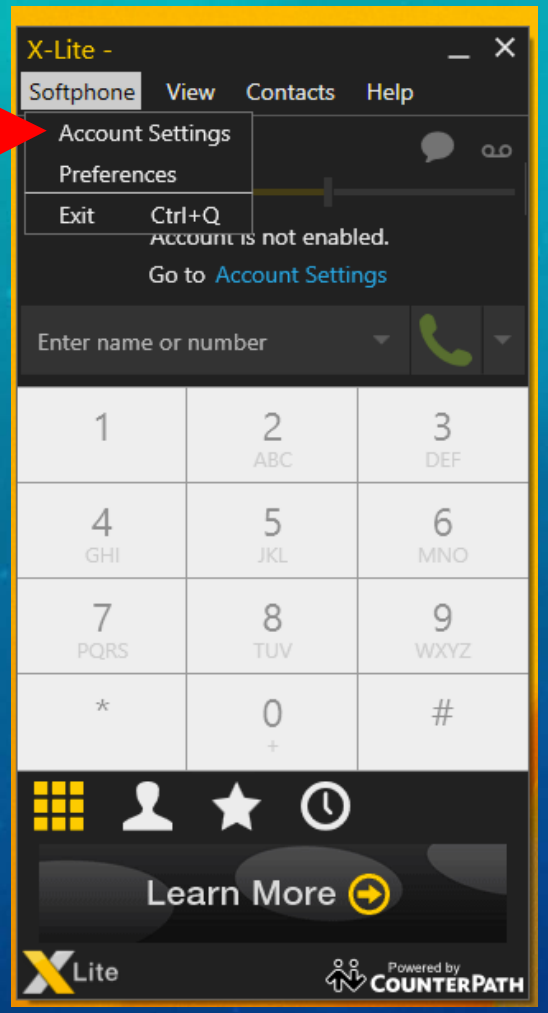
Install application.



HOW TO: SPOOF YOUR CALLERID

For Windows

a) Click "Softphone" then "Account Settings"



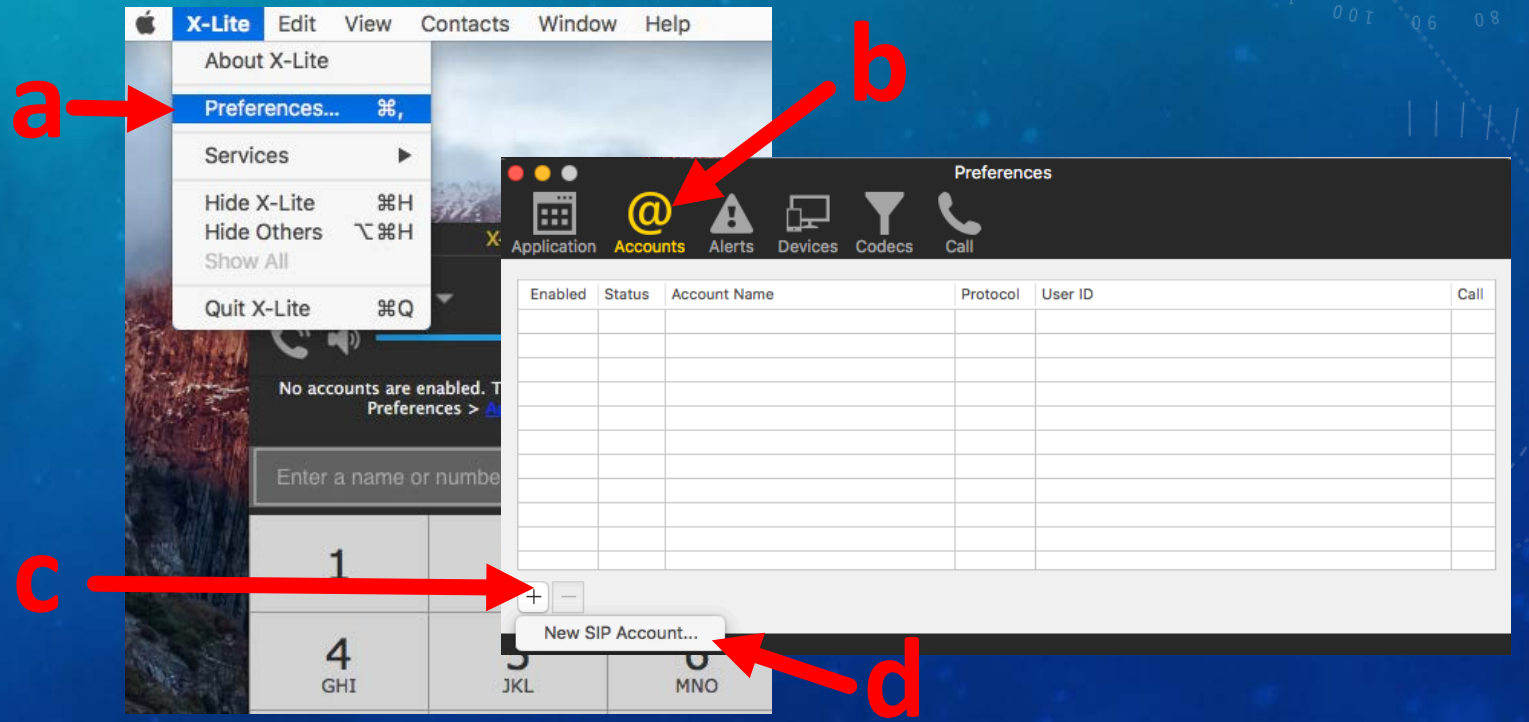
For Mac

a) Click "X-Lite" then "Preferences".

b) Click "Accounts".

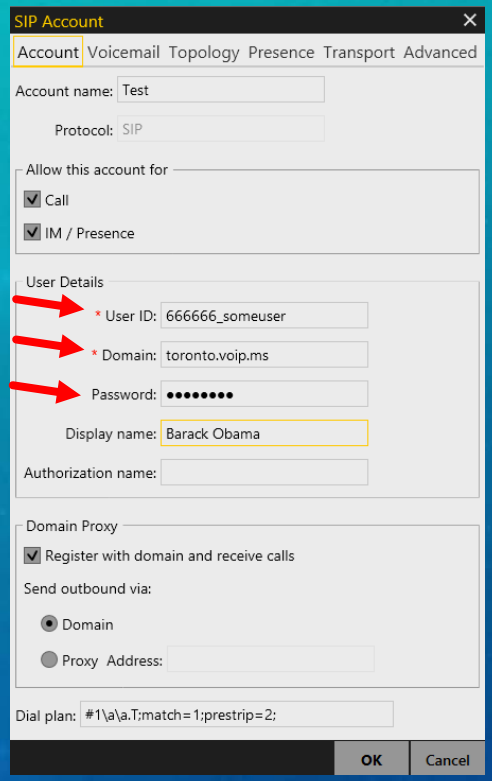
c) Click the plus symbol "+" at bottom of "Preferences" window.

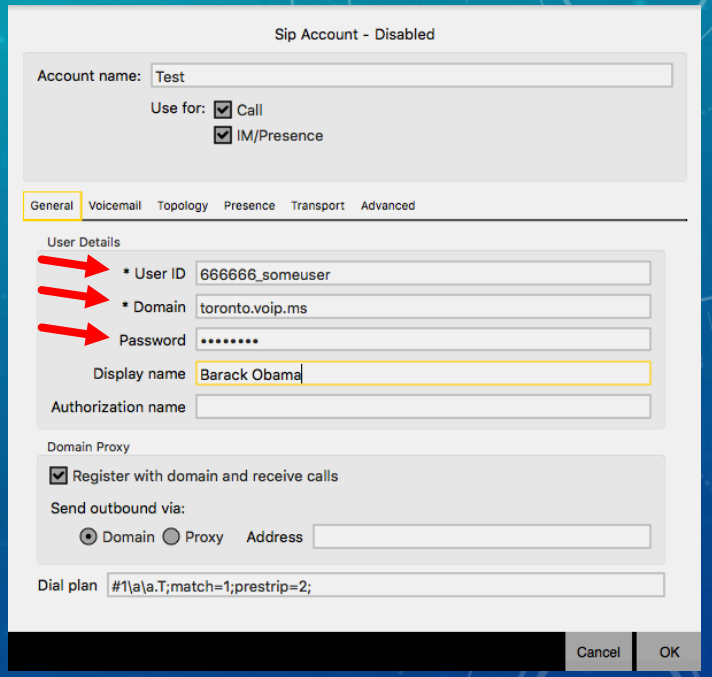
d) Click "New Sip Account..."

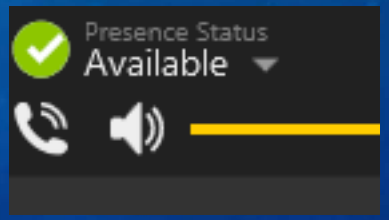


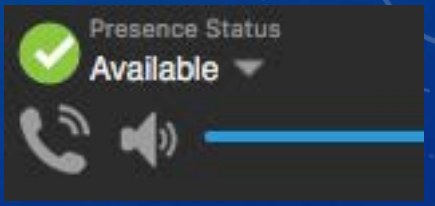
HOW TO: SPOOF YOUR CALLERID

1. Under "* User ID" enter the username you created earlier for the sub account i.e. 666666_someid.
2. Under "* Domain" enter "toronto.voip.ms"
    1. More servers can be found by clicking "Main Menu" then "Portal Home", you will then click "Account Information" beside the blue circular i icon.
3. Under "Password" enter password you created earlier for subaccount.
4. Under "Display Name" choose the name you would like to appear for phones with name display i.e. Barack Obama.
5. If successful you will see a green circle with white check mark in Softphone client.
6. You will now be able to make outgoing calls with the spoofed number and display name. i.e. people will see Barack Obama is calling from 416-555-1111.









QUESTION 1

Q. What is Caller Id Spoofing?

A. Caller ID spoofing is a service that allows a caller to masquerade as someone else by falsifying the number that appears on the recipient's caller ID display.

QUESTION 2

Q. What are the three Caller ID Spoofing Methods?

A. The three methods for caller id spoofing are Voice over IP (internet Protocol), Caller ID Spoofing Services and Orange Box.

QUESTION 3

Q. What aspects of CIA Triangle does Caller ID Spoofing Violates?

A. Caller ID Spoofing violates Integrity and Confidentiality.

REFERENCES

1. https://www.safaribooksonline.com/library/view/voip-voice-and/9780470227367/ch008-sec001.html
2. http://what-when-how.com/voip/fsk-caller-id-on-pstn-voip/
3. http://news.nationalpost.com/news/canada/maybe-we-will-blow-up-your-home-rcmp-warn-of-threatening-phone-scammers-claiming-to-work-for-cra
4. http://www.bradfordtimes.ca/2016/01/26/rcmp-warn-of-canada-revenue-agency-scam
5. http://what-when-how.com/voip/fsk-caller-id-on-pstn-voip/
6. http://electronics.howstuffworks.com/question409.htm
7. http://computer.howstuffworks.com/ip-telephony2.htm
8. http://web.textfiles.com/hacking/TIS/keypulse63.txt
9. http://www.infoworld.com/article/2658949/security/paris-hilton-accused-of-voice-mail-hacking.html
10. http://globalnews.ca/news/2502989/cra-phone-scam-making-the-rounds-in-alberta/
11. http://www.3cx.com/pbx/voip-gateway/
12. http://wiki.voip.ms/article/CallerID_number_spoofing