Cyber [Crime]War]

Connecting the dots

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Agenda

- Who am I?
- CyberWar [Attack | Defense]
- CyberCrime [Attack | Defense]
- Past events revisited...
 - Connecting the dots
- Future

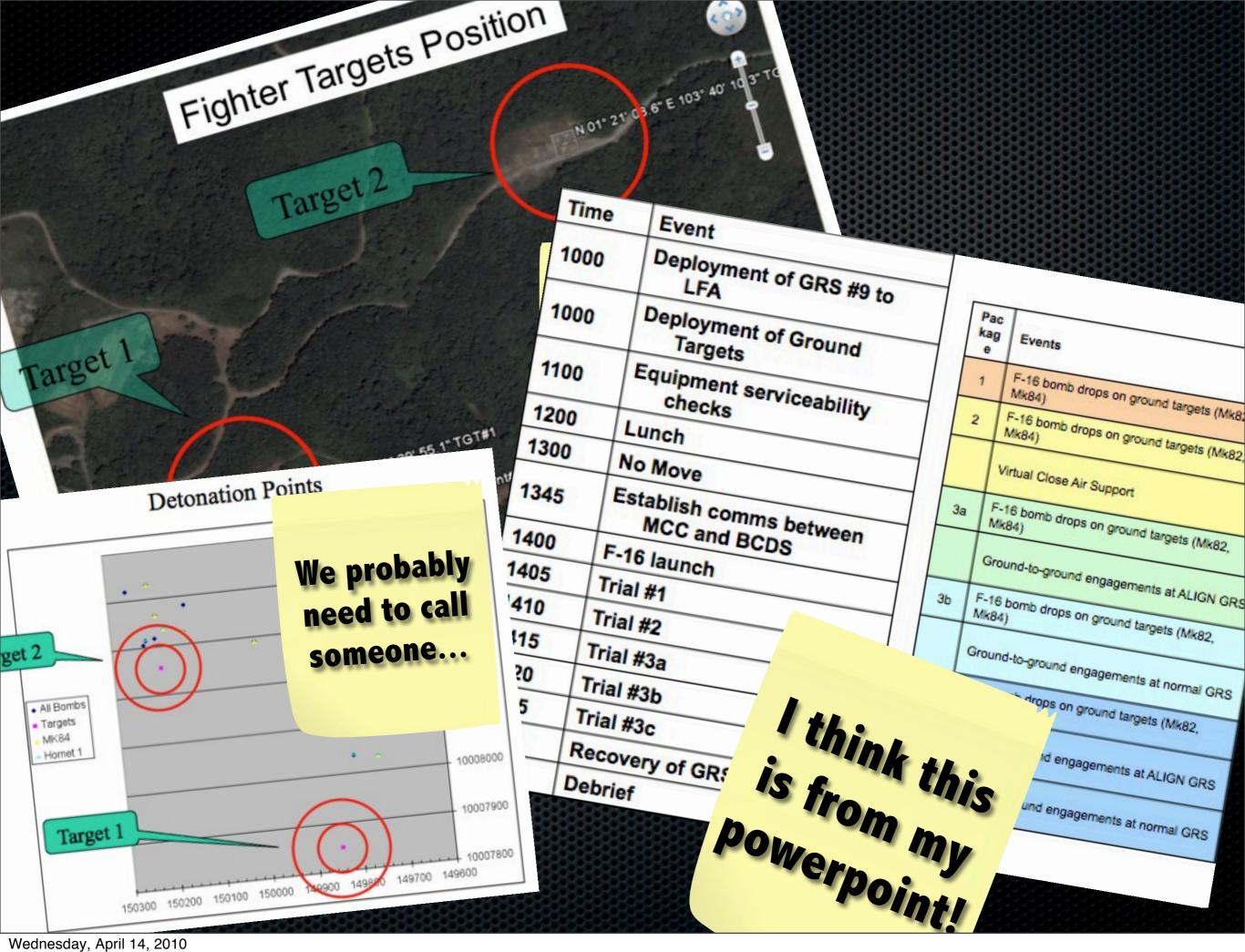
Who Am I

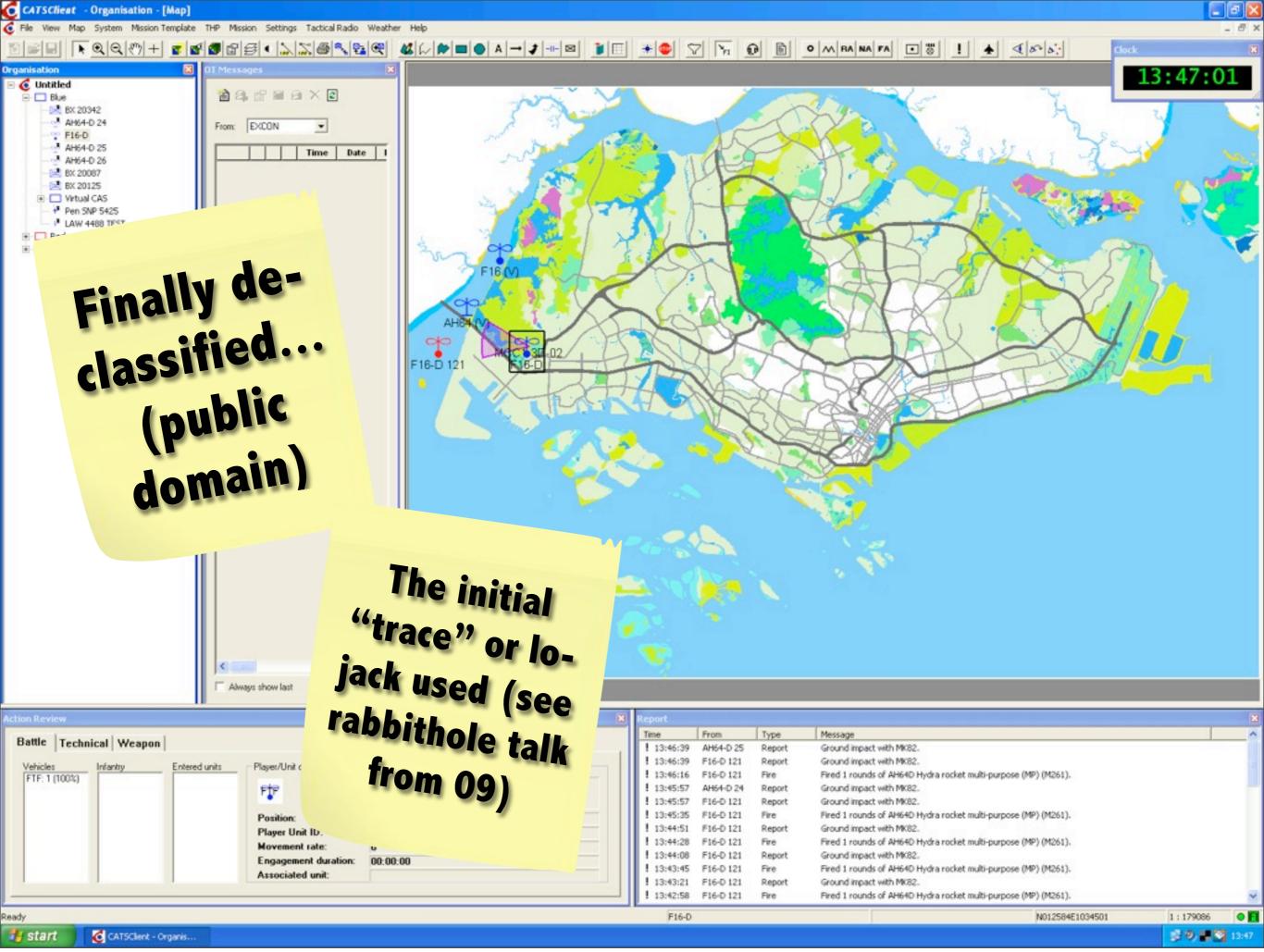


This is NOT going to be



Picking up where we left off At least as far as last year's research is concerned...

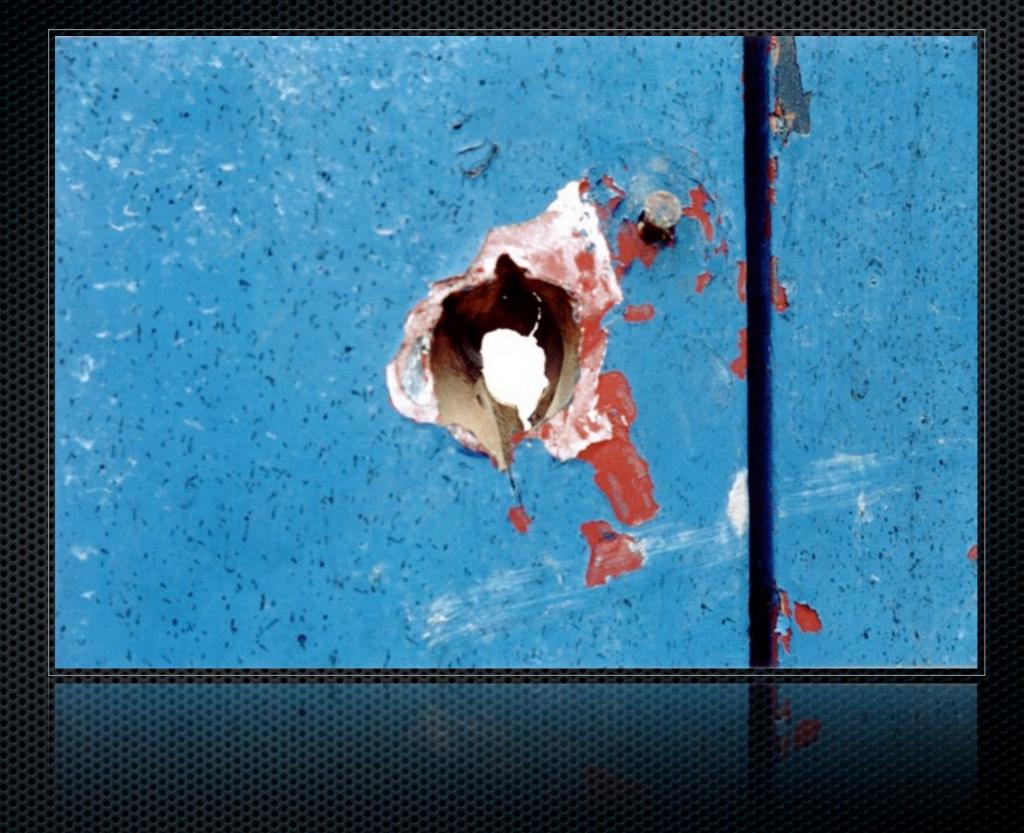




Hungry yet?

This was just the appetizer..

Question 1: What is this?



Perceptions may be deceiving...



War



War

Crime

- Government / state
- Official backing
- Official resources
- Financing
- Expertise?
- Exploits/Vulns?

- Private
- semi-official backing (think organized crime)
- Official resources
- Self financing?
- Established expertise (in-house + outsourced)
- Market for exploits

CyberWar

"Cyberwarfare, (also known as cyberwar and Cyber Warfare), is the use of computers and the Internet in conducting warfare in cyberspace."

Wikipedia

It **did not** happen yet Estonia being an exception?





This is not the **only** way!



Neither is this...



But civilian are **always** at stake!

Many faces of how CyberWar is perceived...



From McAfee's "Virtual Criminology Report 2009" Image caption: "countries developing advanced offensive cyber capabilities"

We'll focus on current players:

And no, here size does NOT matter...

USA

- Thoroughly documented activity around cyberwar preparedness as well as military/government agencies with readily available offensive capabilities
- Massive recruiting of professional in attack/defense for different departments:
 - USCC (United States Cyber Command includes AirForce, Marines, Navy and Army service components)
 - NSA
 - Other TLA's...







Russia

- GRU (Main Intelligence Directorate of the Russian Armed Forces)
- SVR (Foreign Intelligence Service)
- **FSB** (Federal Security Services)
- Center for Research of Military Strength of Foreign Countries
- Several "National Youth Associations" (Nashi)





China

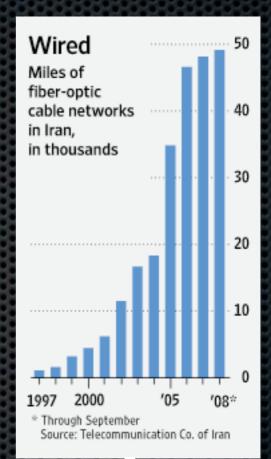
PLA (People's Liberation Army)

- Homework: read the Northrop Grumman report...
- General Staff Department 4th Department -Electronic Countermeasures == Offense
- GSD 3rd Department Signals Intelligence == Defense
- Yes... Titan Rain...

Iran

- Telecommunications Infrastructure co.
 - Government telecom monopoly

Iranian Armed Forces





Israel

Israel Adds Cyber-Attack to IDF

Aviation Week's DTI | David Eshel | February 10, 2010

- This is going to be very boring... Google data only :-(
- IDF (Israel Defense Forces) add cyber-attack capabilities.
- C4I (Command, Control, Communications, Computers and Intelligence) branches in Intelligence and Air-Force commands
- Staffing is mostly homegrown trained in the army and other government agencies.
- Mossad? (check out the jobs section on mossad.gov.il...)

מדינת ישראל or המוסד למודיעין ולתפקידים מיוחדים STATE OF ISRAEL

CyberWar - Attack

Highly selective targeting of **military** (and **critical**) resources In conjunction with a **kinetic** attack





Massive **DDOS** in order to "black-out" a region, **disrupt** services, and/or push political agenda (propaganda)

CyberWar - Defense

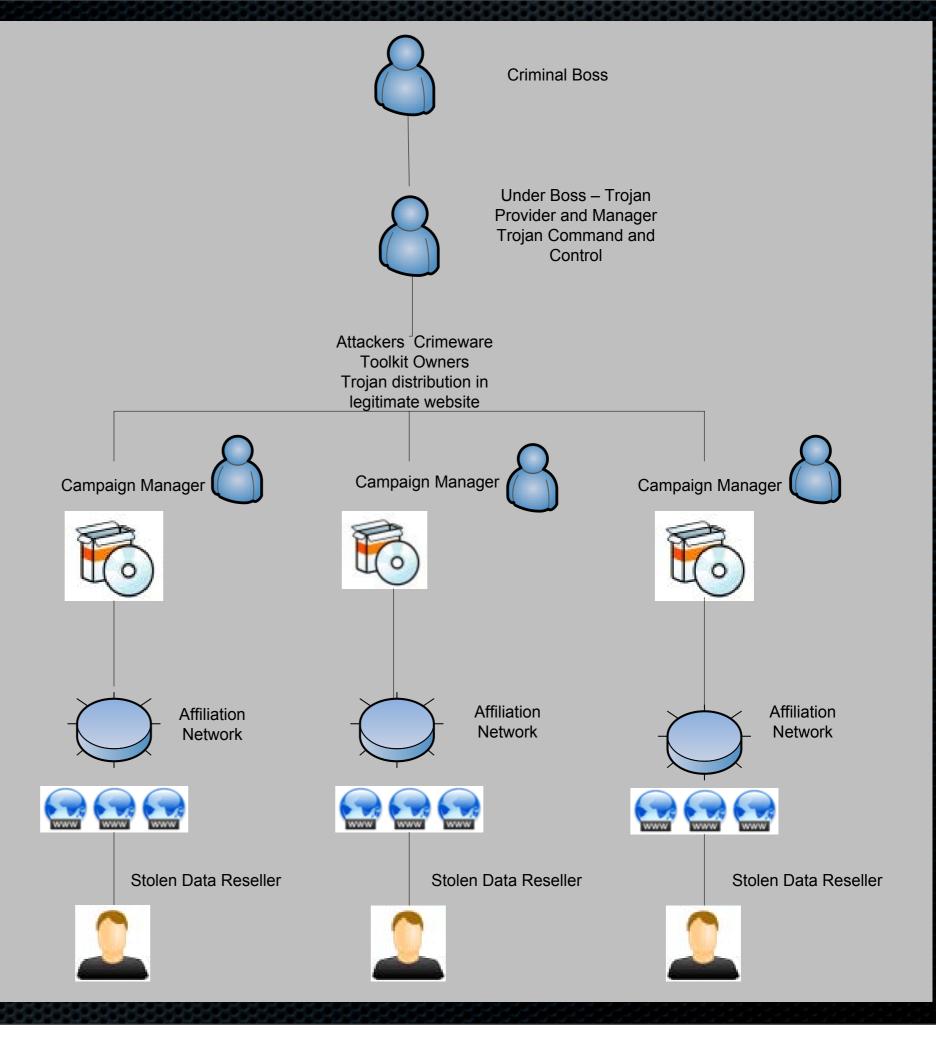
- Never just military
 - Targets will be civilian
- Physical and logical protections = last survival act
- Availability and Integrity of services
 - Can manifest in the cost of making services unavailable for most civilians



CyberCrime



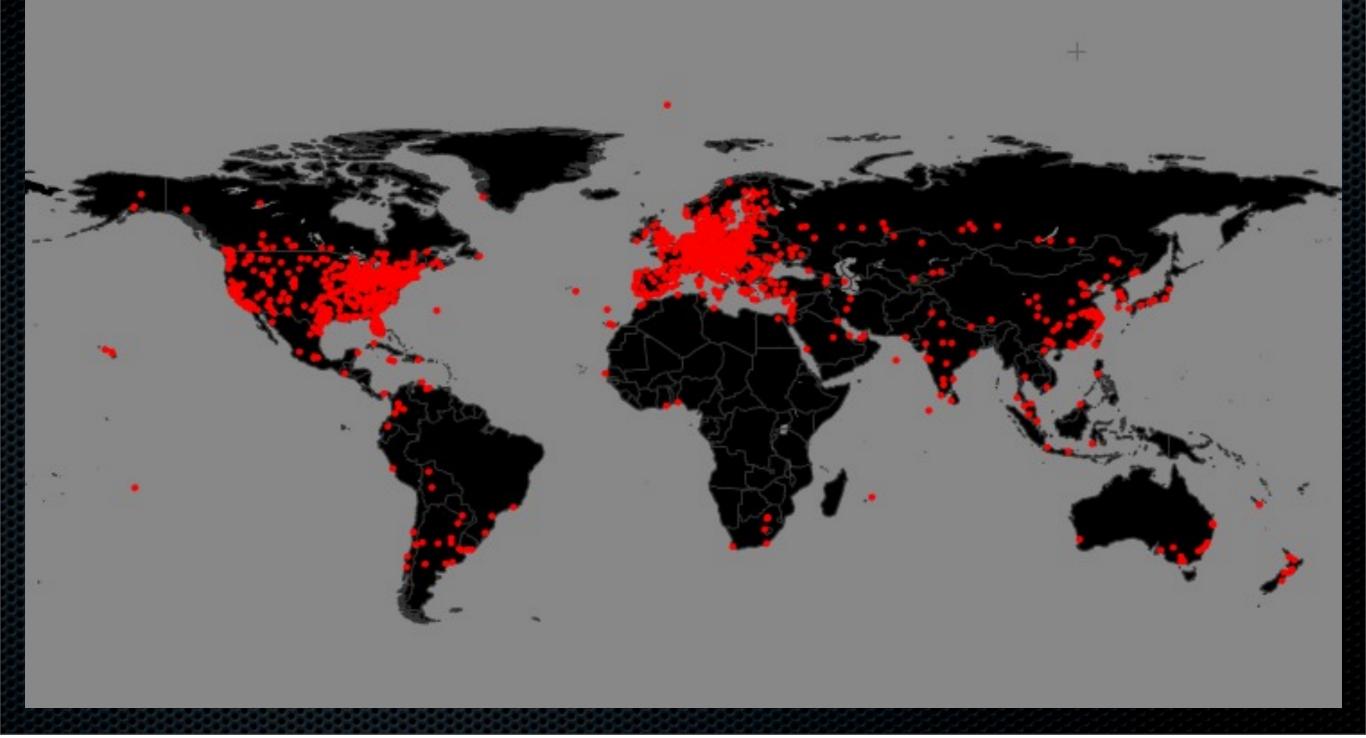
You want money, you gotta play like the big boys do...



CyberCrime - Attack

- Channels: web, mail, open services
- Targeted attacks on premium resources
 - Commissioned, or for extortion purposes
- Carpet bombing for most attacks
 - Segmenting geographical regions and market segments
- Secondary infections through controlled outposts
 - Bots, infected sites

CyberCrime - target location



CyberCrime - Locations



Major Cybercrime group locations

CyberCrime - Ammunition

🕹 ZeuS Builder		×
Builder	uilder Config and loader building Source config file: C:\Documents and Settings\Administrator\Desktop\config.txt Edit config Build config Build loader Output Loading config from file 'C:\Documents and Settings\Administrator\Desktop\config.txt' Loading config from file 'C:\Documents and Settings\Administrator\Desktop\config.txt' Loading succeeded! Building bot file botnet= default timer_logs=60000ms, 60000ms timer_stats=120000ms, 60000ms url_config=http://192.168.216.1/cfg.bin url_compip=http://whatismyip.com/ encryption_key=OK Build succeeded!	

ZeuS :: Statistics

Information:

Profile: icen GMT date: 24.04.2008 GMT time: 22:11:51

→ Sur	Information:
Botnet:	
Onlin	GMT date: 24.04.2008 GMT time: 22:14:03
Remo	Statistics:
Logs:	Summary
-	Botnet:
Searc	→ Online bots
Searc	Remote commands
Uploa	Logs:
System	Search
Profile	Search with template
D	Uploaded files
Profile	System:
Optio	Profiles
Logou	Profile
_	Options
	Logout

Information	
Total logs in database:	203
Time of first install:	16:10:06 26.03.2008
Total bots:	535

Filter			
Countries:	US	CompID's:	
Botnets:		IP's:	
		Type: Any	Apply

Result:								
# CompID	Ver/Botnet	IP	Country	Socks	Proxy	Screenshot	Online time	Speed
1 home_5hm79aabb8_18ff5887	1.0.3.7/0	66.20.176.219	US	-	-	-	28:14:42	0
2 home_00e01ec4	1.0.3.7/0	70.189.43.6	US	-	-	-	28:14:49	0
3 e58aeb3f9a6342e_0005cf1f	1.0.3.7/0	76.6.28.134	US	-	-	-	00:59:12	1.015
4 \$0026776334_03c9bf3f	1.0.3.7/0	71.88.41.203	US	-	-	-	11:00:04	0.172
5 home_cxl7f5jivt_3a19fa48	1.0.3.7/0	65.190.70.193	US	-	-	-	28:15:35	0
6 gabrail_00ebef3b	1.0.3.7/0	75.187.190.246	US	-	-	-	28:15:18	0
7 mvd_00151288	1.0.3.7/0	66.24.74.225	US	-	-	-	03:56:03	0
8 hicks_07ca460dc_0002c847	1.0.3.7/0	74.47.178.92	US	-	-	-	28:14:55	0
9 e519887_04d635e3	1.0.3.7/0	130.76.32.145	US	-	-	-	28:15:15	2.353
10 home_039e4185	1.0.3.7/0	67.49.216.74	US	-	-	-	24:28:25	0
11 your_co2y48tgdl_21540d33	1.0.3.7/0	70.180.173.188	US	-	-	-	03:28:31	0
12 wa5117d01_007de927	1.0.3.7/0	63.164.145.198	US	-	-	-	23:19:11	0
13 hewlett_lydtpep_000d1b7d	1.0.3.7/0	67.175.12.135	US	-	-	-	06:04:26	0
14 e107306_00a67fc7	1.0.3.7/0	130.76.32.182	US	-	-	-	28:14:16	2.484
15 judy_1f2c4509	1.0.3.7/0	74.227.149.82	US	-	-	-	25:44:29	0
16 cadet64204_77f68ea1	1.0.3.7/0	68.58.242.15	US	-	-	-	00:24:09	0
17 central_y7uq1of_03fc9672	1.0.3.7/0	206.71.208.121	US	-	-	-	07:03:20	0
18 bryan_pc_3e13a078	1.0.3.7/0	70.88.25.241	US	-	-	-	01:52:39	0.172
19 winxp_00023fa1	1.0.3.7/0	69.246.194.0	US	-	-	-	28:15:32	0.27
20 wa5117d02_0027e2a1	1.0.3.7/0	63.164.145.198	US	-	-	-	28:15:34	0
21 private_45878f3_000622ad	1.0.3.7/0	76.68.150.19	US	-	-	-	00:46:55	0
22 rekles_xtyg9nbe_17f5b01f	1.0.3.7/0	75.178.3.31	US	-	-	-	28:14:41	0
23 tony_f740f48227_00b21f7c	1.0.3.7/0	24.247.72.95	US	-	-	-	03:55:35	60.09
24 owner_f835edf4c_0003ffbe	1.0.3.7/0	65.12.138.38	US	-	-	-	03:14:38	0
25 take_2067du80ff_1c1dbf98	1.0.3.7/0	75.100.193.124	US	-	-	-	28:14:39	0
26 50026403620_01f62ef5	1.0.3.7/0	74.197.114.250	US	-	-	-	00:02:54	0.219
27 lovefamily_000d186a	1.0.3.7/0	71.180.88.97	US	-	-	-	02:30:50	0
28 hub_lab_11_0000dadf	1.0.3.7/0	68.190.65.92	US	-	-	-	00:46:12	0
29 fariba_05744139	1.0.3.7/0	75.56.211.191	US	-	-	-	28:15:26	0
30 dorm_0002de02	1.0.3.7/0	74.170.82.94	US	-	-	-	08:40:34	0
31 d5wccbb1_0005840c	1.0.3.7/0	72.149.8.2	US	-	-	-	05:54:22	0

CyberCrime - Defense

Anti [Virus | Malware | Spyware | Rootkit | Trojan]

Seriously?

File 90a4ab818f492d67a8c1d5efae8e2147f received on 2010.03.16 16:58:07 (UTC) Current status: finished Result: 0/42 (0.00%)

- Firewalls / IDS / IPS
 - Seriously?
 - Brought to you by the numbers 80, 443, 53...
 - SSL...

How do these connect?

<u>Claim</u>: **CyberCrime** is being *USed* to conduct **CyberWar**

Proof: Let's start with some history...

History - Revisited...

Estonia

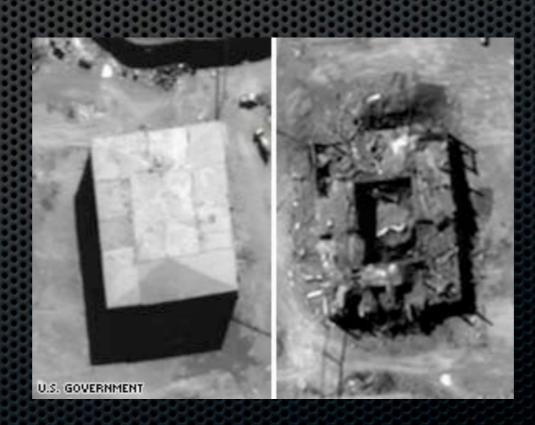
You read all about it.

Bottom line: **civilian** infrastructure was targeted Attacks originated mostly from **civilian** networks

History - Revisited...

Israel

Cast led 2nd Lebanon war Palestinian TV hacked - propaganda



Cast-Led, 2nd Lebanon war (Israel and mid-east)

All attacks on $\frac{Israeli}{Arabic}$ targets are Attributed to Hacktivists



Mid-east crime-war links

ARHack



Hacker forum by day

Cybercrime operations by night

	Www.Arhack.Net	
GR Brab Hack Organization		
نحث ♥ خيارات سريعة ♥ تسجيل الخروج		. Arhack.NeT
أهلا رسهلا يك palhacker0. أخر زيارة لك: 2010-06-01 الساعة AM 10:06 الساعة 2010. الرسائل الخاصة: غير مقروء 0, من مجموع 0 رسانة.	GR Brab Hacker Organization	
صفحة 1 من 2 1 <	مات قائمة الأعضاء الثقويم جديد المواضيع البحث ♥ خيارات سريعة ♥ تسجيل الخروج	لوحة التحكم تعليد
وات الموضوع ▼ إبحث ففي الموضوع ▼ تقييم الموضوع ▼ طريقة عرض الموضوع ▼		
رقم المشاركة : 1		
فم	لهكر العربي :: >: الاقسام العامة :: > . : السوق السوداء : . آخر زيارة تك: 01-60-2010 الساعة 10:06 AM الرسائل الفاسة: غير مقررء 0, من مجموع 0 رسائة.	:. :: منظمة ال :: ArHaCk.NeT:: أي منظمة ال ٢ اشتريه بغيزا مسروفة وخ
والله يا اخوان	صفحة 1 من 2 1 2 < أدوات الموضوع ▼ إبحث فې الموضوع ▼ تقييم الموضوع ▼ طريقة عرض الموضوع ▼	>> POST REPLY
الحملة المسعورة	1: رقم المشاركة ، 1	PM 11:11,11-26-2009
	📑 اشتریه بقیزا مىرویقة وخد تصف سعره کاالٹن	معلومات العضو 🗹
ببعد عناي سوى 500 متر على الاكثر	يا اخواني في موقع استضافة اشتري منو مساحه الي بدك اياها وخد نصف سعرها كاش احولك اياه ويستر نيون .	ابوشهاب :: عفر جدد ::
و صورته من کمرتې	كل ما كانت المساحة اكبر تحصل على مبلغ اكبر	
	يعني لو اشتريت 300 دولار بفيزا مسروقة بحولك 150 دولار على الويستر نيون والله على ما اقول شهيد .	
	واشتري كما تريد يعني لو اشتريت 100 مره انا ما بقول لا . واي عملية اتم بحولك الفلوس	إحصالية المحتو
	علما انو الشراء عن طريق بلايموس (plimus.com) .	الانتساب : Nov 2009
Political post	والي بدو روابط الشراء وحاد في الشغل يضع ايميه وسوف يتم الاضافة ان شاء الله حالا	رقم العضوية : 25036 المشاركات : 10 بمعدل : 2.20 يومياً عدد النقاط : 10

Buying/Selling cards for 1/2 their balance



History - Revisited...

Georgia

More interesting...

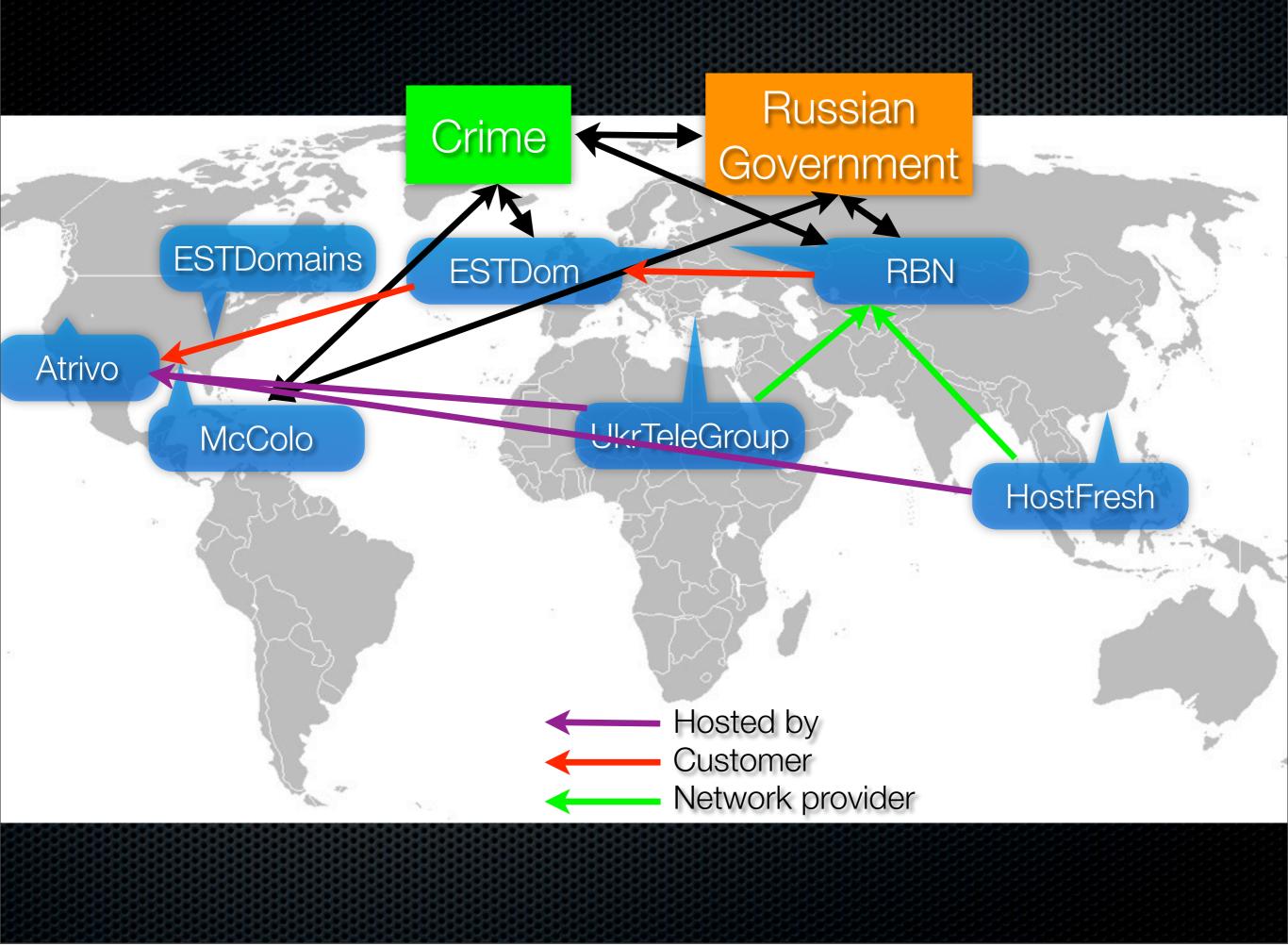
Highly synchronized **Kinetic** and **Cyber** attacks Targets still mostly **civilian** Launched from **civilian** networks

Wednesday, April 14, 2010

Russian Crime/State Dillema



Wednesday, April 14, 2010



Remember Georgia?

- Started by picking on the president...
 - flood http www.president.gov.ge
 flood tcp www.president.gov.ge
 flood icmp www.president.gov.ge
- Then the C&C used to control the botnet was shut down as:
 - Troops cross the border towards Georgia
 - A few days of silence...

Georgia - cont.

Six (6) new C&C servers came up and drove attacks at additional Georgian sites

www.president.gov.ge www.parliament.ge apsny.ge news.ge tbilisiweb.info newsgeorgia.ru os-inform.com www.kasparov.ru hacking.ge mk.ru newstula.info

 BUT - the same C&C's were also used for attacks on commercial sites in order to extort them (botnet-for-

hire)

Additional sites attacked:
Porn sites
Adult escort services
Nazi/Racist sites

Carder forumsGambling sitesWebmoney/Webgold/etc...

History - Revisited...

Iran

2009 **Twitter** DNS hack attributed to Iranian activity. **Political** connections are too obvious to ignore (elections)

Timing was right on:

UN Council **Decisions** **Protests** by leadership opposition in Tehran

E No matche here TC hereboard E C Q Into (Renter com/		
THIS SITE HAS BEEN H	IIAN CYBER ARMY ☆ IACKED BY IRANIAN CYBER ARMY YBER.ARMY@GNAIL.COM	
	Vitter - Google Search * * <th>urce=hp&q=twitter&aq=f&oq=&aqi</th>	urce=hp&q=twitter&aq=f&oq=&aqi
	Google twitter	Search Advanced Search
	Web Show options This Web Site Has Been Hacked By Iranian Cyber Army - [Tradition of the second stress of	

Iran-Twitter connecting dots

- Twitter taken down December 18th 2009
- Attack attributed eventually to cyber-crime/vigilante group named "Iranian Cyber Army"
- Intil December 2009 there was no group known as "Iranian Cyber Army"...
- BUT "Ashiyane" (Shiite group) is from the same place as the "Iranian Cyber Army"





Iran-Twitter - Ashiyane

- Ashiyane was using the same pro-Hezbolla messages that were used on the Twitter attack with their own attacks for some time...
- AND the "Iranian Cyber Army" seems to be a pretty active group on the Ashiyane forums <u>www.ashiyane.com/forum</u>

Let's take a look at how Ashiyane operates...

On [Crime|War] training

Ashiyane forums WarGames

Wargame

Sha2ow Godfather

target : http://www.chestergas.com/news.asp?id=13



Wednesday, April 14, 2010

Wargame targets includes:



Chester	County
natural g	s authority
The "Nature	

WELCOME TO CHESTER COUNTY NATURAL GAS AUTHORITY

Who We Are

- Why Natural Gas
- **Customer Service**
- Appliances
- **Rate Notifications**
- Industrial Customers

Partners

Community

Contacts

LEARN ABOUT THE NEWEST GAS APPLIANCES FOR YOUR HOME

LET'S GO





NEWS BILL PAY LINKS HOME

CHESTER COUNTY NATURAL GAS AUTHORITY

F.A.Q.

The Chester County Natural Gas Authority was created on April 23, 1954 under Act 806 of the Acts and Joint Resolution of the State of South Carolina of 1954 and commenced the distribution of natural gas in 1957. The service area for the Authority is defined as being Chester County, Lockhart School District in Union County, and the Mitford and Blackstock area in Fairfield County.

A five member Board of Directors governs the Authority. Members of the Board are appointed by the Governor of South Carolina, two upon recommendation of the legislative delegation in the county, two upon recommendation from the City of Chester and one upon recommendation from the Town of Great Falls. Each director serves for a term of six years and can be reappointed. The Board of Directors is not active in the day-to-day management of the Gas Authority.

WHY NATURAL GAS?



GETTING CONNECTED



Back to [Crime|War] Links:

What else happened on the 18th?

Iranians seize Iraqi oil well on border, Iraq says Baghdad in talks to decide next move with Tehran over oil well No. 4

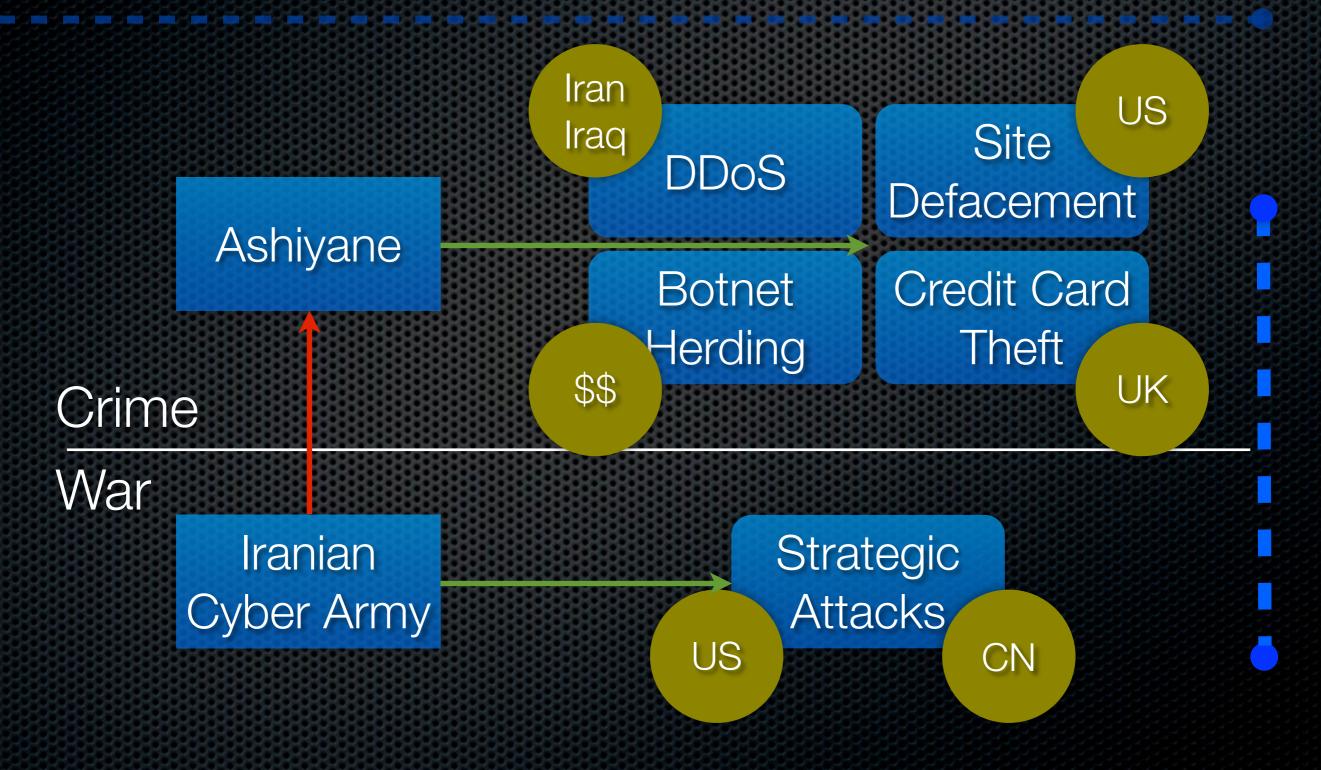
BAGHDAD, Dec. 18, 2009 Iraq: Iranian Troops Seized Oil Well Iraq's Foreign Minister Says Well Along Disputed Southern Border Taken by Soldiers; Spokesman Says Iran Violated Sovereignty

BUSINESS | DECEMBER 19, 2009

Iranian Troops Occupy Oil Field in Iraq, Stoking Tension

More recently - Baidu taken down with the same MO (credentials)

Mapping Iran's [Crime|War]



History - Revisited...

China

- Great Chinese Firewall doing an OK job in keeping information out.
- Proving grounds for many cyber-attackers
- Bulletpfoof hosting (after RBN temporary closure in 2008 China provided an alternative that stayed...)

China ... connecting the dots

January 12th - Google announces it was hacked by China

Not as in the "we lost a few minutes of DNS" hacked...

"In mid-December we detected a highly sophisticated and targeted attack on our corporate infrastructure originating from China that resulted in the theft of intellectual property from Google" (David Drummond, SVP @Google)

China ... connecting the dots.

January 12th - Adobe gets hacked. By China.

"Adobe became aware on January 2, 2010 of a computer security incident involving a **sophisticated coordinated attack** against corporate network systems managed by Adobe and other companies" (Adobe official blog)

Same MO: 0-day in Internet Explorer to get into Google, Adobe and more than 40 additional companies

China ... connecting the dots..

The only problem so far - the attacks all have the sign of a CyberCrime attack. All the evidence points to known crime groups so far.

"It was an attack on the technology infrastructure of major corporations in sectors as diverse as **finance**, **technology**, **media**, **and chemical**" (Google enterprise blog)

China ... connecting the dots...

Criminal groups attack companies in order to get to their data so they can sell it (whether it was commercial or government data!)

US Response: "We look to the Chinese government for an explanation. The ability to operate with confidence in cyberspace is critical in a modern society and economy." (Hillary Clinton, Secretary of State)

China ... connecting the dots....

The China move:

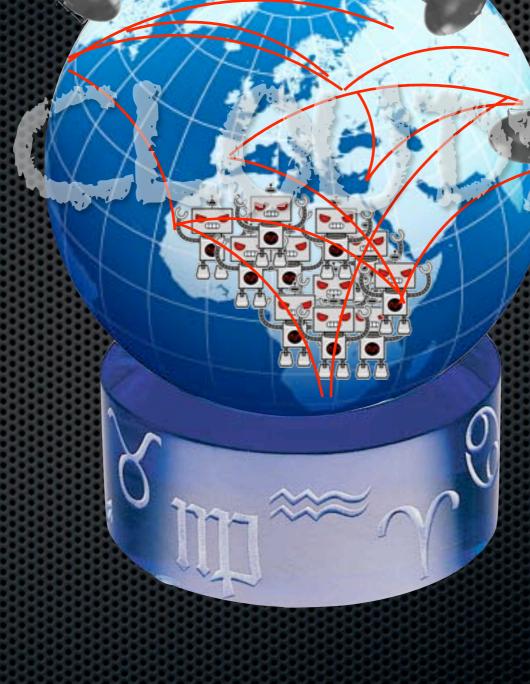
Use of criminal groups to carry out the attacks provides the perfect deniability on espionage connections (just like in the past, and a perfect response to clinton).

Targets are major US companies with strategic poise to enable state interest espionage

Information sharing at its best: **STATE** Crime Win - Win

THE FUTURE (Ilustrated)





Summary

Good

Formal training on cybersecurity by nations

Bad

Commercial development of malware still reigns

Ugly

Good meet Bad: money changes hands, less tracks to cover, criminal ops already creating the weapons...

Summary

THE FUTURE

LACK OF LEGISLATION AND COOPERATION ON MULTI-NATIONAL LEVEL IS CREATING DE-FACTO "SAFE HAVEN" FOR CYBERCRIME. <- FIX THIS!

TREATIES AND ANTI-CRIME ACTIVITIES MAY PROVE TO BE BENEFICIAL. <- NUKES?

Thanks!



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