

Cyber Security for the Home

Or

How to Keep the Bad Guys/Gals from your
Home Computers

April 4, 2014

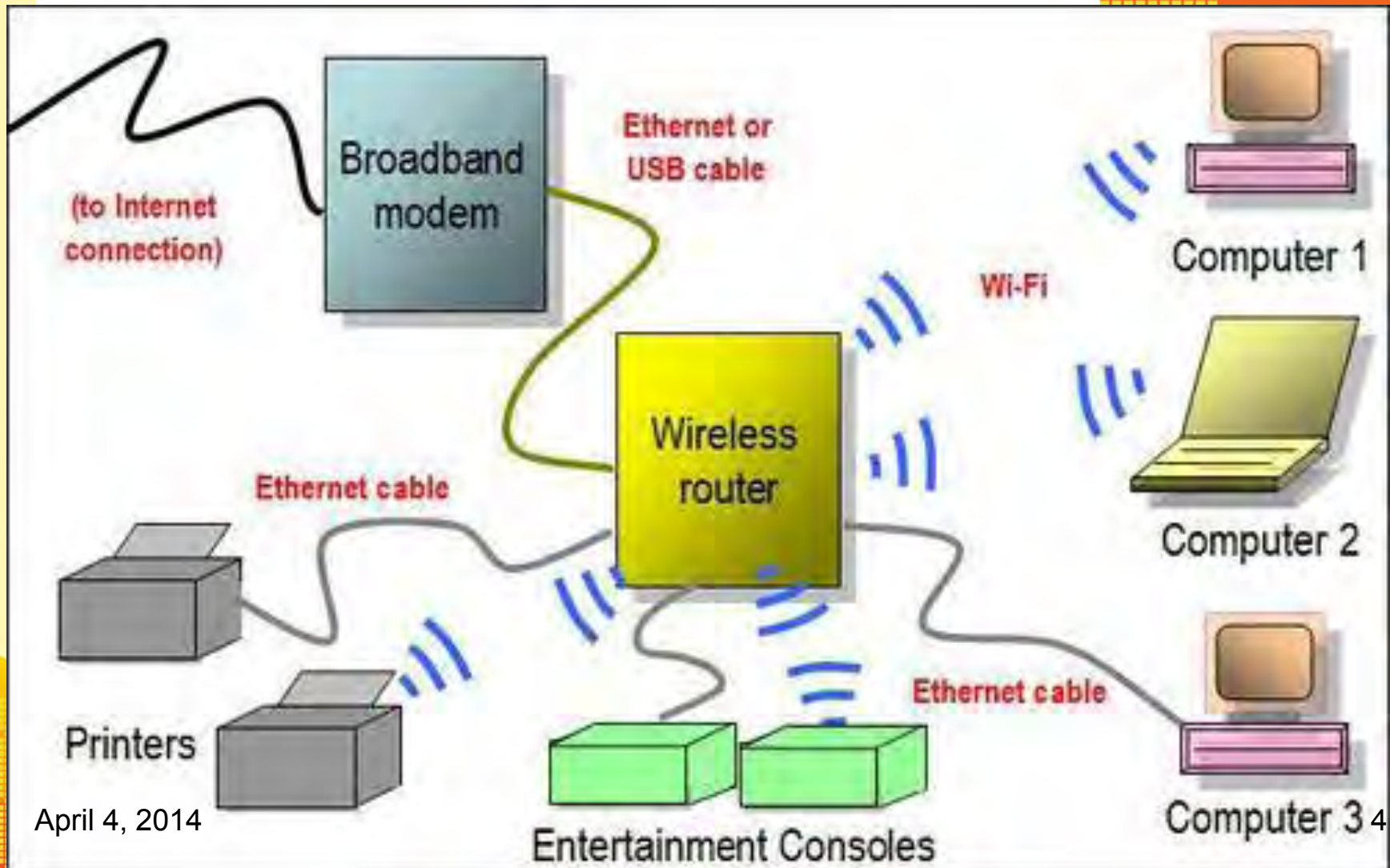
Cyber Security

- What is Cyber Security for the Home?
 - Protecting your WIFI Network from unwanted “users”
 - Protecting your Personal Computers/Tablets from external attack
 - Insertion of programs that use your computers
 - Protect from hard drive corruption or wipe
 - Preventing Hackers from obtaining your personal information, including Credit Card information

Protecting your WIFI Network

- If you have Internet from Verizon, Comcast, Cox or other provider, you probably have a broadcasting network!
- Comes with a Router
 - Routers are “traffic cops” that “route” network packets to the correct computer using TCP/IP
 - You connect via hard wire (network [Ethernet] cable) or using wireless (WI-FI)
 - Even if you are totally “hard wired”, your Router may be broadcasting!!

Home Networks



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Internet Routers



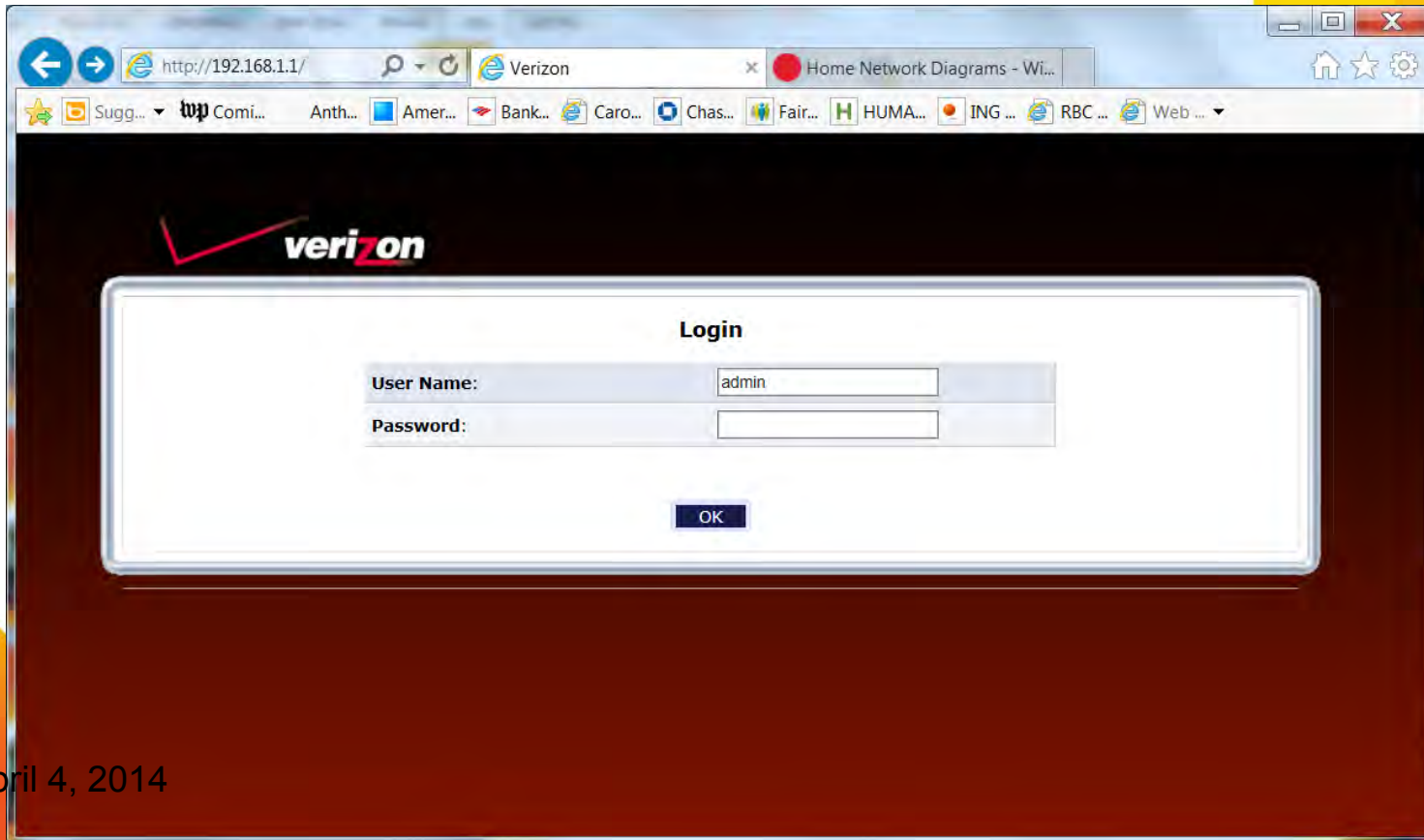
Internet Cable



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Router Setup

- <http://192.168.1.1> gets you to the Router Login page (“password”)



http://192.168.1.1/cache/33 Verizon

Sugg... wp Comi... Anth... Amer... Bank... Caro... Chas... Fair... HUMA... ING ... RBC ... Web ...

verizon

Main
 Wireless Settings
 My Network
 Firewall Settings
 Parental Control
 Advanced
 System Monitoring

My Router

Router Status
GO!

Your router is Ready for Internet Access

Broadband Connection

Coax Status: **Connected**
Connection Type: DHCP
IP Address: 173.66.41.140

Quick Links

- [Port Forwarding](#)
(Enable Applications: Games, IM & Others)
- [Change Wireless Settings](#)
- [Change Login User Name / Password](#)
- [Adding a Webcam](#)

[Verizon Help](#)
[Logout](#)

My Network

	PC Name:		Connection Type:	Wireless
	IP Address:	192.168.1.12	Status:	Inactive
	PC Name:		Connection Type:	Ethernet
	IP Address:	192.168.1.110	Status:	Active
	PC Name:	flowers	Connection Type:	Ethernet
	IP Address:	192.168.1.2	Status:	Active
	PC Name:	HPD17F54	Connection Type:	Wireless
	IP Address:	192.168.1.3	Status:	Active
	PC Name:	family	Connection Type:	Ethernet
	IP Address:	192.168.1.4	Status:	Active
	PC Name:	Karyns-iPad	Connection Type:	Wireless
	IP Address:	192.168.1.5	Status:	Active
	PC Name:	android-		

Action Zone

GO TO THE INTERNET NOW >

- [Verizon.com](#)
- [Verizon Central](#)
- [Verizon Business Center](#)
- [Verizon Surround](#)

Shop Actiontec >

Music >

Videos >

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Create a new SSID using random upper case/lower case letters and numerals and write it down! (do not use special characters)

Firefox

Google Calendar Verizon

192.168.1.1/cache/628042661/index.cgi

AVG Secure Search

Most Visited American Express Cre... Anthem Blue Cross Blu... Bank of America Onli... Carolyn Walsh Chase Online - Logon HUMANA - Health an...

Main

Wireless Status

Basic Security Settings

Advanced Security Settings

Logout

Basic Security Settings

Instructions for setting up a wireless network using basic WEP wireless security are set out below. However, we recommend that you establish stronger security using the Advanced Security Settings. To establish stronger security, select "OFF" in Step 4, click on APPLY and then go to Advanced Security Settings to setup security.

- 1. Turn Wireless ON**

Wireless: ☒ On ☐ Off
- 2. Change the SSID setting to any name or code you want**

(SSID is the same thing as the name of your Wireless Network.)

SSID:
- 3. Channel**

To change the channel of the frequency band at which the Router communicates, please enter it below. Then click apply to save your settings:

NOTE: Channels 1, 6 and 11 are standard channels. Selecting any other channel may degrade performance.

Channel:

☐ Keep my channel selection during power cycle
- 4. Click on the button next to WEP**

WEP prevents unintentional connections to your wireless home network. For greater protection against hacking and security breaches, see Advanced Security Settings.

☐ WEP ☒ Off
- 5. Select a WEP Key**

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use Wi-Fi Protected Access version 2 (WPA2) encryption with Advanced Encryption Standard (AES)

Firefox

Google Calendar Verizon

192.168.1.1/cache/1044664617/index.cgi

AVG Secure Search

Most Visited American Express Cre... Anthem Blue Cross Blu... Bank of America Onli... Carolyn Walsh Chase Online - Logon HUMANA - Health an...

Main Wireless Settings My Network Firewall Settings Parental Control Advanced System Monitoring

Main
Wireless Status
Basic Security Settings
Advanced Security Settings
Logout

Advanced Security Settings

IMPORTANT: For a more secure wireless network use Advanced Security Settings.

Level 1: Securing your wireless traffic as it transmits through the air - we recommend you use WPA2 security, unless you experience compatibility issues.

- ☐ WEP
- ☐ WPA (Allows you to enable a pre-shared key for a home network or more advanced security for an enterprise network)
- ☐ WPA2 (An enhanced revision of WPA providing stronger security settings)

Level 2: Stop your router from broadcasting your Wireless Network Name (SSID)

SSID Broadcast (Allows you to prevent users who do not know your SSID name to access your router wirelessly.)

Level 3: Limit access to certain wireless devices

Wireless MAC Authentication (Allows you to limit access to your wireless network by allowing only those devices with specific MAC addresses.)

802.11b/g Mode (Allows you to limit access to your wireless network based on the type of technology.)

Other Advanced Wireless Options

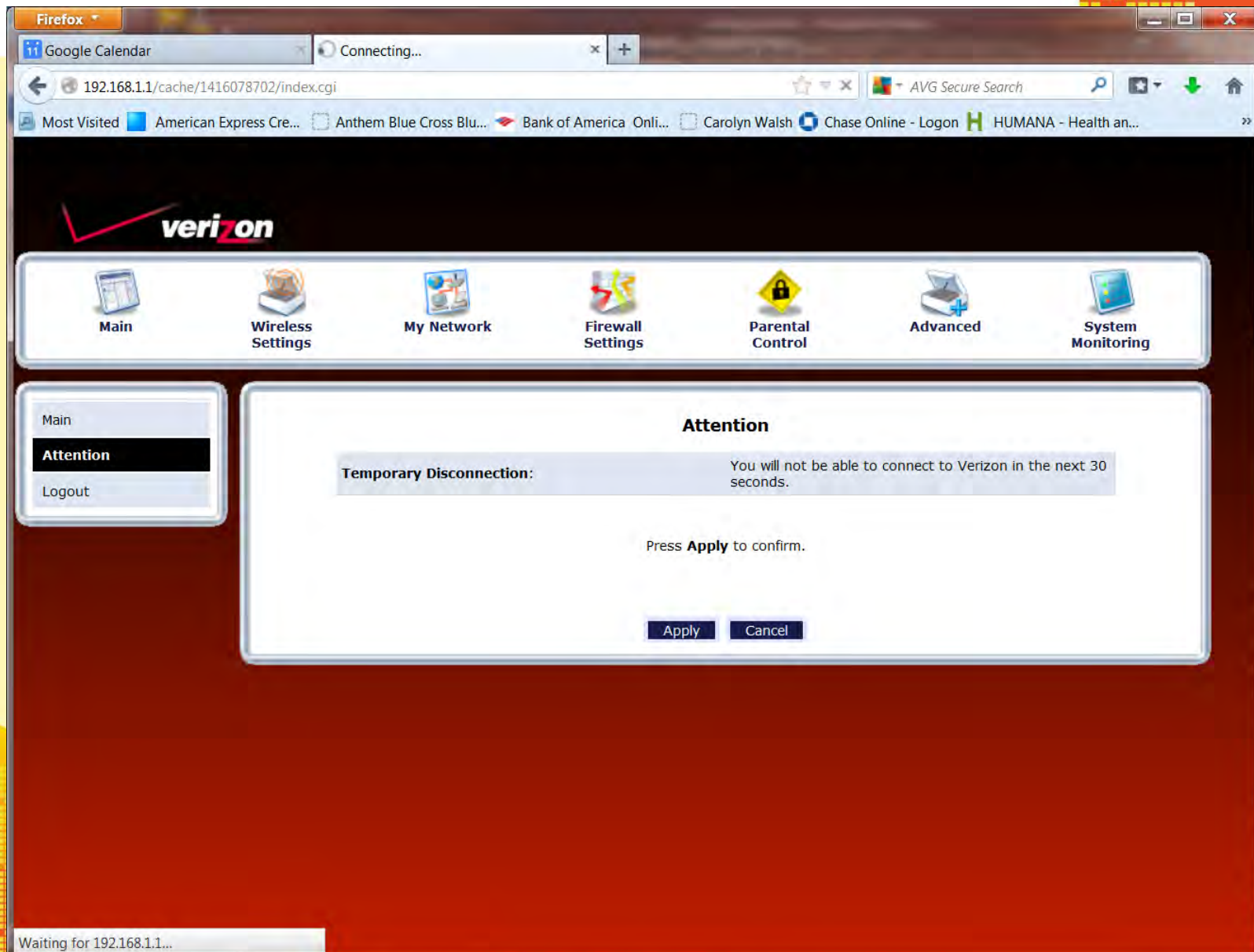
Setting WPA2 with AES using a 10 character or more random key (write it down!)

The screenshot shows a Firefox browser window displaying the Verizon router's configuration page. The address bar shows the URL `192.168.1.1/cache/1230673175/index.cgi`. The Verizon logo is at the top left. A navigation bar contains icons for Main, Wireless Settings, My Network, Firewall Settings, Parental Control, Advanced, and System Monitoring. A left sidebar lists: Main, Wireless Status, Basic Security Settings, Advanced Security Settings, and Logout. The main content area is titled "WPA2" and contains the following settings:

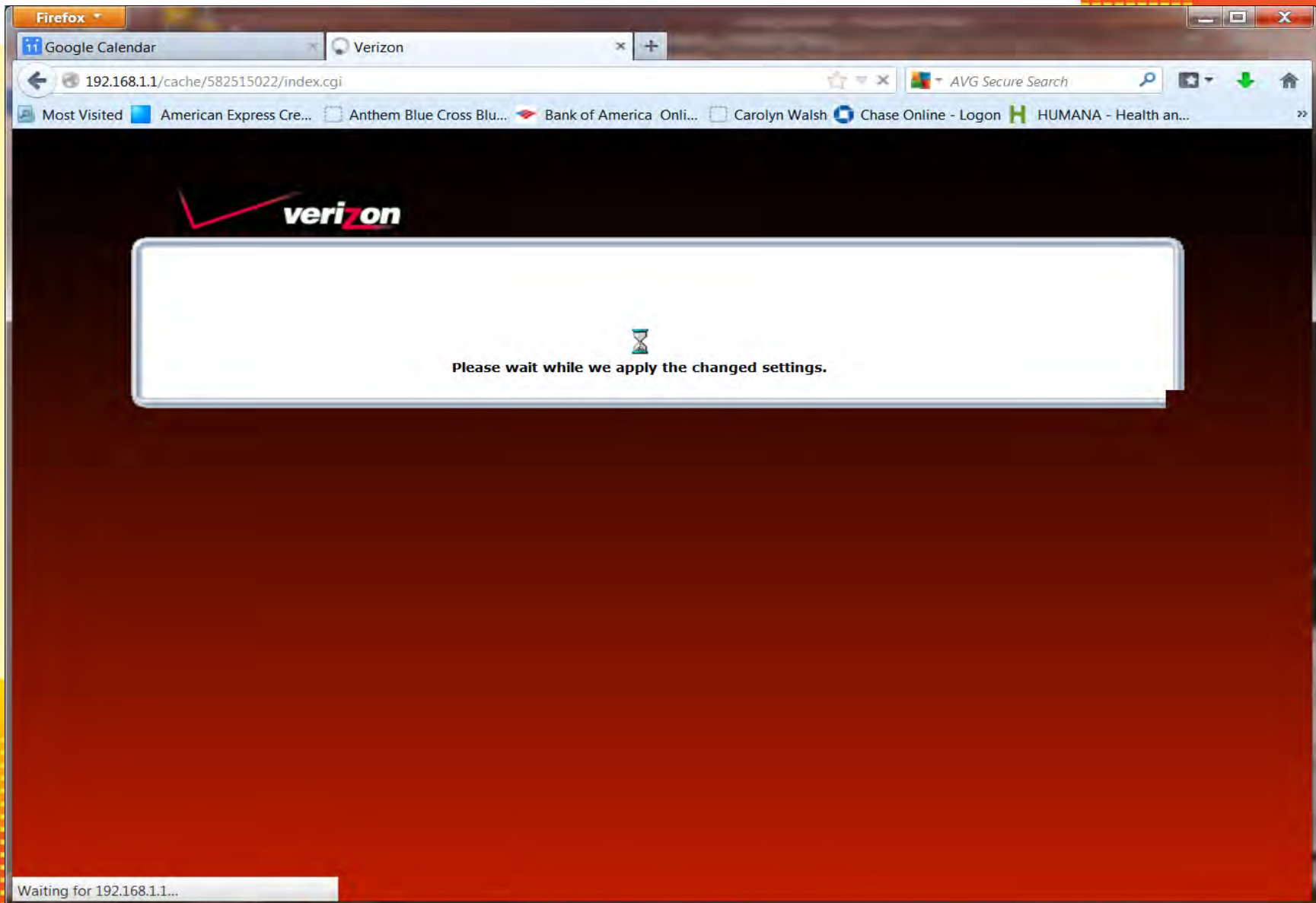
- Authentication Method:** Pre-Shared Key (dropdown)
- Pre-Shared Key:** 10+random (text input, highlighted with a box) and ASCII (dropdown)
- Encryption Algorithm:** TKIP+AES (dropdown)
- ☒ **Group Key Update Interval:** 3600 Seconds

At the bottom of the settings area are "Back" and "Apply" buttons.

Confirm by clicking “Apply”.



Wait for it to happen.



Getting Your Devices on the new Network

- You will need to go thru the network setup of any wireless devices you use
 - Laptops/Desktops
 - Network Printers
 - Games like Wii, Xbox, Nintendo ...
 - Smart Phones
 - Any other device that depends on your network
- Keep your SSID and WPA2 Key in a safe place
 - You will need it to reconnect or add any network device

PROTECTING YOUR PERSONAL COMPUTERS/TABLETS

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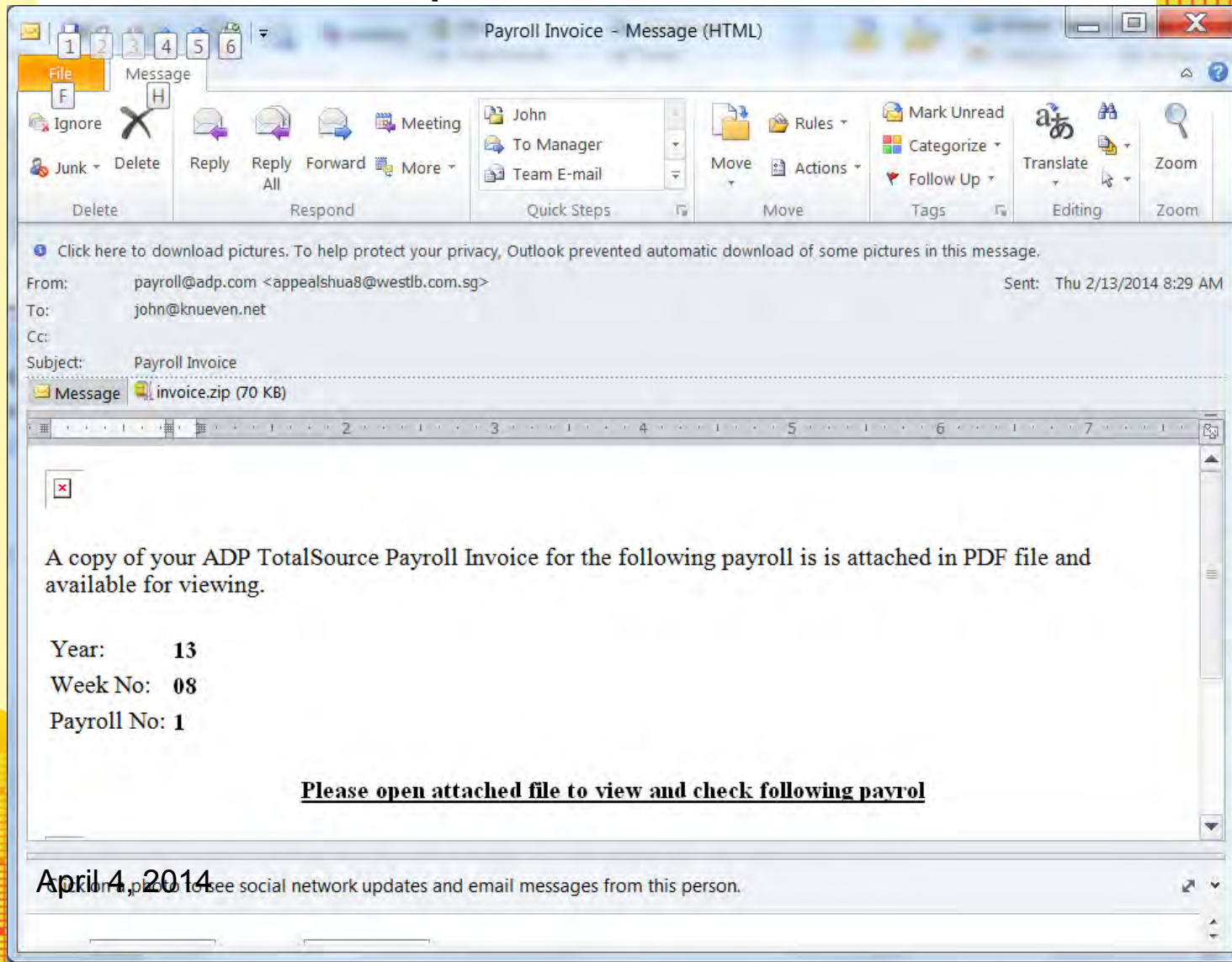
Primary Sources of Attack

- Network: unprotected wireless
 - Protect with WPA2 or turn wireless off
 - Your Router has a good “firewall”
 - Network Address Translation (NAT): Does NOT accept incoming connection attempts
- eMail
 - Beware of attachments, especially .zip files, but including .exe, .vbs, .com, and .bat
 - Imbedded Web Links
 - Hover mouse over “link” to see actual web address!
 - Hoax emails
 - Unbelievable stories (probably not true!) “chain” letters
 - Offers to make money quick and “Hook up” offers
- Hacker web sites
 - Watch carefully the root of a web site (mail.verizon.net is different than verizon.mail.net!)

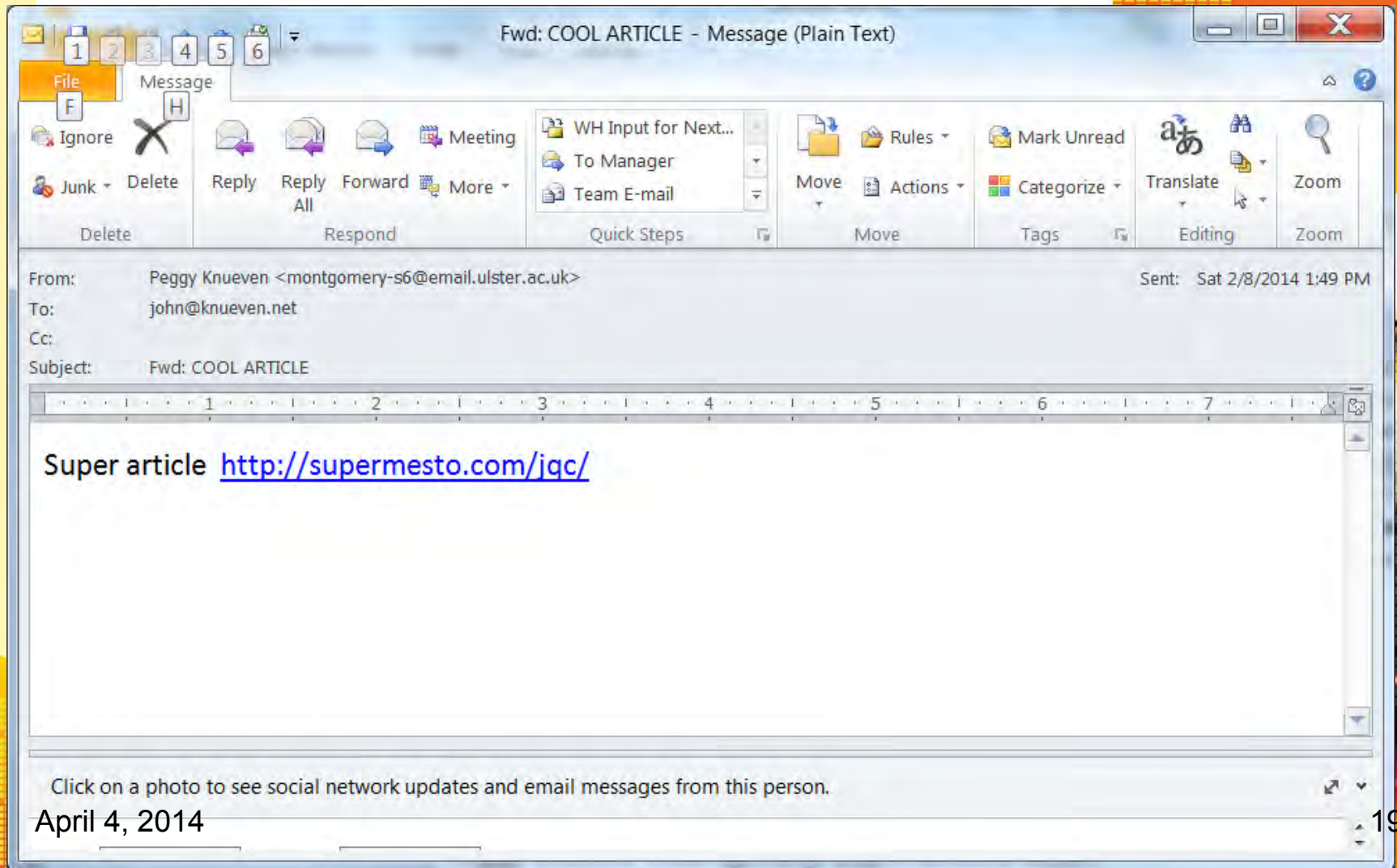
Restrict the Use of Administrator!

- Never surf the net or read email when you are an Administrator
 - Have at least 2 IDs on your computer
 - One normal ID that you use every day for most functions like surfing the net or email
 - One Administrator ID you use to install programs/applications or perform privileged functions

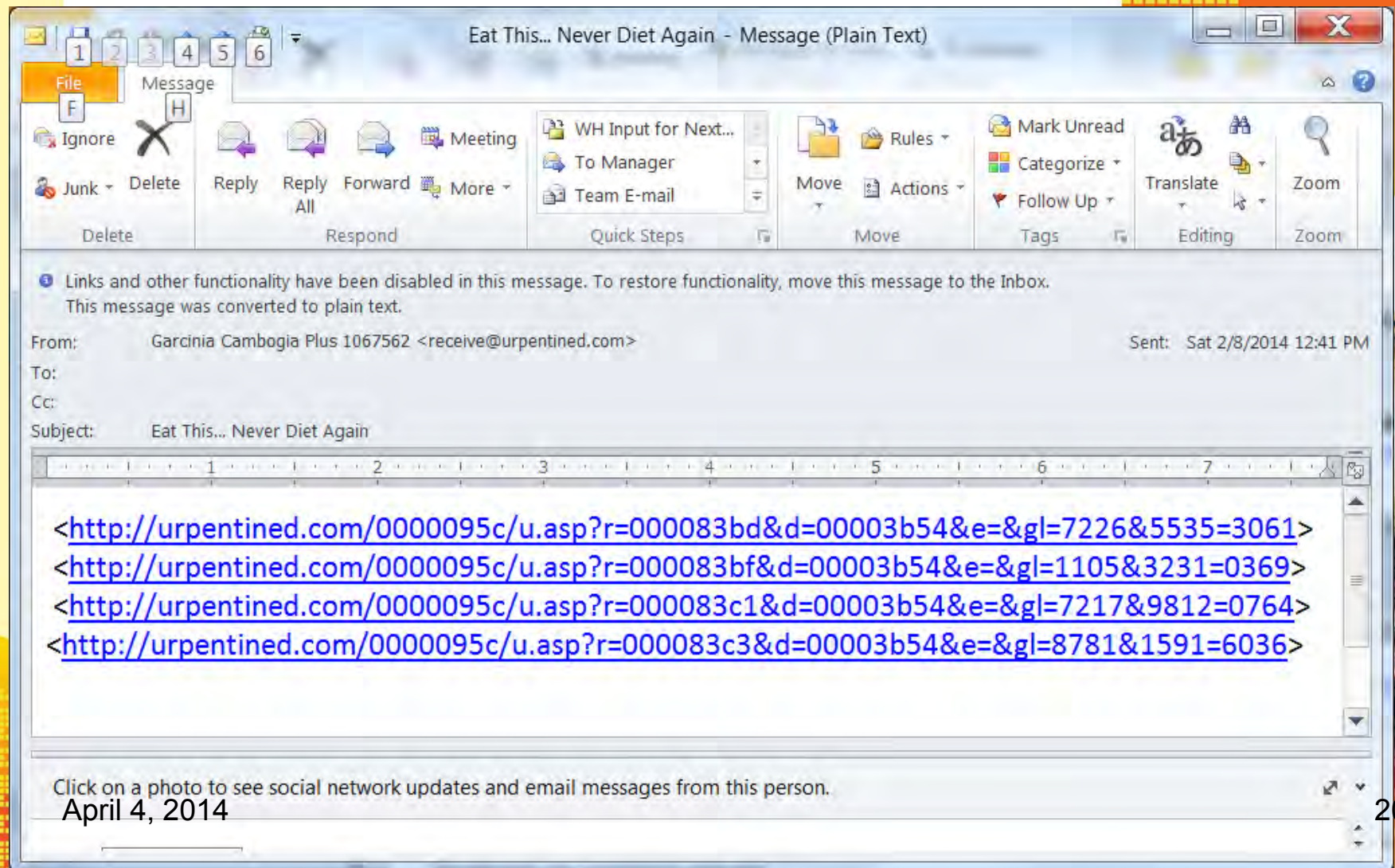
eMails with .zip files!



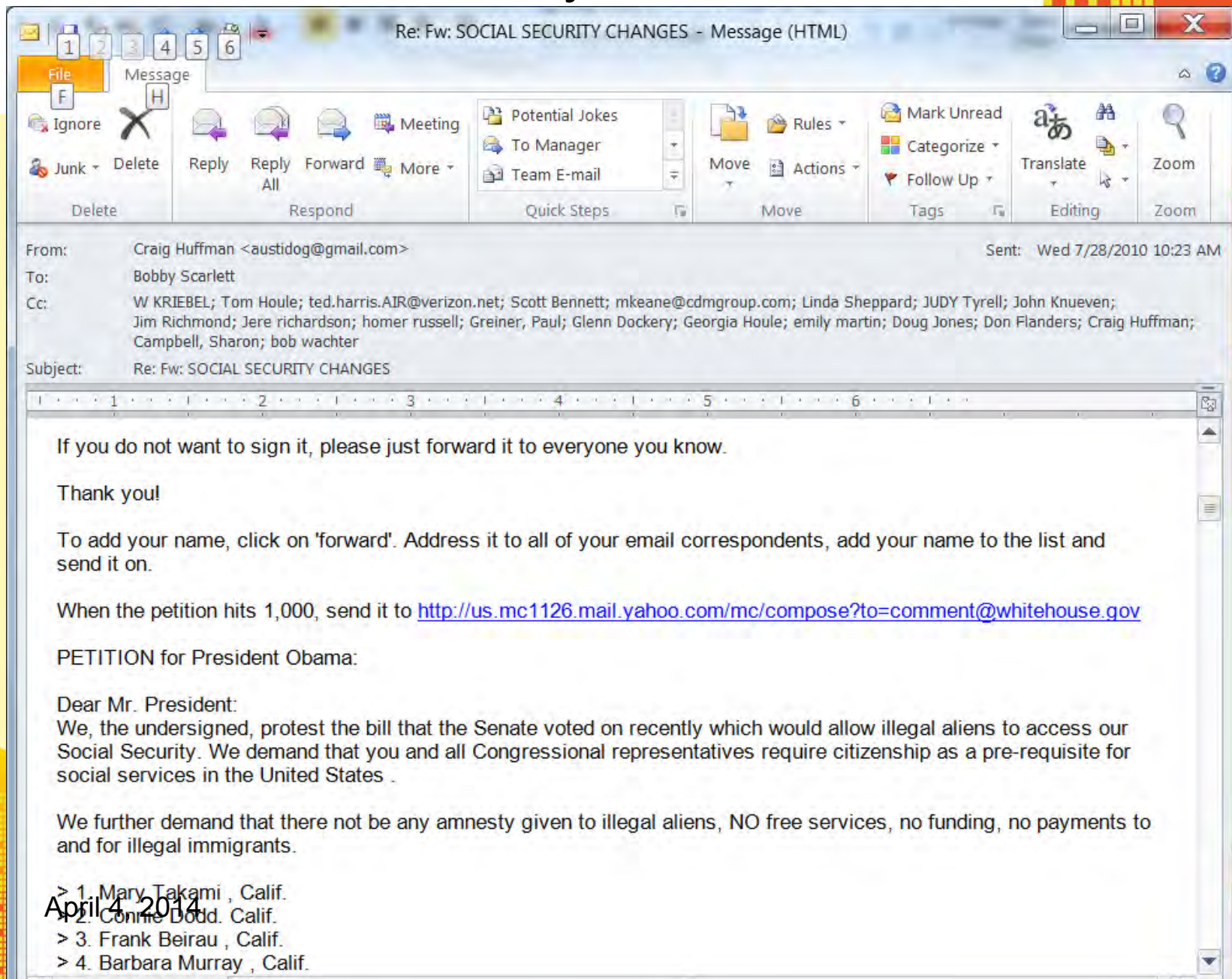
eMails from someone you know



Junk eMails

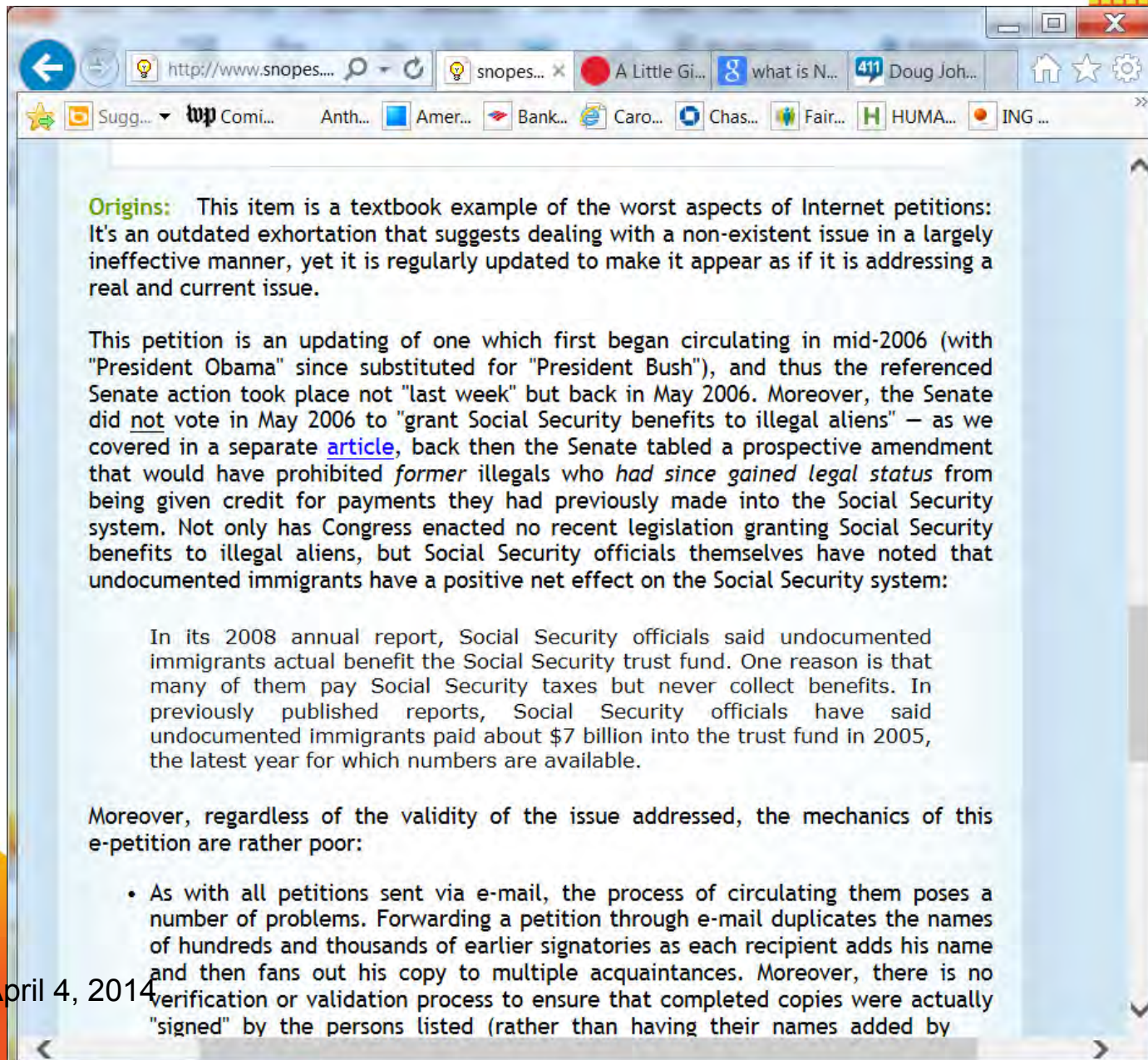


Hoax eMails – usually “chain” letter



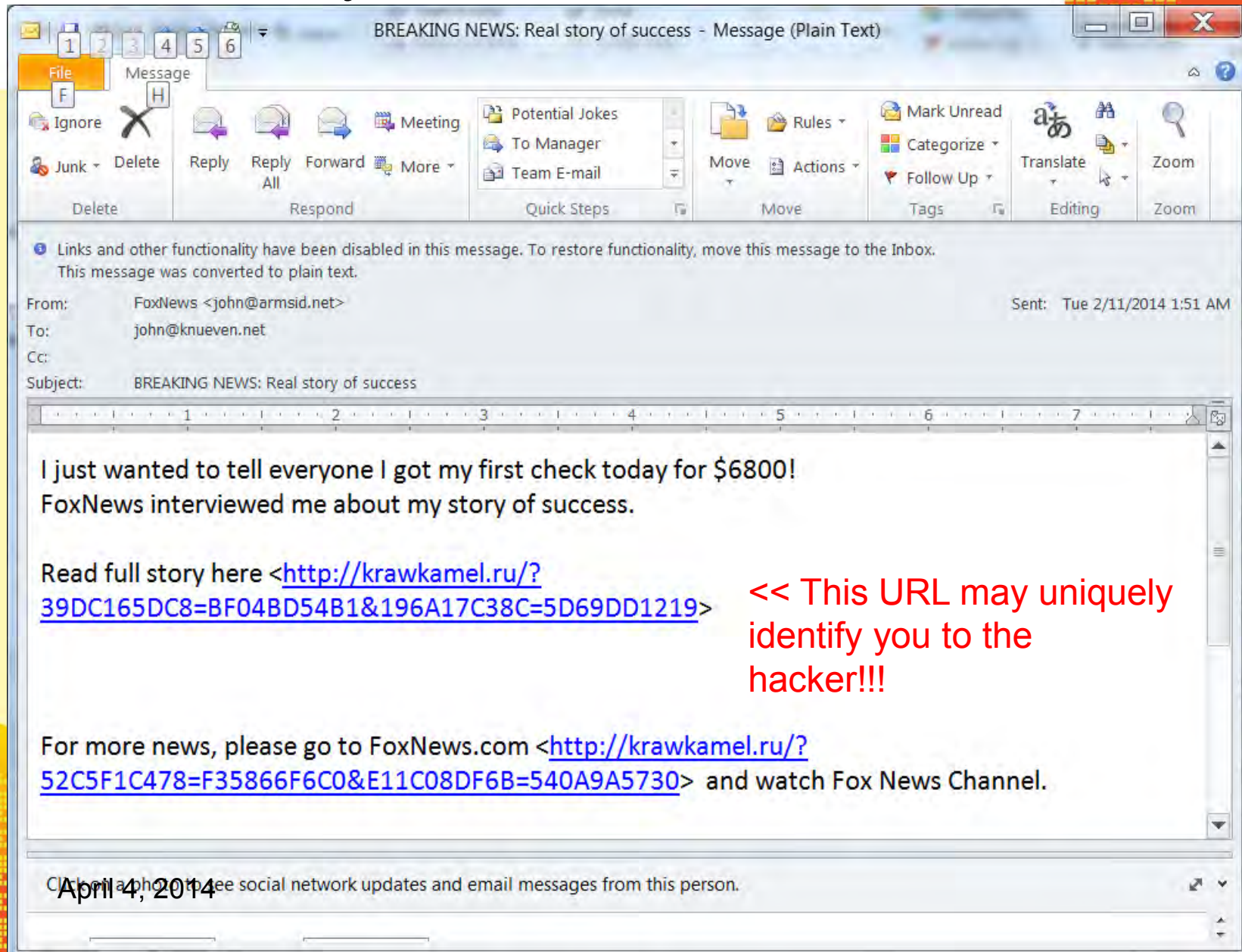
> 1. Mary Takami , Calif.
> 2. Connie Dodd. Calif.
> 3. Frank Beirau , Calif.
> 4. Barbara Murray , Calif.

Use www.snopes.com to check Hoax

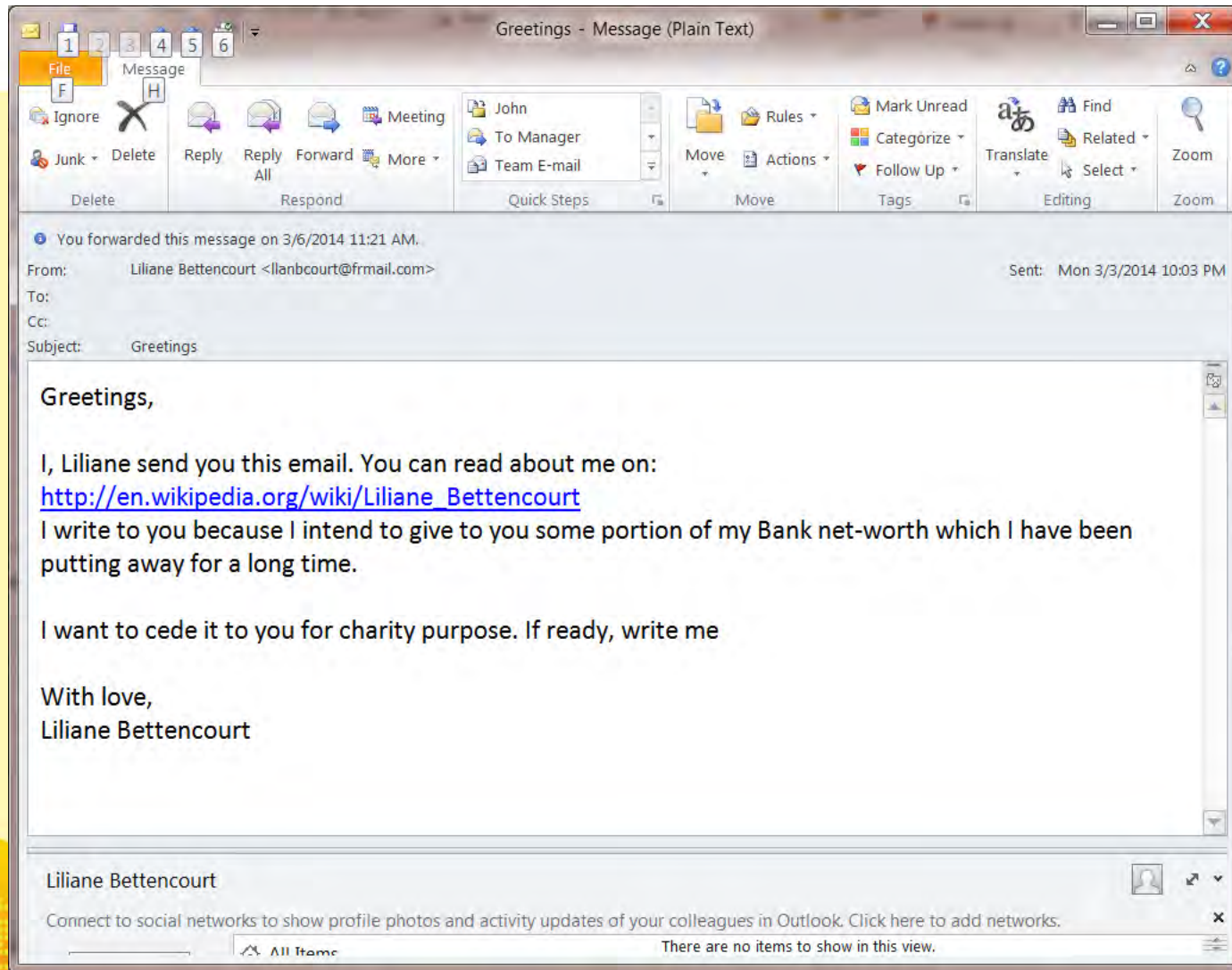


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Make Money Fast!

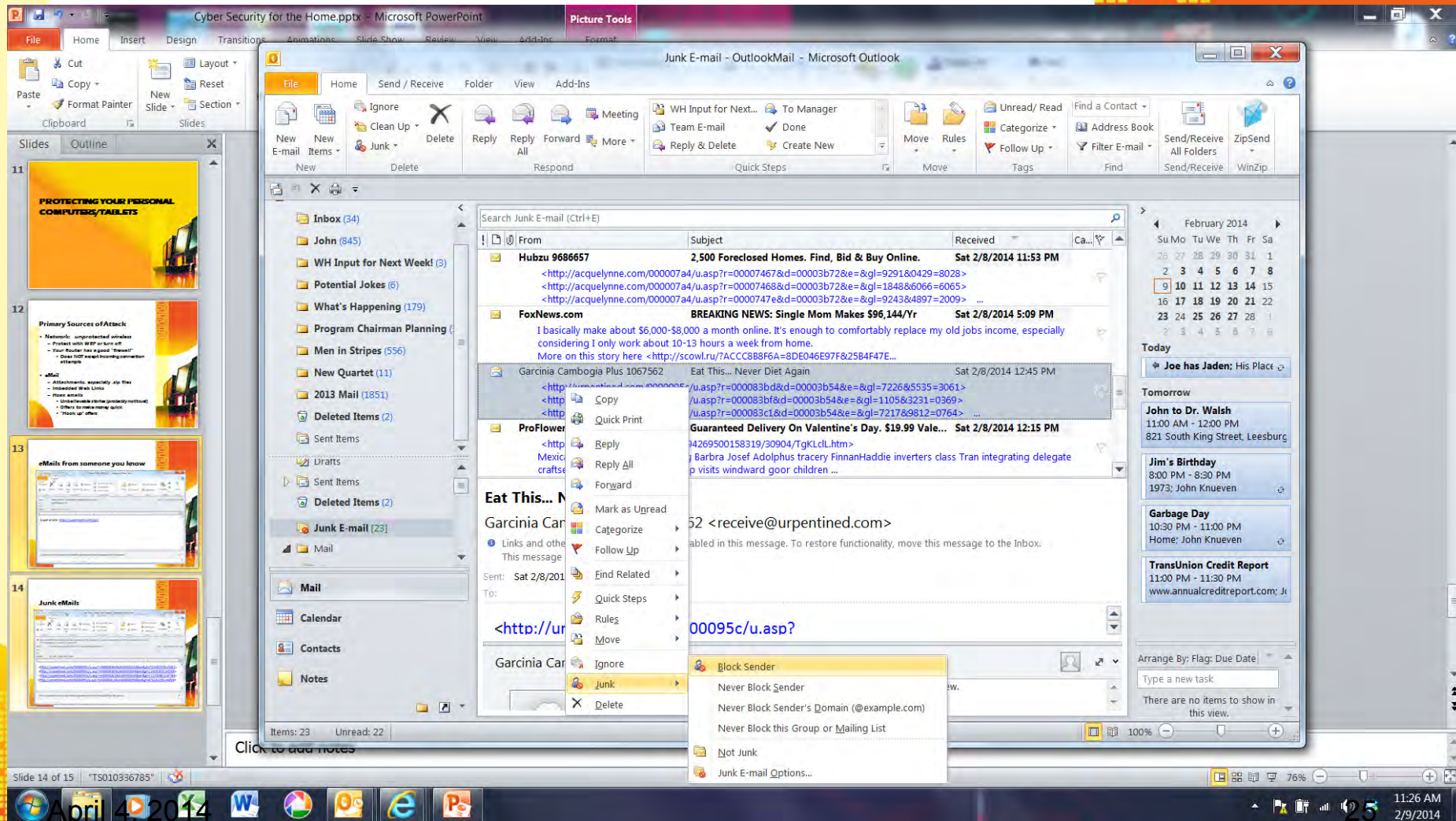


“Hook-up” Offers



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Block Sender (Outlook)



Block Sender (Verizon)

The screenshot shows the Verizon email settings interface. At the top, there's a navigation bar with 'RESIDENTIAL', 'BUSINESS', and 'WIRELESS' tabs. Below this is a search bar and a 'Web' button. The left sidebar contains a menu with 'General Settings', 'Account Settings', 'Email Settings', 'Calendar Settings', 'Import', 'Set Up POP Email Client', and 'Email Help'. The 'Email Settings' section is expanded, showing 'Options', 'Filters', 'Spam Detector', 'Forwarding', 'Blocking', 'Vacation Reply', and 'Signature'. The 'Blocking' option is selected, and the 'Blocking' sub-tab is active. The main content area shows a 'Blocking' section with a 'Save' button, a 'Cancel' button, and a note: 'Note: Your email setting change may take a few minutes to take effect.' Below this, there's a description: 'The Blocking feature allows you to choose who can contact you and you can also manage images you may receive.' There are three radio button options: 'Do not use Block Senders list', 'Delete the email from the Blocked Senders list' (which is selected), and 'Save the email from the Blocked Senders list' with a 'Select A Folder' dropdown menu. Below these options is a 'Blocked Senders' section with a description: 'Messages from blocked senders are automatically deleted or placed in a specific folder. You can also block an email address or a domain (the part of an email address after the @ sign).' There's a text input field for 'Block this email address:', an 'Add' button, and a link 'or Select from Contacts'. At the bottom of the 'Blocked Senders' section, it says 'There are no Mail Addresses found in Block Senders List.'

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PROTECTING YOUR PERSONAL INFORMATION

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Internet Quiz

- If it is on the Internet, it must be true?
- No one can see my emails except the person(s) I send it to?
- The Internet is free?
- If I use secure web (https://) I am safe?
- Where does my browser store IDs and Passwords I save?
- How does a store know who I am and what I bought previously?

Internet Quiz Answers

- If it is on the Internet, it must be true?
 - Wrong! Anyone can post anything! Learn which sites to trust.
- No one can see my emails except the person(s) I send it to?
 - Wrong, unless you send encrypted! And emails can be forwarded!
- The Internet is free?
 - Almost true. You pay your ISP and many sites use advertising.
- If I use secure web (https://) I am safe?
 - Not totally, but it's the best you can do.
- Where does my browser store IDs and Passwords I save?
How does a store know who I am and what I bought previously?
 - Cookies stored by your browser.

Recommendations

- Secure your Wireless Router with WPA2
- Never allow your browser to “remember” your ID or Password
- ALWAYS use secure web (https://) when entering an ID/Password, or any other financial or personal data
- Set your search page to secure https:
 - <https://www.google.com/>
- Beware of eMails that sound too good to be true: it probably isn't true!
- Never open an attachment or click a link unless you are positive it came from someone you trust!
 - Don't trust the return email address
 - If not sure, call them by phone to verify (don't reply)

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