

# Caller ID Spoofing

BROUGHT TO YOU BY:

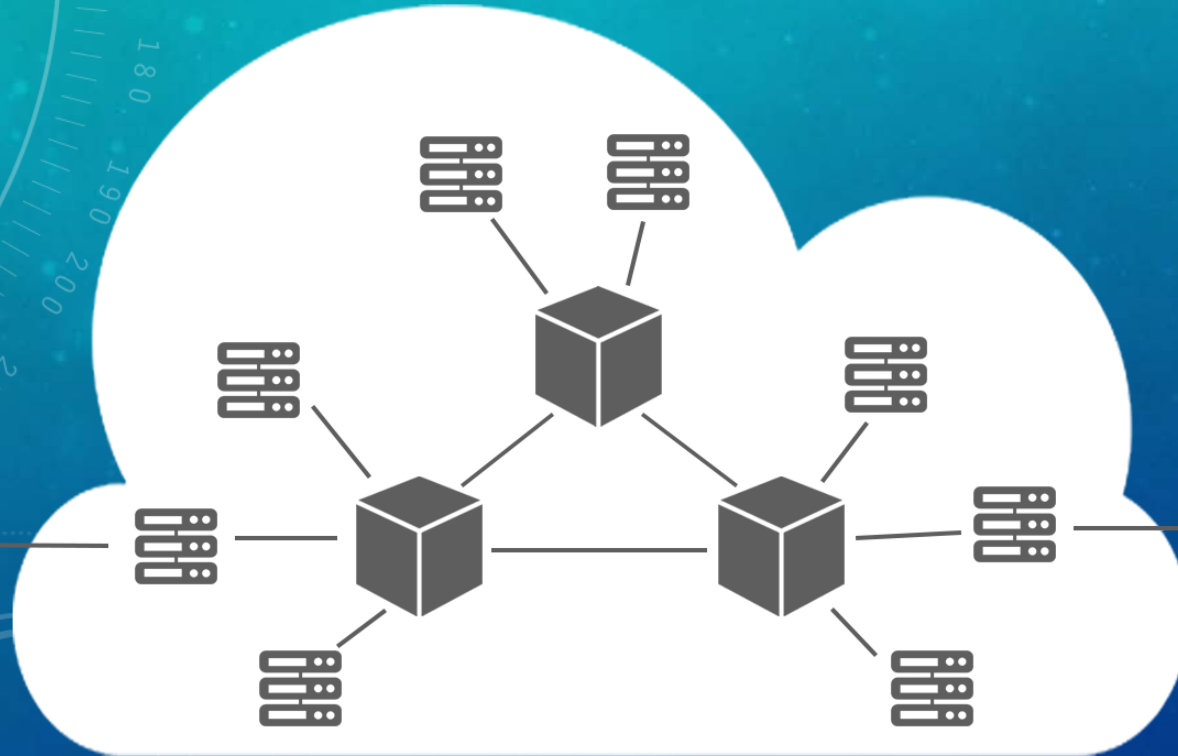
**JOHN, KHURRAM, & MOHAMED**

# PUBLIC SWITCHED TELEPHONE NETWORK

ALICE



BOB



# VOIP PROVIDER



**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

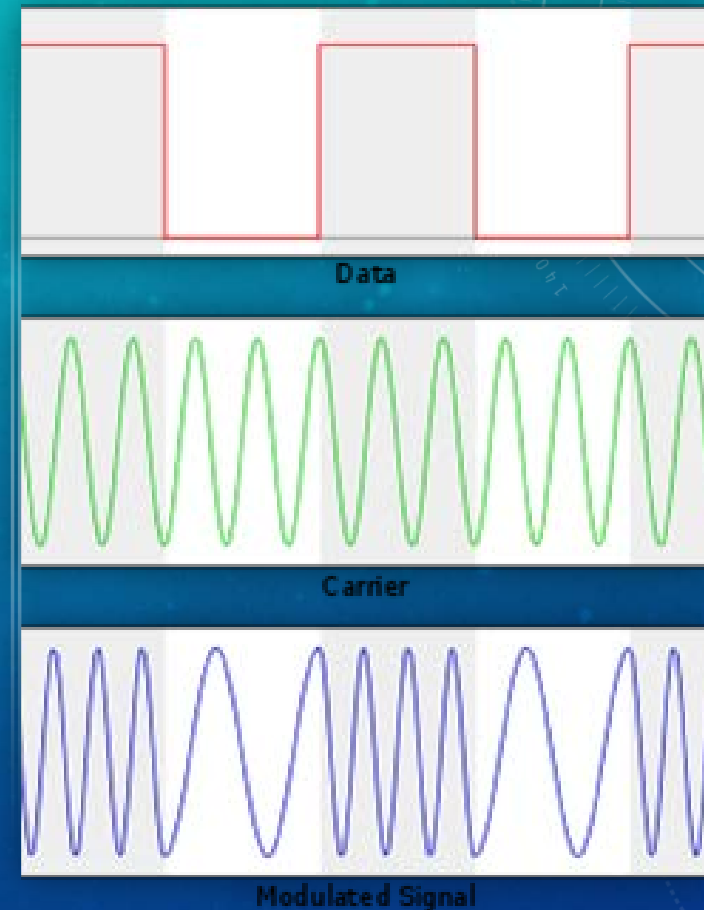
## Orange Box

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



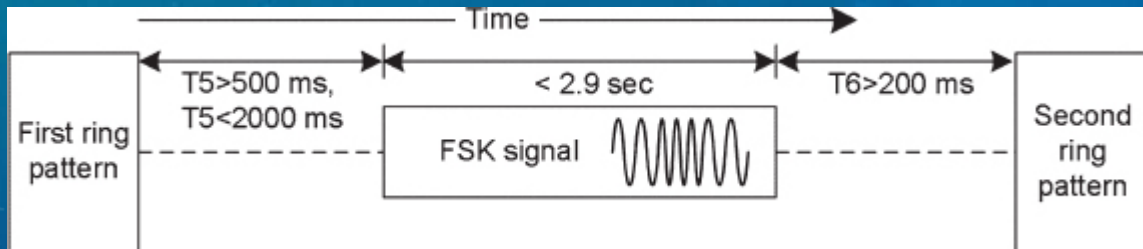
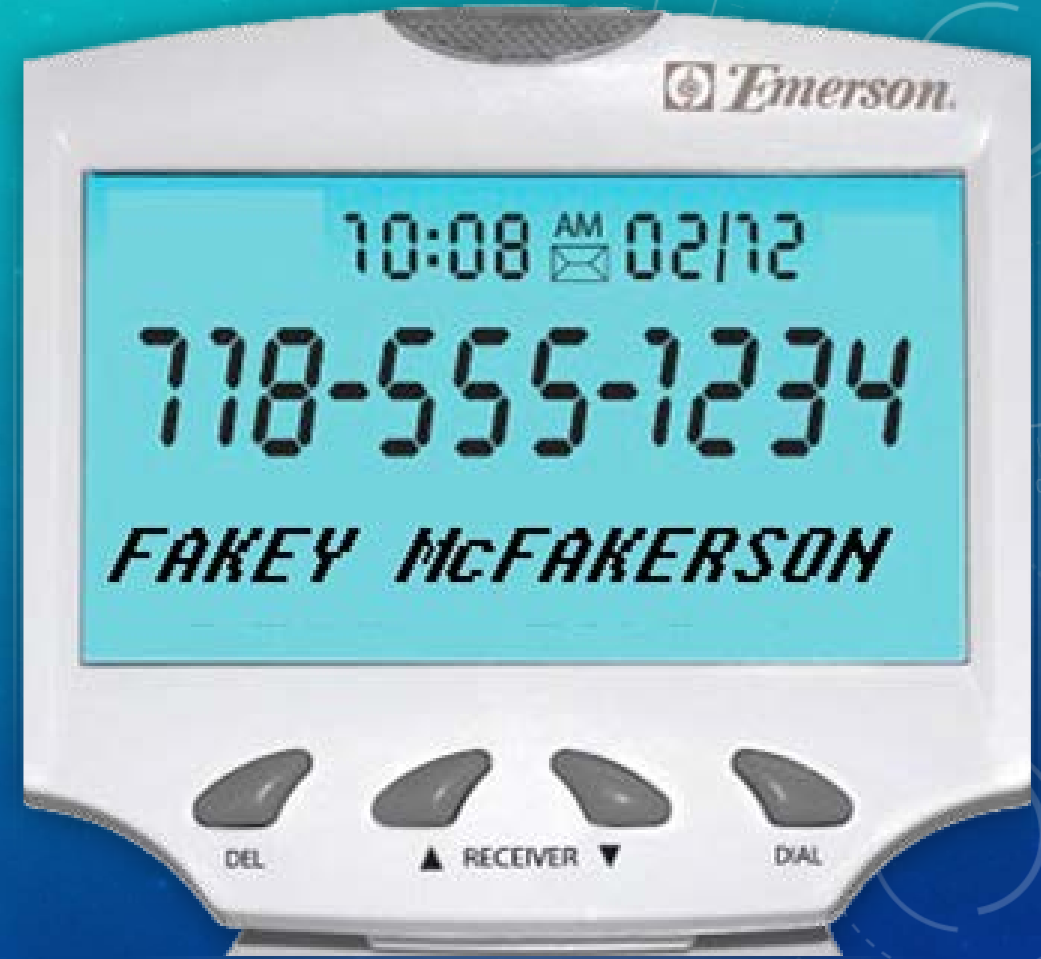
# TRADITIONAL CALLER ID TRANSMISSIONS

- 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



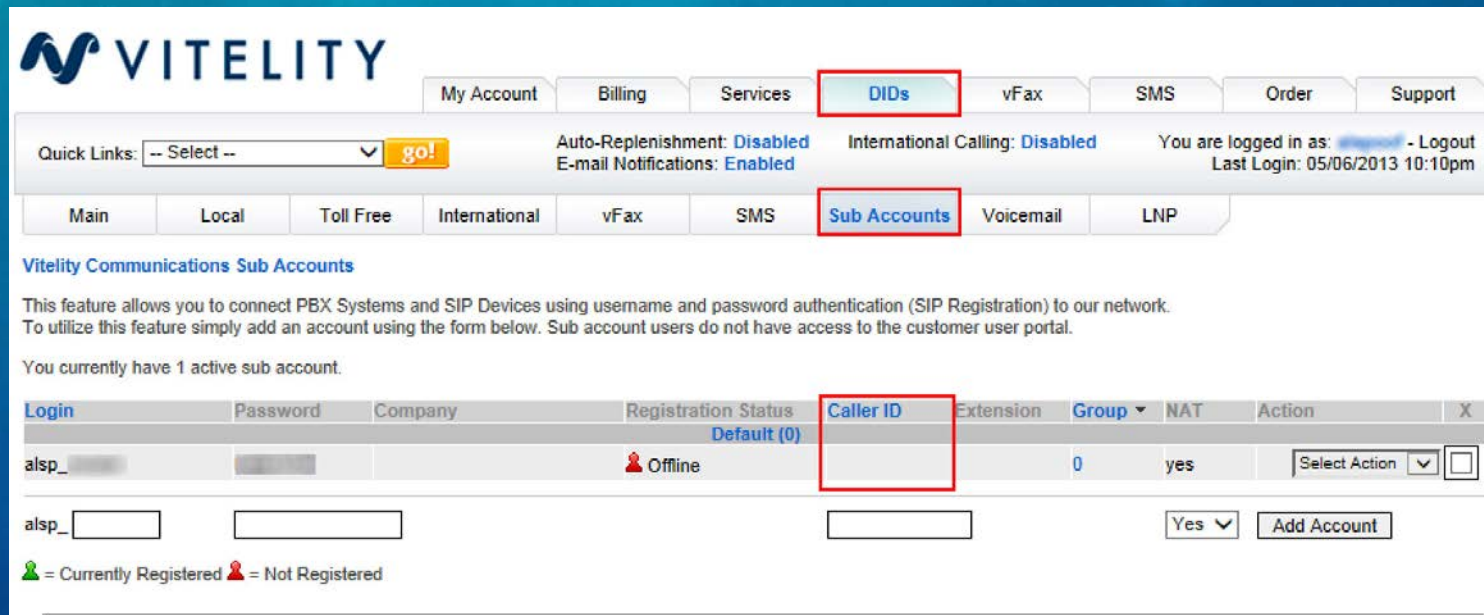
# CALLER ID - MESSAGE

- 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



**VITELITY**

My Account | Billing | Services | **DIDs** | vFax | SMS | Order | Support

Quick Links: -- Select -- go! | Auto-Replenishment: Disabled | International Calling: Disabled | You are logged in as: [User] - Logout  
E-mail Notifications: Enabled | Last Login: 05/06/2013 10:10pm

Main | Local | Toll Free | International | vFax | SMS | **Sub Accounts** | Voicemail | LNP

**Vitelity Communications Sub Accounts**

This feature allows you to connect PBX Systems and SIP Devices using username and password authentication (SIP Registration) to our network. To utilize this feature simply add an account using the form below. Sub account users do not have access to the customer user portal.

You currently have 1 active sub account.

Login	Password	Company	Registration Status	Caller ID	Extension	Group	NAT	Action	X
alsp_			Offline			0	yes	Select Action	

alsp\_ [ ] [ ] [ ] [ ] [ ] Yes Add Account

= Currently Registered = Not Registered

# 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





# POSSIBLE EXPLOITS

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



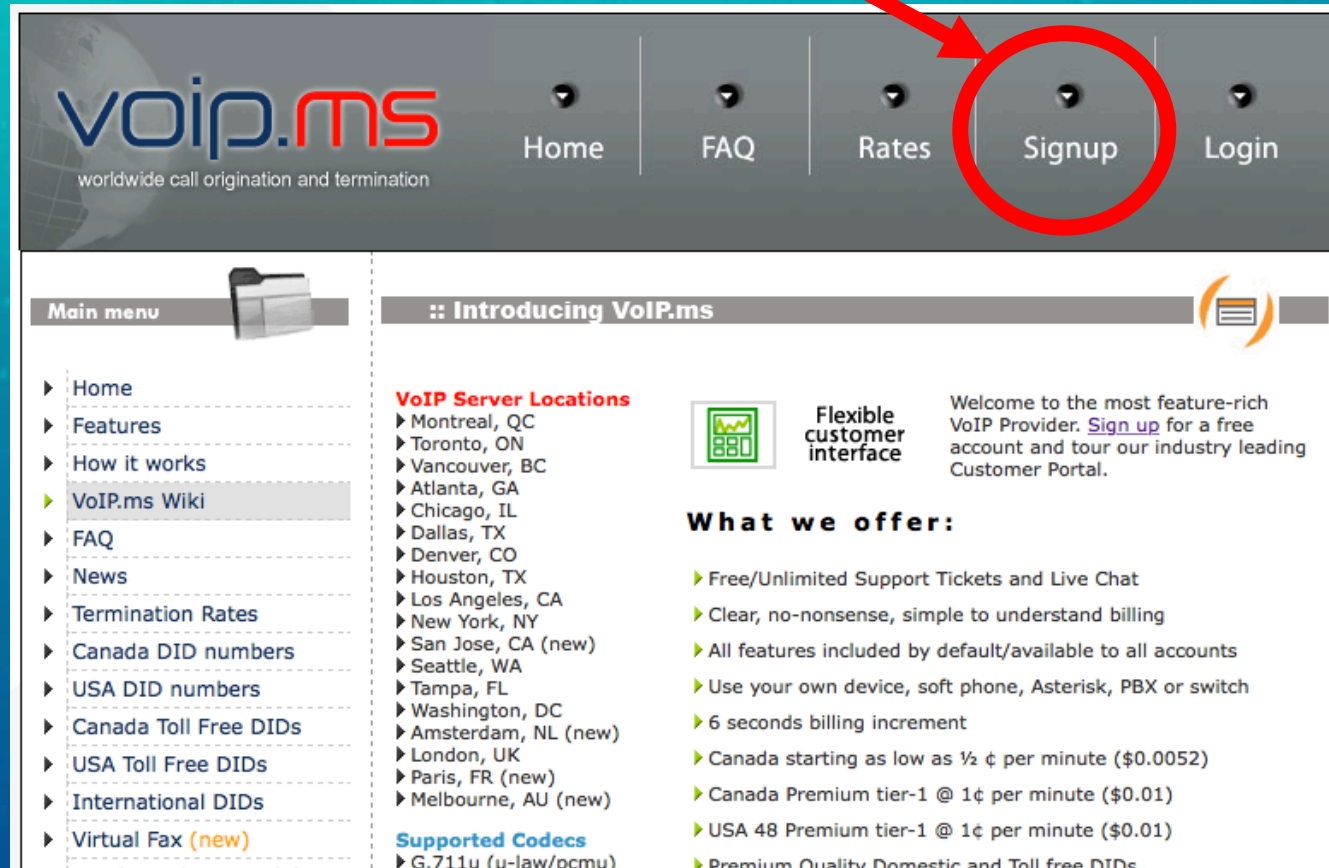
# CRA SCAM

- 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>



The screenshot shows the voip.ms website interface. The top navigation bar includes the logo 'voip.ms' with the tagline 'worldwide call origination and termination', and menu items for Home, FAQ, Rates, Signup, and Login. The 'Signup' button is highlighted with a red circle and a red arrow pointing to it from the left. Below the navigation bar, there is a 'Main menu' on the left with a folder icon, listing various pages like Home, Features, How it works, VoIP.ms Wiki, FAQ, News, Termination Rates, Canada DID numbers, USA DID numbers, Canada Toll Free DIDs, USA Toll Free DIDs, International DIDs, and Virtual Fax (new). The main content area is titled ':: Introducing VoIP.ms' and features a 'VoIP Server Locations' section with a list of cities including Montreal, Toronto, Vancouver, Atlanta, Chicago, Dallas, Denver, Houston, Los Angeles, New York, San Jose, Seattle, Tampa, Washington, Amsterdam, London, Paris, and Melbourne. It also includes a 'Flexible customer interface' section with a graph icon and a 'What we offer:' section listing benefits such as free support tickets, clear billing, and various DID options.

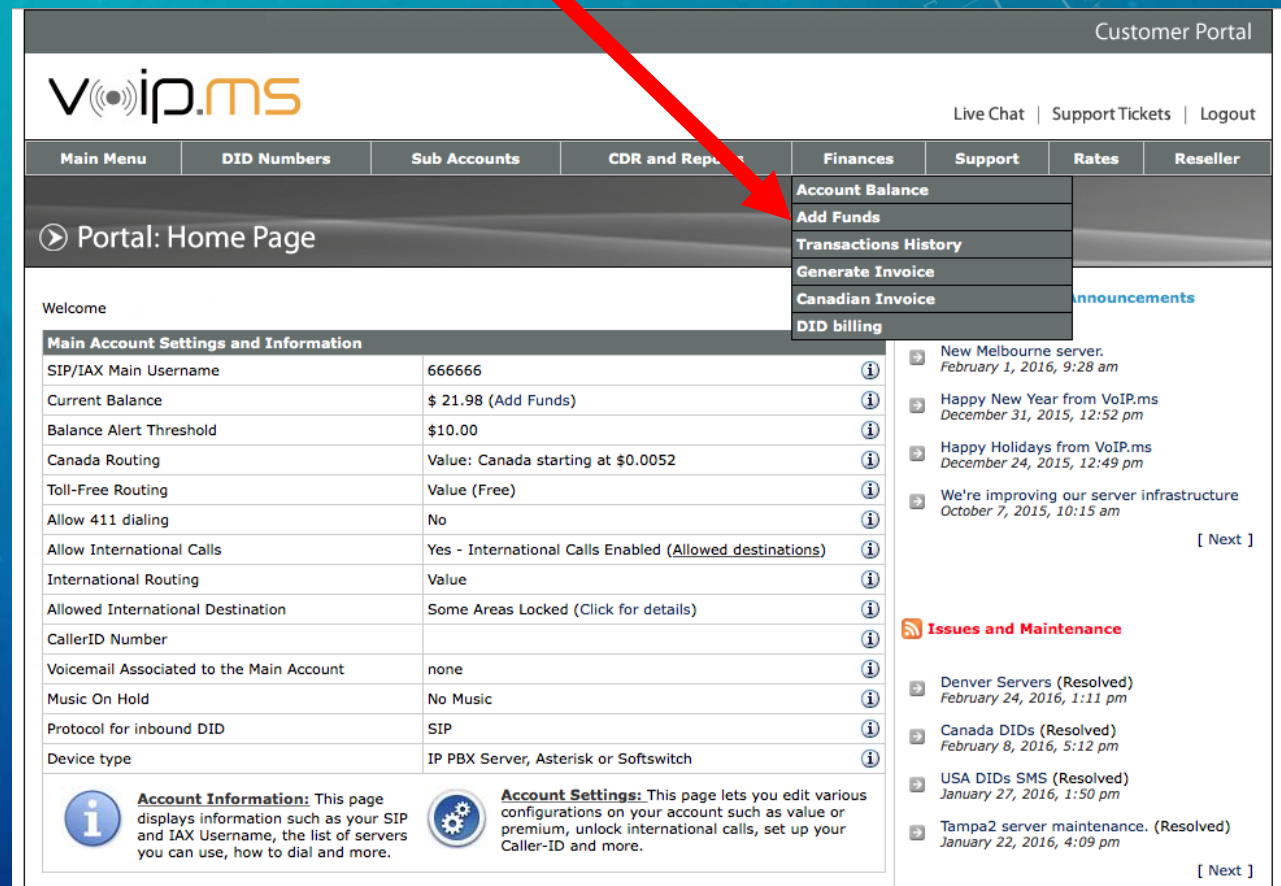
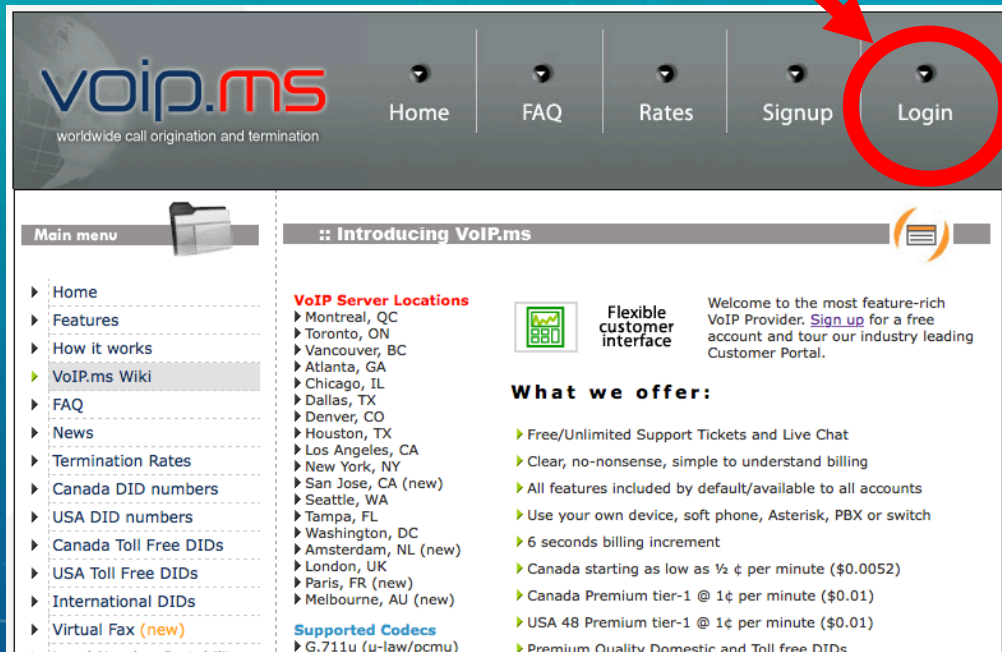
# HOW TO: SPOOF YOUR CALLERID

When account is created login

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

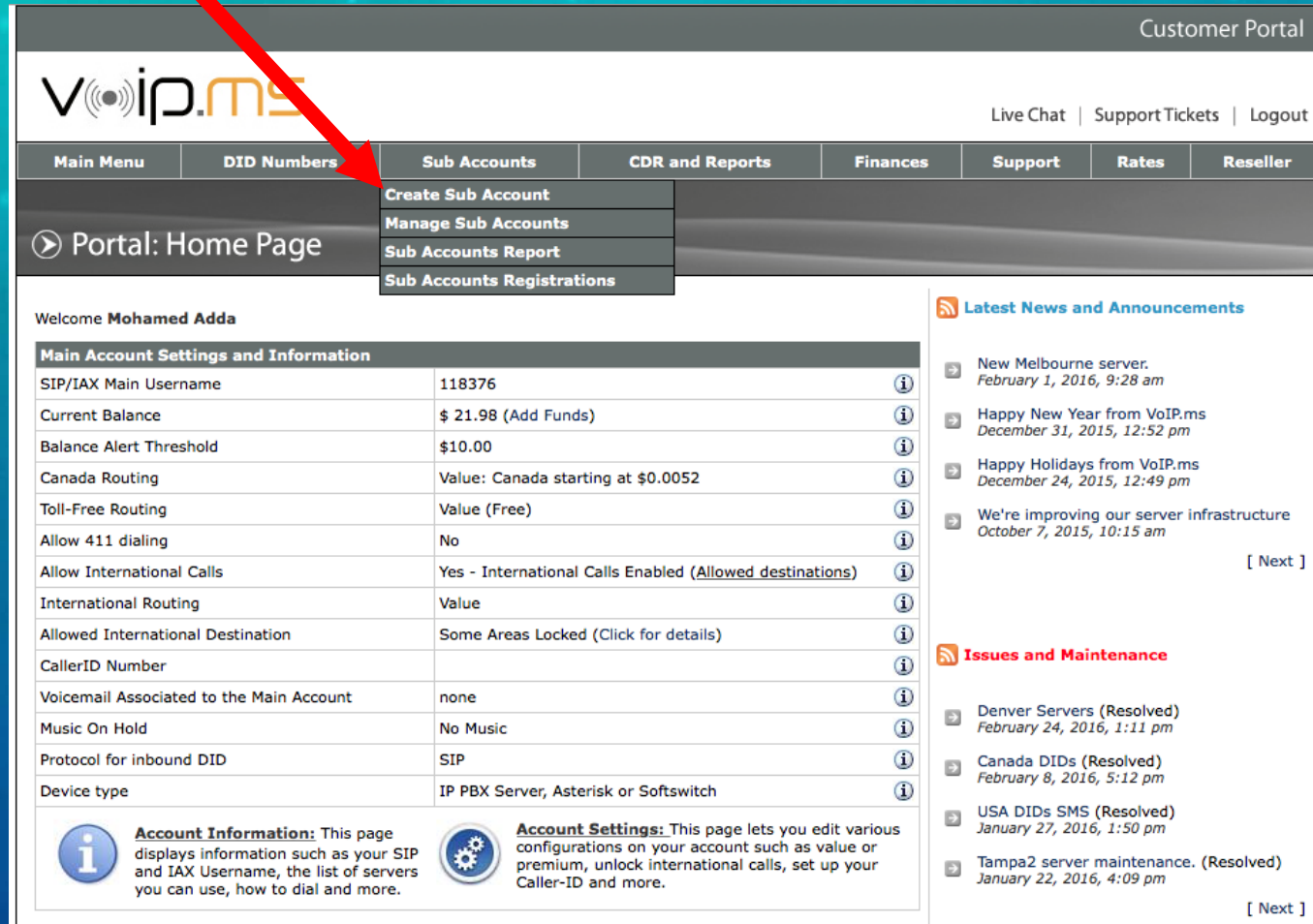
Most Canadian and USA calls are charged at \$0.01 per minute.

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".



Customer Portal

Live Chat | Support Tickets | Logout

Main Menu | DID Numbers | **Sub Accounts** | CDR and Reports | Finances | Support | Rates | Reseller

Portal: Home Page

- Create Sub Account
- Manage Sub Accounts
- Sub Accounts Report
- Sub Accounts Registrations

Welcome **Mohamed Adda**

### Main Account Settings and Information

SIP/IAX Main Username	118376	<a href="#">i</a>
Current Balance	\$ 21.98 (Add Funds)	<a href="#">i</a>
Balance Alert Threshold	\$10.00	<a href="#">i</a>
Canada Routing	Value: Canada starting at \$0.0052	<a href="#">i</a>
Toll-Free Routing	Value (Free)	<a href="#">i</a>
Allow 411 dialing	No	<a href="#">i</a>
Allow International Calls	Yes - International Calls Enabled ( <a href="#">Allowed destinations</a> )	<a href="#">i</a>
International Routing	Value	<a href="#">i</a>
Allowed International Destination	Some Areas Locked (Click for details)	<a href="#">i</a>
CallerID Number		<a href="#">i</a>
Voicemail Associated to the Main Account	none	<a href="#">i</a>
Music On Hold	No Music	<a href="#">i</a>
Protocol for inbound DID	SIP	<a href="#">i</a>
Device type	IP PBX Server, Asterisk or Softswitch	<a href="#">i</a>

**Account Information:** This page displays information such as your SIP and IAX Username, the list of servers you can use, how to dial and more.

**Account Settings:** This page lets you edit various configurations on your account such as value or premium, unlock international calls, set up your Caller-ID and more.

### Latest News and Announcements

- New Melbourne server. February 1, 2016, 9:28 am
- Happy New Year from VoIP.ms December 31, 2015, 12:52 pm
- Happy Holidays from VoIP.ms December 24, 2015, 12:49 pm
- We're improving our server infrastructure October 7, 2015, 10:15 am

[ Next ]

### Issues and Maintenance

- Denver Servers (Resolved) February 24, 2016, 1:11 pm
- Canada DIDs (Resolved) February 8, 2016, 5:12 pm
- USA DIDs SMS (Resolved) January 27, 2016, 1:50 pm
- Tampa2 server maintenance. (Resolved) January 22, 2016, 4:09 pm

[ Next ]

# 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. 666666\_ , 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.

The screenshot shows a web form titled "Create new sub account" with the following fields and values:

Protocol	<input checked="" type="checkbox"/> SIP (Recommended) <input type="checkbox"/> IAX2
Authentication type	<input checked="" type="checkbox"/> User/Password Authentication (Recommended) <input type="checkbox"/> Static IP Authentication (SIP only) (Advanced Users)
Username	666666_ <input type="text" value="somename"/> (max 12 chars)
Password (If not using IP Auth)	<input type="password" value="*****"/> ✓ Strong Password
Confirm your password	<input type="password" value="*****"/>
Device type	<input type="checkbox"/> Asterisk, IP PBX, Gateway or VoIP Switch <input checked="" type="checkbox"/> ATA device, IP Phone or Softphone
CallerID Number	<input type="text" value="4165551111"/> (Optional, Your 10 digits number)
Canada Routing	<input type="text" value="Value: Canada starting at \$0.0052"/>
International Route	<input type="text" value="Value"/>
Allow International Calls	<input type="text" value="No - International Calls Disabled"/> <a href="#">Select international countries</a>
Allow *225 for Balance	<input type="text" value="No - *225 for Balance Disabled"/>
Music on Hold	<input type="text" value="No Music"/>
Account name or description (For your own use)	<input type="text"/> (Optional)

**Advanced Options** [Click here to display](#)

**Optional Internal Extension, Message Waiting Indicator and SIP URI Information**

**i** Please note that the Internal Extensions only work if subaccounts are registered to the same VoIP.ms Server

If you use an ATA Adapter, an IP phone or a Softphone connected directly to the VoIP.ms servers, you can create an Internal Extension. This will allow you to dial to other sub accounts you may have with us. This will work only for SIP or IAX. Your extension will always start with 10, followed by the digits you will enter in the extension field. If you enter 1, your extension will be 101.

The Voicemail selected in the Internal Extension is the voicemail VoIP.ms will use to send the MWI (Message Waiting Indicator) to the device registered using this Sub Account

Additionally, this internal extension can also be used as an external SIP URI. For example, if your extension is 2, you could be reached directly via SIP from another network with a URI like this: 1183762@houston.voip.ms (Replace houston.voip.ms by the server you are registered to, and the 2 by your internal extension)

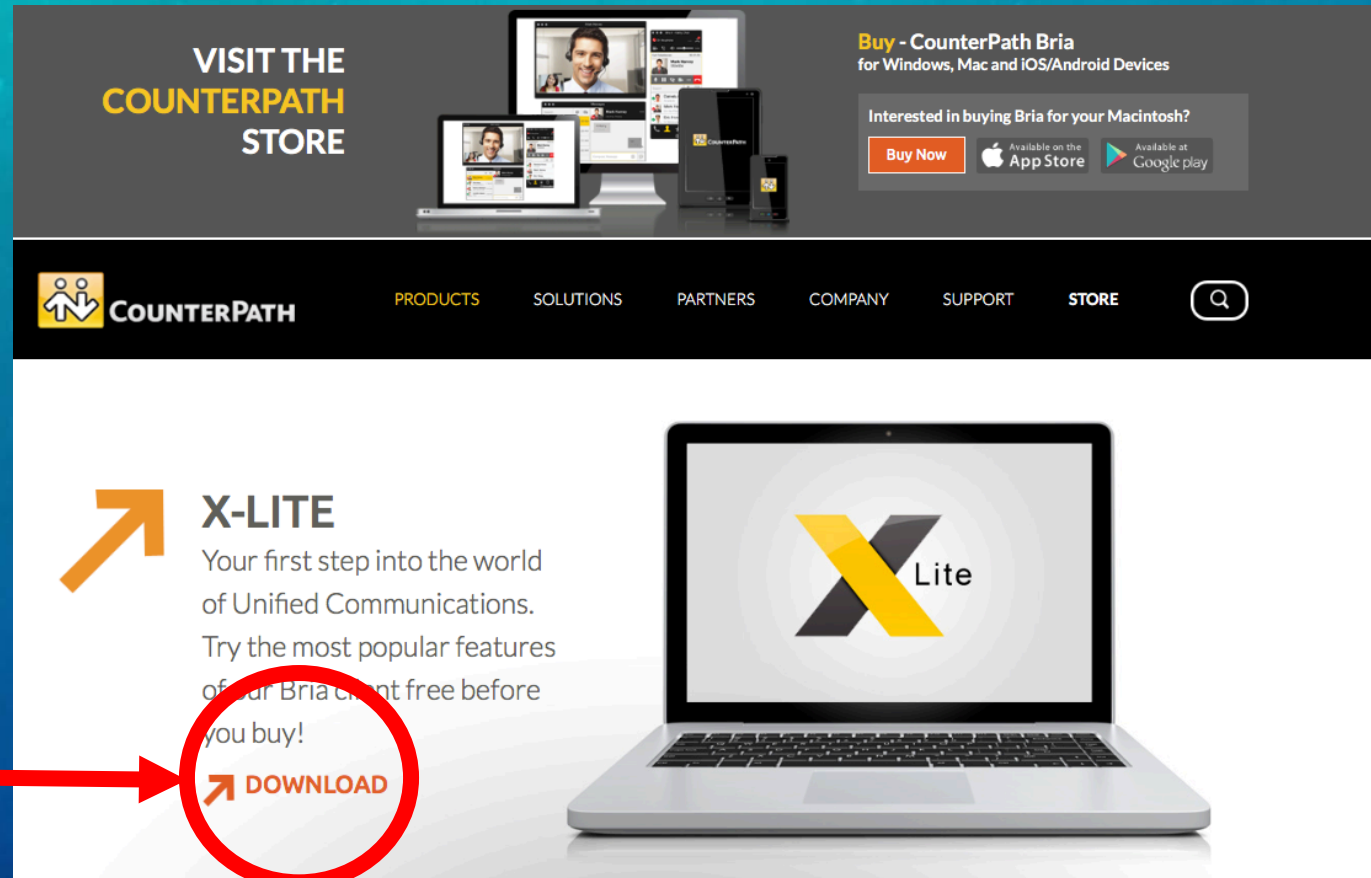
Internal Extension Number	<input type="text" value="10"/> (Optional, min 1 char, max 10)
Internal Extension VoiceMail	<input type="text" value="none"/>
Internal Extension Ringing Time	<input type="text" value="20"/> (in seconds. 1 ring = 5s, 2 = 10s, 3 = 15s, 4 = 20s etc..)

# 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.



The screenshot shows the CounterPath website's product page for X-Lite. At the top, there is a navigation bar with the CounterPath logo and menu items: PRODUCTS, SOLUTIONS, PARTNERS, COMPANY, SUPPORT, and STORE. Below the navigation bar, the main content area features a large heading "X-LITE" with a sub-heading "Your first step into the world of Unified Communications." and a paragraph "Try the most popular features of our Bria client free before you buy!". A prominent red circle highlights a "DOWNLOAD" button with a right-pointing arrow, which is also pointed to by a red arrow from the left. To the right of the text is a laptop displaying the X-Lite logo on its screen. Above the laptop, there is a promotional banner for CounterPath Bria, including a "Buy Now" button and logos for the App Store and Google Play.





# 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.

SIP Account

Account Voicemail Topology Presence Transport Advanced

Account name: Test

Protocol: SIP

Allow this account for

Call

IM / Presence

User Details

\* User ID: 666666\_someuser

\* Domain: toronto.voip.ms

Password: [masked]

Display name: Barack Obama

Authorization name: [empty]

Domain Proxy

Register with domain and receive calls

Send outbound via:

Domain  Proxy Address: [empty]

Dial plan: #1|a|a.T;match=1;prestrip=2;

OK Cancel

Sip Account - Disabled

Account name: Test

Use for:  Call  IM/Presence

General Voicemail Topology Presence Transport Advanced

User Details

\* User ID: 666666\_someuser

\* Domain: toronto.voip.ms

Password: [masked]

Display name: Barack Obama

Authorization name: [empty]

Domain Proxy

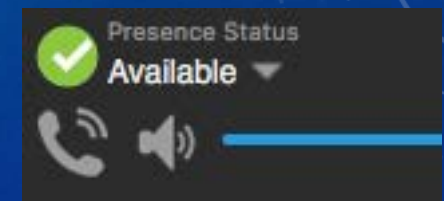
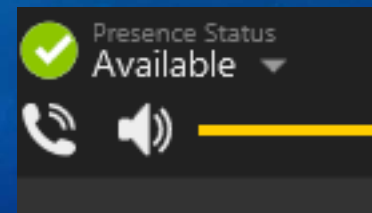
Register with domain and receive calls

Send outbound via:

Domain  Proxy Address: [empty]

Dial plan: #1|a|a.T;match=1;prestrip=2;

Cancel OK



# 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

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