#### Whose Internet Is It, Anyway?

Blackhat DC 2010 Andrew Fried, ISC, SURBL Richard Cox, Spamhaus Ben Butler, GoDaddy





#### How we use the Internet



- Web Surfing
- Email
- Social Networking (Facebook, MySpace,Twitter)
- Word Processing, Spreadsheets, Powerpoint
- VoIP



## What the bad guys attack



- Web Surfing
- Email
- Social Networking (Facebook, MySpace,Twitter)
- Word Processing, Spreadsheets, Powerpoint
- VoIP



# Who "owns" the Internet

- Internet consists of tens of thousands of independently owned and operated networks
- Various networks are connected via telecoms, ISPs, and backbone providers
- Private peering arrangement between providers
- Public peering points that connect the ISPs and Providers

No one entity owns the Internet! No one entity is in charge of the Internet.



Subject: possible fraudulent transaction and/or collusion with your VISA card

Dear VISA card holder,

A recent review of your transaction history determined that your card was used at an ATM located in Guam, but for security reasons the requested transaction was refused. You need to complete the VISA Card Holder Form. You can do this by clicking the link below:

http://sessionidE0WIGZT1Z.cforms.visa.com/secureapps /vdir/cholderform.php?ref=87246604936107283808320562509325871294865306269561489911261467696265& email=

VISA Cards Support

ID: YZDYDOND00EJ9Y5JSG9S2Z66XT3W5EM1IDU4



From: Wachovia <usp@ppla.com> Date: Wed, 27 Jan 2010 10:39:41 -0500 To: <undisclosed-recipients:;> Subject: New Alert Message



#### UNAUTHORIZED ACCESS TO YOUR WACHOVIA ONLINE BANK ACCOUNT

Dear Wachovia Customer,

We recently have determined that different computers have logged in your **Wachovia Online Banking account**, and multiple password failures were present before the logons. We now need you to re-confirm your account information to us. If this is not completed by **January 28, 2010**, we will be forced to suspend your account indefinitely, as it may have been used for fraudulent purposes. We thank you for your cooperation in this manner. In order to confirm your Online Bank records, we may require some specific information from you.

• To restore your account, please follow the link below:

https://onlineservices.wachovia.com/auth/AuthService

Thank you for using Wachovia Online Service.

The Wachovia Bank Team.

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From: Western union® [mailto:infor@westernunion.com] Sent: Wednesday, January 27, 2010 3:23 PM Subject: Important aknowledgement from Western union® money transfer

#### Dear Sir/Madam

There is an issue with the Western Union Money Transfer in the amount of \$500,000.00 (Five Hundred Thousand United State Dollar) directed in "Automated Teller Machine" (ATM)Card at the owner of this email address. The International Monetary Fund contacted us for your compensation a couple of hours ago due to your allocated security code.They choose to send it to an email address instead of a name. We are unable to complete your ATM delivery to an email address, so we require some more information in order to complete this Delivery.

- Full Name:
- Full Contact Address:
- Mobile Phone Number:
- Occupation:
- Sex:
- Marital Status:
- Age:

In order to effect this delivery, please email via Western Union Automated Teller Machine (ATM) Department:- westernunion\_atmcard2009@upmail.us As soon as this information is received, your ATM card Will be delivered to your

doorstep through a Diplomatic Courier Company and the tracking number will be sent to you to enable you track it down before its arrival in your country. NOTE:You are required to reconfirm your Full name,House address where the Automated Teller Machine will be sent.

Your valid telephone number is also needed for easy communication.

The Management Of Western Union Money Transfer, Dispatched This Day Sincerely,

Mr. Mark Greg. www.western union.com

Western Union®

Welcome to Western Union - Send Money Worldwide

Registered © 2008 - 2009 Western Union Money Transfer All Right Reserved



Subject: BMW Automobile Award Programmed To: Date: Saturday, January 23, 2010, 7:36 PM

BMW Automobile Award Programmed Your Email Address Has Won You A Car and a cash prize of 750,000GBP In the BMW Automobile Promotion Held in United Kingdom. To claim your prize Contact David Brown. Email: bmwawareness@bmwdealernet.com Telephone Number:+ +447024038675 1 Name, 2 Address: 3 Mobile No: 4 Age: 5 Sex: 6 Occupation: 7 Country: All mail should go to bmwawareness@bmwdealernet.com Regards, Bmw Promo Team. Phone No: +447024038675



Subject: IRS REFUND Notification - Please Read This!

# Internal Revenue Service

United States Department of the Treasury

After the last annual calculations of your fiscal activity we have determined that you are eligible to receive 546.47\$ tax refund under section 501(c) (19) of the Internal Revenue Code. Please submit the <u>Tax Refund Request Form</u> and allow us 3-9 days to process it.

Yours faithfully, Sarah Hall Ingram, Commissioner

This notification has been sent by the Internal Revenue Service, a bureau of the Department of the Treasury.



Subject: Tax Refund



After the last annual calculations of your fiscal activity we have determined that you are eligible to receive 439.42\$ tax refund under section 501(c) (25) of the Internal Revenue Code. Please submit the <u>Tax Refund Request Form</u> and allow us 3-9 days to process it.

Yours faithfully, Sarah Hall Ingram, Commissioner

This notification has been sent by the Internal Revenue Service, a bureau of the Department of the Treasury.



su

#### Your email, Your inbox

rom ebay Member: user17	3 <test@test.com> 🖄</test@test.com>	★ reply ▼ → forward archive junk  dele			
ject You've received a que	1/20/10 6:00				
to undisclosed-recipient	si; 😭	other actions			
eBay sen Your regis	<b>t this message from user173 (</b> Elodia William <b>).</b> tered name is included to show this message originated from e <u>Bay. Learn more.</u>				
Question about ite	em -Respond Now				
Do not respond to programs. Learn r	the sender if this message requests that you complete the transaction outside of eBay. This type of offer is against e more.	Bay policy, may be fraudulent, and is not covered by buyer protection			
Dear member,					
I' would like to know how	much to start shipping charges for Miami (FL) and if pickup is available for this auction.	Respond Now			
Thanks in advance and v	vait for your answer, when you are available.	Responses will not include your email address.			
Regard's.					
- user173					
Item and user details					
Item number:	220507397590				
Item URL:	cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=220507397590&sspagename=ADME:B:AAQ:1				
End date:	Thursday, Jan 22, 2010 13:02:12 PDT				
From User:	user173 ( 6245 🚖 ) 🏦 Sever 🖾				
	99.7% Positive Feedback Member since Nov-22-02 in United States				
	Activity with user173 (last 90 days): I have bid on 0 items from user173.				
This message was sent w	vhen the listing was active. <b>user173</b> is a potential buyer.				
i Marketplace Safety T	ip				
Second Chance Offer ema Chance Offer for item".	alls with the subject of "message from eBay Member" are fake. Real <u>Second Chance Offers</u> come directly from eBay	and also appear in My Messages with a subject stating "eBay Second			
Never pay for your eBay item using instant case wire transfer services through Western Union or MoneyGram. These payment methods are unsafe when paying someone you don't know. Learn more about sending asyments.					
s this email inappropriate? Does it violate eBay policy? Help protect the Community by reporting it.					
arn how you can protect yourself tp://pagmes.ebay.com/education/s					
		anne your politication preferences			
eusy involve reas sein, vir verien vir einverter eusy neinverter eusy panvini anv ill stoordestos wan our matery roncy, is you would als to roceve tins entiel in exit romat, cristige your <u>roteneeroos</u> ,					

See our Privacy Policy and User Agreement if you have questions about eBay's communication policies. Privacy Policy: <u>http://pagems.ebay.com/htels/policies/pcr/sucy-policy.html</u> User Agreement: <u>http://pagems.ebay.com/htelp/policies/user-agreement.html</u>

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#### e⇒cards

from Hallmark

#### A Friend has sent you a Hallmark E-Card.

If you recognize this name, click the link to see your E-Card. <u>http://www.hallmark.com/ECardWeb/ECV.jsp?a=EG0694272732475M245925860Y&</u> product\_id=

If this name is not familiar to you and you're concerned about online security, please use the following steps:

- 1. Visit http://www.hallmark.com/getecard
- 2. Enter your e-mail address in the Original Recipient.s E-Mail Address box.
- 3. Enter EG0694262772475 in the Confirmation Number box.
- 4. Click Display Greeting.

Want to send an E-Card too ? Visit www.hallmark.com/ecards

To view Hallmark's privacy policy or for questions, visit <u>www.hallmark.com</u>, and click the links at the bottom of the page.

Hallmark Cards, Inc., 2501 McGee, P.O. Box 419034, Kansas City, MO 64141



from PayPal Australia <info@paypal.com.au> 😭 subject Your account access has been limited

reply-to noreply@paypal.com.au 😭

to undisclosed-recipients:; 😭



Resolution Center: Your account access has been limited.

#### Dear Customer,

During the regular update and verification process of PayPal Accunt, we could not verify your current information. Some of the possible reasons for this are:

- Changes in your current contact information;
- Incomplete contact information;

Hence, your access to use this service has been limited.

To restore your Online account please click on the link below, log into your Online Account and follow the instuctions on your screen.

http://www.paypal.com.au/au/

Note: Only submit your information via this secure link. Do not submit your information via email since this is not a secure way of sending sensitive data.

Thank You. \* Please do not reply to this email, as your reply will not be received. This is an automatic notification of new security messages. Code #83945



Subject: possible fraudulent transaction and/or collusion with your VISA card

Dear VISA card holder,

A recent review of your transaction history determined that your card was used at an ATM located in Guam, but for security reasons the requested transaction was refused. You need to complete the VISA Card Holder Form. You can do this by clicking the link below:

http://sessionidE0WIGZT1Z.cforms.visa.com/secureapps /vdir/cholderform.php?ref=87246604936107283808320562509325871294865306269561489911261467696265& email=

VISA Cards Support

ID: YZDYDOND00EJ9Y5JSG9S2Z66XT3W5EM1IDU4



Subject: official "Underreported Income Notice" to taxpayer

Taxpayer ID: -00000456101707US Tax Type: INCOME TAX Issue: Unreported/Underreported Income (Fraud Application)

Please review your tax statement on Internal Revenue Service (IRS) website (click on the link below):

review tax statement for taxpayer id: -00000456101707US

Internal Revenue Service



#### Dear Sir/Madam,

My name is Kerry Rind. I work with a reputable Bank here in the Netherlands. I have Business Proposal of twenty Million Euros (20 Million Euros) for you to handle with me from my bank. I will need you to help me in transferring the above funds from the Netherlands to your country. I need to know if you will be able to handle this with me before I explain to you in details.

Should you be interested please send me your;

1, Full names,

2, Occupation,

3, Private phone number,

4, Current residential address

Finally after that I shall furnish you with more information about this project. However I shall be waiting your response and assurance. Your earliest response to this letter will be appreciated. Do contact me on my email address: <u>kerryrind@hotmail.com</u>.

Kind Regards

Mr. Kerry rind







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#### $\ll(MaxGentleman)>>$

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- Dr Richard N. Hoffman

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# Researcher's "View"

Possible botnets detected: sucipa.vc Host: sessionidVTKFJX5L8ZY.cforms.visa.com.sucipa.vc

183.87.51.225	189.18.108.77	189.192.53.189
189.194.129.62	189.231.5.193	190.213.161.169
201.43.140.52	201.139.142.208	93.177.185.72
94.55.1.250	94.240.225.56	95.104.39.180
118.33.211.102	123.231.59.214	124.25.235.164



#### Researcher's "View"

uiurluso.cn uivcxwno.cn uivjvvko.cn uivkrsuo.cn uivtyywo.cn uiwpyvbo.cn uiwweoco.cn uiwyhjlo.cn uixaevjo.cn uixdjgfh.cn uixjnrqo.cn uixxmiho.cn uiymdmmo.cn uiyzfkoo.cn uizghezo.cn uizmfmwo.cn ujanxgio.cn



URL gets captured in the spamtrap:

http://alerts.cforms.visa.com.iursedq.com.vc/secureapps/vdir/ cholderform.php? ref=3D224366338567325670281313395621728265132179 86215473428007364284341942084744511&email=XXXX



#### The chase is on to put the pieces of the puzzle together





#### **Fake Whois**

Created On:27-Jan-2010 20:29:24 UTC Last Updated On:27-Jan-2010 20:29:24 UTC Expiration Date:27-Jan-2011 20:29:24 UTC Sponsoring Registrar:IP Mirror Pte. Ltd. (R116-LRCC)

Registrant Name:Ayenne Applebaum Registrant Organization: Registrant Street1:6505 Marissa Circle Registrant Street2: Registrant Street3: Registrant City:Lake Worth Registrant State/Province:Lake Worth Registrant Postal Code:58441 Registrant Country:US Registrant Phone:+1.5613123655



# It's a Fast Flux Domain!

;; ANSWER SECTION:

iursedq.com.vc.	1800	IN	А	115.177.129.136
iursedq.com.vc.	1800	IN	А	116.50.154.197
iursedq.com.vc.	1800	IN	А	118.33.211.102
iursedq.com.vc.	1800	IN	А	189.110.149.105
iursedq.com.vc.	1800	IN	А	189.193.229.197
iursedq.com.vc.	1800	IN	А	189.194.133.9
iursedq.com.vc.	1800	IN	А	189.194.204.79
iursedq.com.vc.	1800	IN	А	190.213.161.169
iursedq.com.vc.	1800	IN	А	200.95.250.127
iursedq.com.vc.	1800	IN	А	201.43.140.52
iursedq.com.vc.	1800	IN	А	201.139.142.208
iursedq.com.vc.	1800	IN	А	211.255.29.30
iursedq.com.vc.	1800	IN	А	69.79.96.70
iursedq.com.vc.	1800	IN	А	114.24.3.17
iursedq.com.vc.	1800	IN	А	114.186.241.236



# View via Passive DNS

#### Found 115 records

IP Address	ASN	BGP Netblock	First Seen	Host/Domain
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:24:08	0ds45e6wpj.cforms.visa.com.sucipy.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:14:27	28uvidr59n.cforms.visa.com.sucipa.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:36:11	alerts.cforms.visa.com.freeimagesonly.be
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:26:27	alerts.cforms.visa.com.gyueeerf.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:10:36	alerts.cforms.visa.com.iurseda.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:21:56	alerts.cforms.visa.com.iurseda.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:27:06	alerts.cforms.visa.com.iursedq.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:27:40	alerts.cforms.visa.com.iursedz.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:48:48	alerts.cforms.visa.com.sucipa.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:07:17	alerts.cforms.visa.com.sucipa.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:46:41	alerts.cforms.visa.com.sucipy.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:17:23	freeimagesonly.be
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:22:22	g1huwpc6eux0c5g.cforms.visa.com.iurseda.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:37:41	medirams.com
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:32:42	reports.cforms.visa.com.freeimagesonly.mobi
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:17:21	reports.cforms.visa.com.gyueeerh.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:12:55	reports.cforms.visa.com.iursedz.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:22:40	reports.cforms.visa.com.medirams.com
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:47:38	reports.cforms.visa.com.sucipa.vc
115.177.129.136	2510		2010-01-27 14:22:47	reports.cforms.visa.com.sucipe.com.vc



# View via Passive DNS

115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:29:01	transactions.cforms.visa.com.iursedz.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:20:24	transactions.cforms.visa.com.norytioq.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:33:16	transactions.cforms.visa.com.norytiox.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:45:07	transactions.cforms.visa.com.sucipa.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:35:21	transactions.cforms.visa.com.sucipy.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:34:03	www.irs.gov.freeimagesonly.co.uk
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:34:06	www.irs.gov.freeimagesonly.com
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:47:09	www.irs.gov.gyueeerd.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 15:17:16	www.irs.gov.gyueeerd.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:24:22	www.irs.gov.gyueeerf.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:11:54	www.irs.gov.gyueeers.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:30:52	www.irs.gov.gyueeeru.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:21:12	www.irs.gov.iurseda.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:40:46	www.irs.gov.iursedz.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 14:27:29	www.irs.gov.iursedz.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:34:33	www.irs.gov.norytiod.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:34:33	www.irs.gov.norytiod.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:34:17	www.irs.gov.norytioq.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:34:17	www.irs.gov.norytior.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:34:28	www.irs.gov.norytior.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:34:08	www.irs.gov.norytiox.com.vc
115.177.129.136	2510	115.176.0.0/15	2010-01-27 16:34:28	www.irs.gov.norytiox.vc



## Nameserver

#### ; AUTHORITY SECTION:

iursedq.com.vc.	1800	IN	NS	ns1.whiskybrend.net.
iursedq.com.vc.	1800	IN	NS	ns1.nodefront.net.
iursedq.com.vc.	1800	IN	NS	ns2.nodefront.net.
iursedq.com.vc.	1800	IN	NS	ns2.whiskybrend.net.



# Ah, more "leads" to chase!

#### Found 12 records

IP Address	ASN	BGP Netblock	First Seen	Host/Domain
204.12.229.89	32097	204.12.192.0/18	2010-01-21 09:15:31	ns1.24stophours.com
204.12.229.89	32097	204.12.192.0/18	2010-01-22 06:28:59	ns1.availname.net
204.12.229.89	32097	204.12.192.0/18	2010-01-18 07:06:20	ns1.disksilver.net
204.12.229.89	32097	204.12.192.0/18	2010-01-15 09:09:42	ns1.dogsgrem.net
204.12.229.89	32097	204.12.192.0/18	2010-01-26 05:21:03	ns1.girlfrendsboy.com
204.12.229.89	32097	204.12.192.0/18	2010-01-26 11:47:31	ns1.nodefront.net
204.12.229.89	32097	204.12.192.0/18	2010-01-19 06:12:41	ns1.pdsproperties.net
204.12.229.89	32097	204.12.192.0/18	2010-01-15 09:09:42	ns1.platpro-db.net
204.12.229.89	32097	204.12.192.0/18	2010-01-20 06:07:38	ns1.sorbauto.com
204.12.229.89	32097	204.12.192.0/18	2010-01-20 06:07:38	ns1.theautocompany.net
204.12.229.89	32097	204.12.192.0/18	2010-01-26 11:54:12	ns1.whiskybrend.net
204.12.229.89	32097	204.12.192.0/18	2010-01-20 09:36:29	ns1.worldkinofest.com

## **Threat Mitigation - Zeus**

- A th • V s
- Estimates of 600,000 victims
  - Anti Virus totally ineffective (less than 20% detection rates)
  - What can be done, and who should do it?



## Whack a mole approach

Security Researchers

- •Identify Fraudulent Domains
- Identify Associated Nameservers
- •Enumerate Address Space

**Internet Service Providers** 

- •Shut down web hosting accounts
- •Null route servers
- •Remove DNS records
- Lock email accounts
- •Preserve evidence for

#### **Domain Registrars**

- •Deregister Domains
- Lock accounts
- Remove DNS Glue Records

## Blackhat DC 2010 Whose Internet Is It, Anyway?

