Internet Security and Fraud

Current Online Trends

by Nick von Dadelszen

security-assessment.com

Security-Assessment.com – Who We Are

- NZ's only pure-play security firm
- Largest team of security professionals in NZ
- Offices in Auckland, Wellington and Sydney
- Specialisation in multiple security fields
  - Security assessment
  - Security management
  - Forensics / incident response
  - Research and development

Continuing Security Trends

- Still seeing opportunity hacks “script-kiddie” style
  - Windows machine fresh installed will be hacked in approximately 20 minutes
- Virus levels continuing to increase
- Time-to-exploit once a vulnerability is known is continuing to go down
- The number of vulnerability advisories is increasing

DIGITAL ATTACKS ARCHIVE

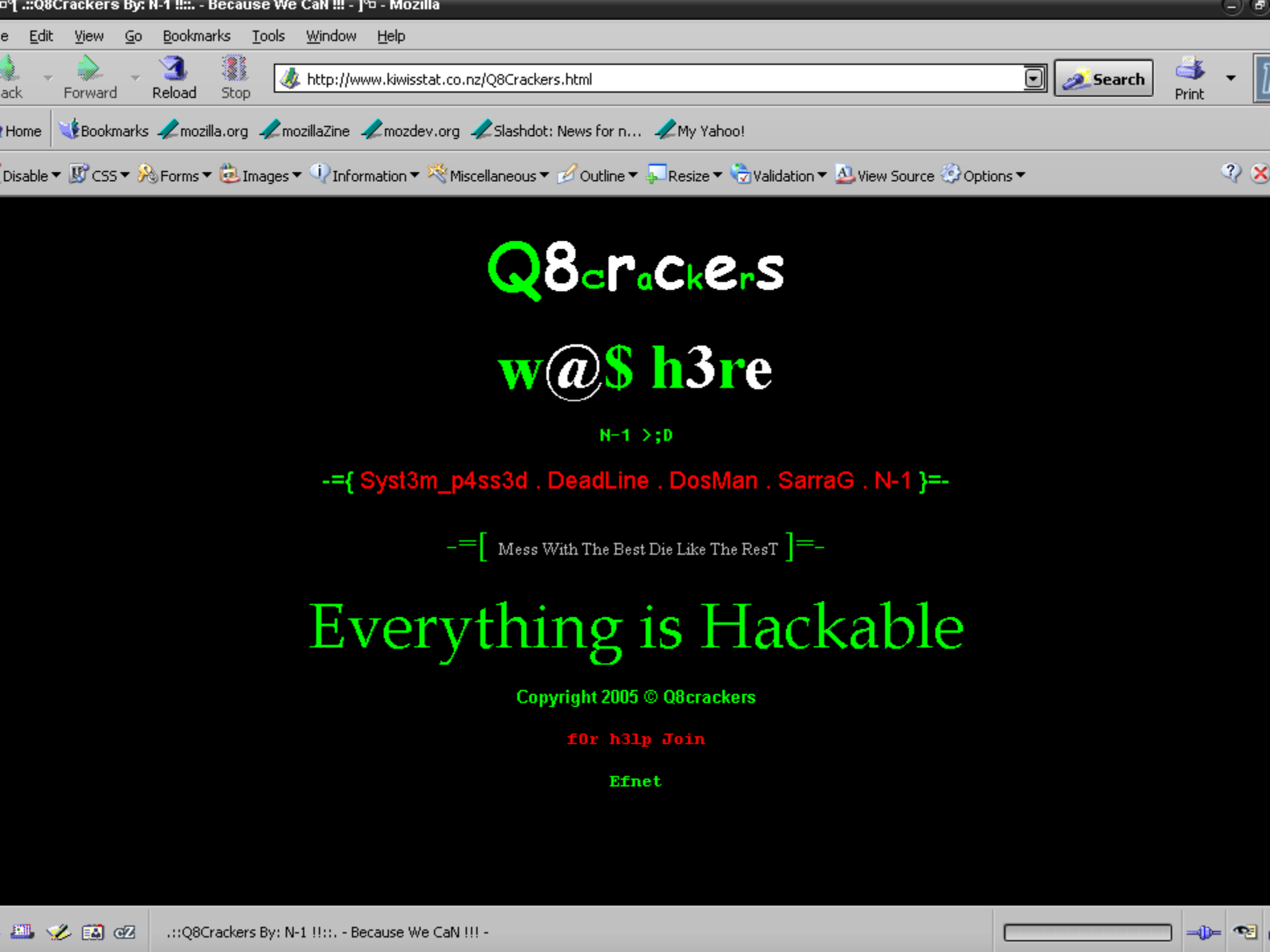
[Disable filters | View Top Attackers] Apply filters

Attacker: -- all -- Domain: .nz

Date: all : -- -- -- System:

Legend:
H - Homepage defacement
M - Mass defacement (click to view all defacements of this IP)
R - Redefacement (click to view all defacements of this site)
★ - Special defacement

Time	Attacker		Domain	OS	View
2005/03/28	illegalteam.com	H	forum.aucklandfiji.org.nz	Linux	view | mirror
2005/03/28	illegalteam.com		architecture.org.nz/bbs	Linux	view | mirror
2005/03/28	Q8crackers		....co.nz/Q8Crackers.html	Win 2000	view | mirror
2005/03/28	illegalteam.com		unicycle.org.nz/bb	Linux	view | mirror
2005/03/28	illegalteam.com		getmoving.org.nz/bboard	Linux	view | mirror
2005/03/27	dodo885		.../bbguestbook/index.php	Linux	view | mirror
2005/03/27	core-project	H	learningmedia.co.nz	MacOSX	view | mirror
2005/03/26	illegalteam.com		reprazent.org.nz/forum	Win 2000	view | mirror
2005/03/26	illegalteam.com		freezaoui.org.nz/forumphp	Linux	view | mirror
2005/03/26	dodo885	M	...ernet.co.nz/hacked.htm	Win 2003	view | mirror
2005/03/26	dodo885	M	...aging.co.nz/hacked.htm	Win 2003	view | mirror
2005/03/26	dodo885	M	liberty.net.nz/hacked.htm	Win 2003	view | mirror
2005/03/26	dodo885	M	nzmapped.co.nz/hacked.htm	Win 2003	view | mirror
2005/03/26	dodo885	M	...epics.co.nz/hacked.htm	Win 2003	view | mirror
2005/03/26	illegalteam.com	M	abba.org.nz/forum	Linux	view | mirror
2005/03/26	illegalteam.com	M	...planning.org.nz/forum1	Linux	view | mirror
2005/03/26	core-project	H M	zydeco.co.nz	Linux	view | mirror
2005/03/26	core-project	H M	xboxhacking.co.nz	Linux	view | mirror
2005/03/23	illegalteam.com	M	ttbrc.co.nz/forum	Linux	view | mirror
2005/03/23	illegalteam.com		monkeyfish.co.nz/forum	Linux	view | mirror
2005/03/23	illegalteam.com	M	referee.co.nz/forums	Linux	view | mirror
2005/03/23	illegalteam.com	M	speedwaybikes.co.nz/forum	Linux	view | mirror
2005/03/23	illegalteam.com		c-search.co.nz/phpbb	Linux	view | mirror
2005/03/23	illegalteam.com		thevatican.co.nz/forums	Linux	view | mirror


[.::Q8Crackers By: N-1 !!::. - Because We CaN !!! -]
Mozilla
Edit View Go Bookmarks Tools Window Help
Forward Reload Stop
http://www.kiwisstat.co.nz/Q8Crackers.html
Search
Print
Home Bookmarks mozilla.org mozillaZine mozdev.org Slashdot: News for n... My Yahoo!
Disable CSS Forms Images Information Miscellaneous Outline Resize Validation View Source Options
Q8crackers
w@$ h3re
N-1 >;D
-={ Syst3m_p4ss3d . DeadLine . DosMan . SarraG . N-1 }=-
-=[Mess With The Best Die Like The ResT]=-
Everything is Hackable
Copyright 2005 © Q8crackers
fOr h3lp Join
Efnet
.::Q8Crackers By: N-1 !!::. - Because We CaN !!! -

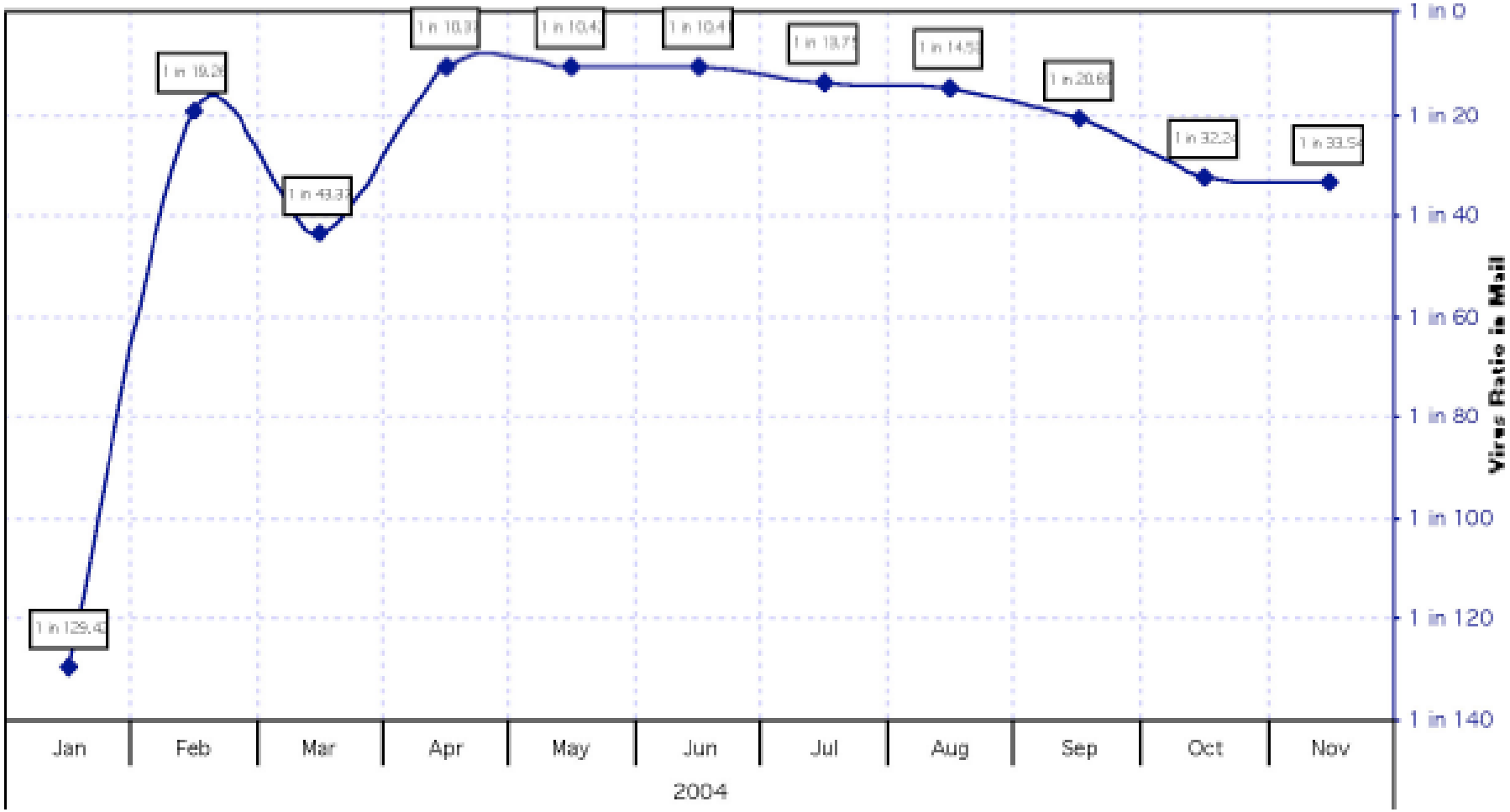
Zone-H.org Statistics

- 119 .nz sites mirrored in March
  - Those are only the ones zone-h.org hears about
- Of those sites:
  - 98 .co.nz, 12 are .org.nz, 7 .net.nz, and 1 is .govt.nz
- Of all hacks on Zone-H.org:
  - 60% Linux, 30% Windows, 10% Other
  - (General web server statistics show 70% Linux, 20% Windows, 10% Other)

Virus Statistics (from MessageLabs)

- Virus levels continuing to increase
- Virus ratio in email
  - 2002 – 0.5%
  - 2003 – 3%
  - 2004 – 6%
- 2004 saw several large viruses including:
  - MyDoom
  - Netsky/Bagle war

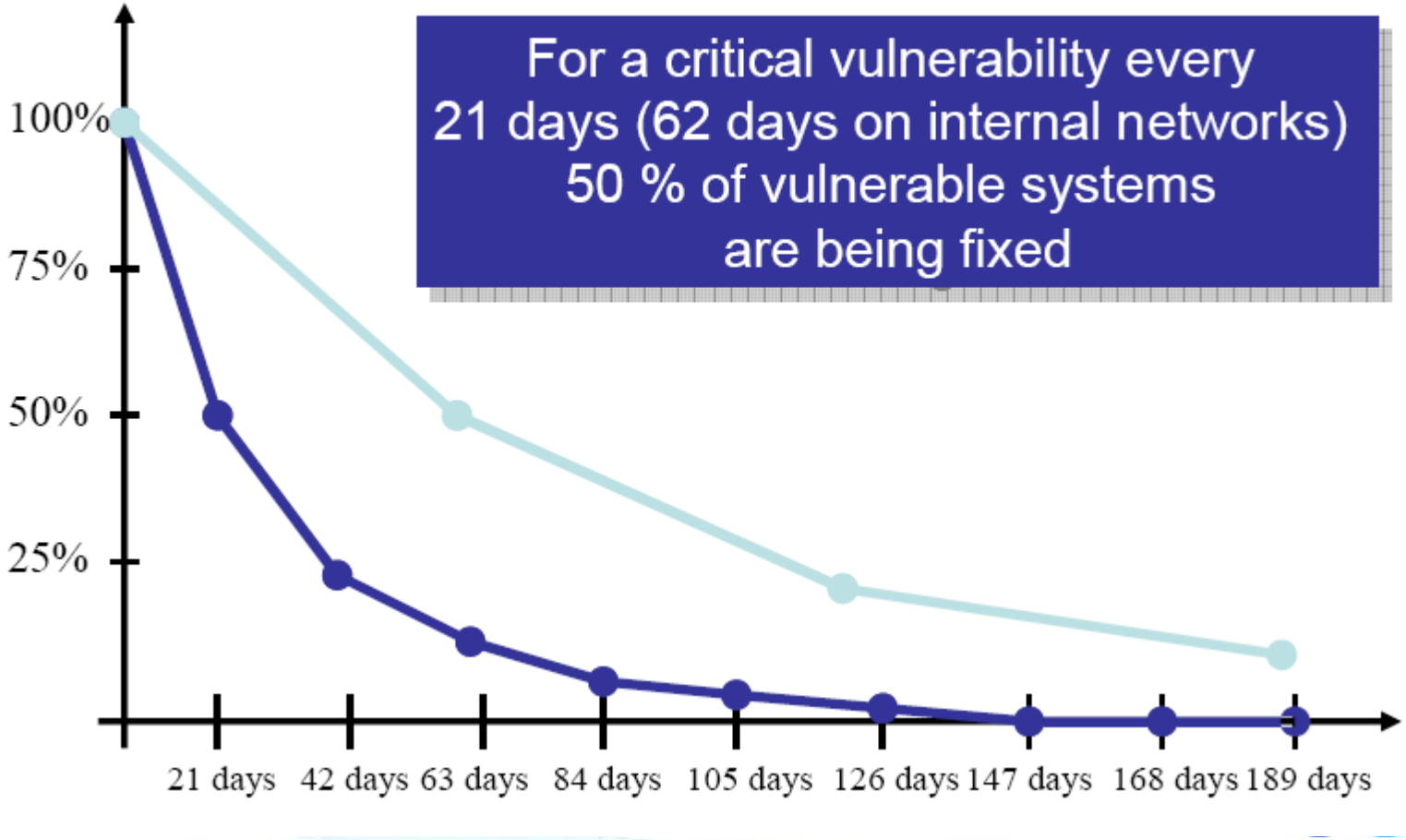
2004 virus Levels



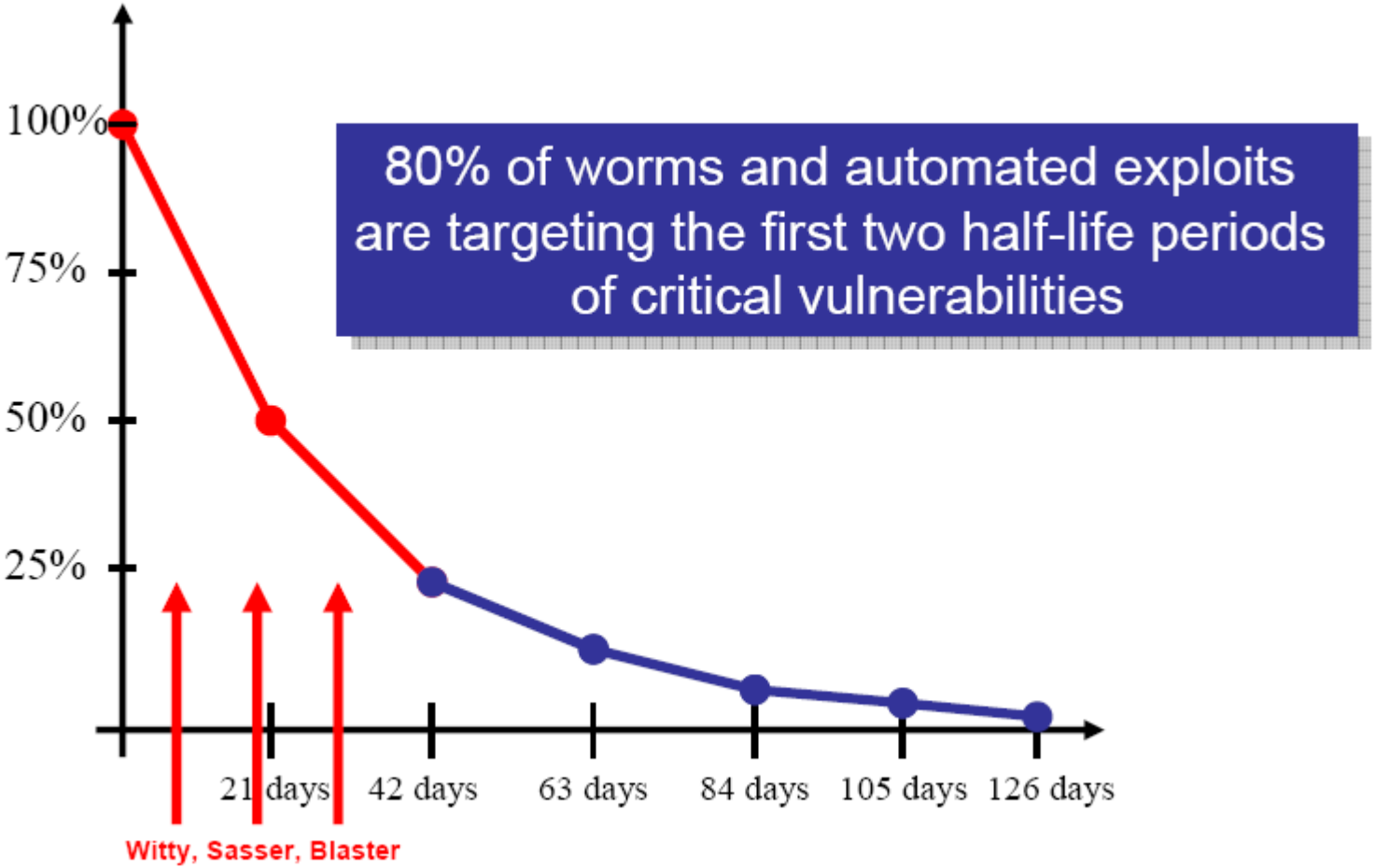
Decreasing Time-to-exploit

- People patching sooner
  - 2003 – every 30 days the number of vulnerable systems reduces by 50%
  - 2004 – every 21 days the number of vulnerable systems reduces by 50%
- But time-to-exploit is decreasing as well
  - 80% of worms and automated exploits are targeting the first two half-life periods of critical vulnerabilities

Vulnerability Half-Life

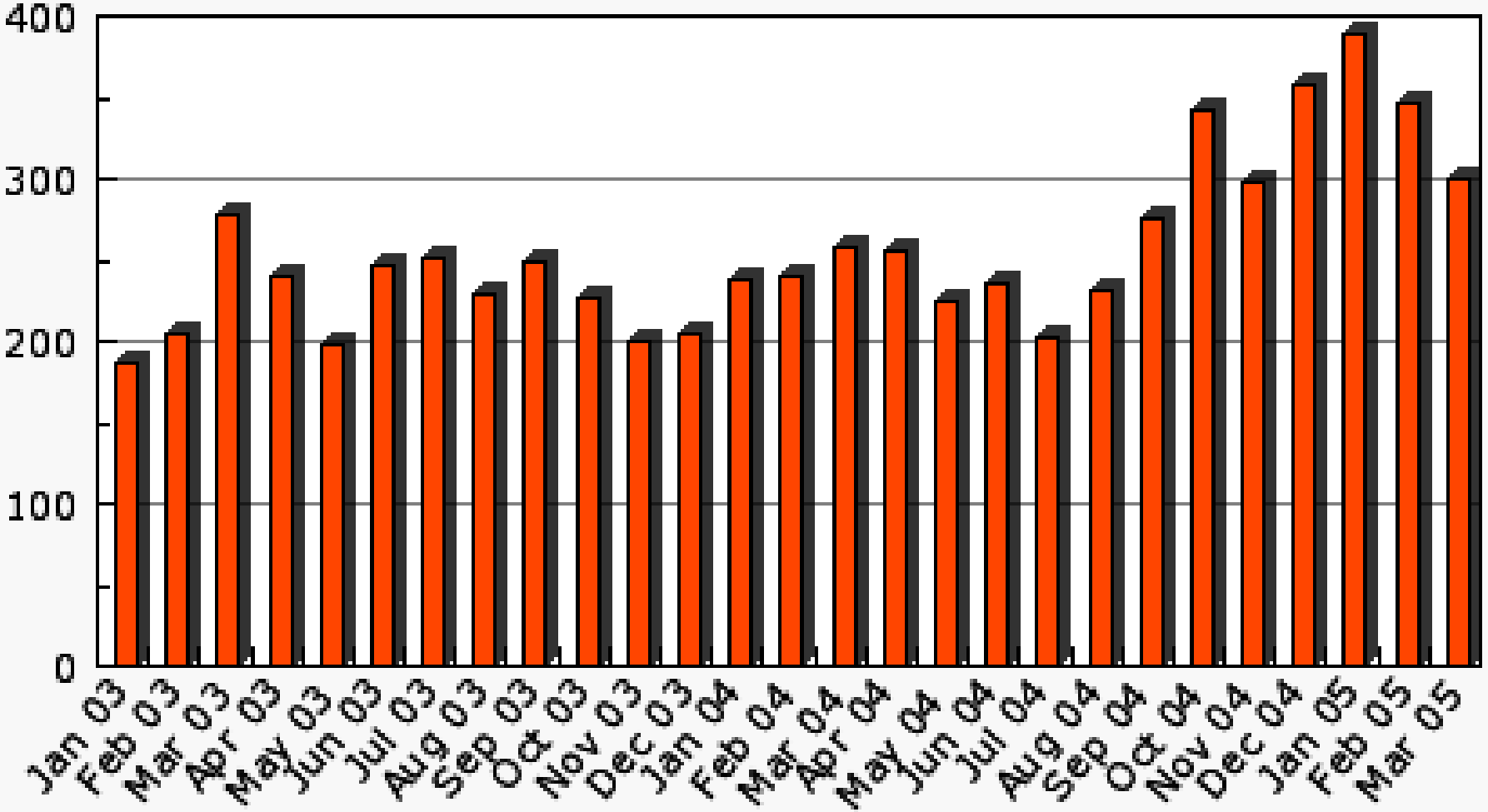


Vulnerability Exploitation



80% of worms and automated exploits are targeting the first two half-life periods of critical vulnerabilities

Secunia Security Advisories
All Advisories (2003 - 2005)

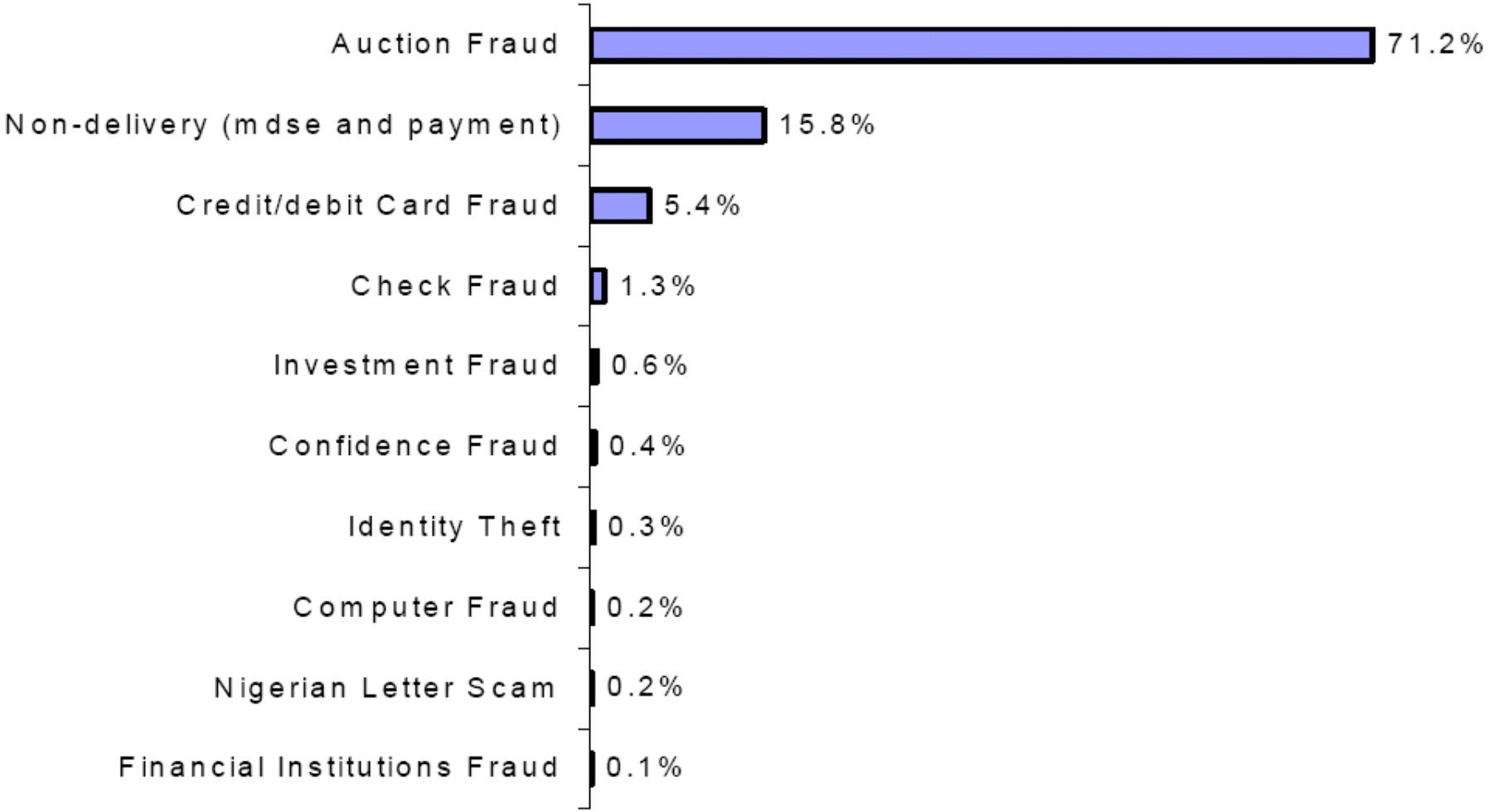


This graph was generated by Secunia.
Based on Secunia Advisories freely available at http://secunia.com/

New Security Trends

- Organised crime on the rise
- Hacking for profit
  - CyberExtortion
- Targeting users as well as sites:
  - Key loggers
  - Trojans
  - Phishing
  - Browser-based attacks / spam / spyware

Chart 3
Top 10 IC3 Complaint Categories



Source: IC3 2004 Internet Fraud - Crime Report

Identity Theft

- Stealing of a user's identity
- Fastest growing area of online fraud
- Several different mechanisms
  - Credit Card number capturing
  - Phishing / Social Engineering
  - Malicious code
    - Trojans
    - Man-in-the-middle attacks

Identity Theft Online vs Offline

Offline	Percentage
Lost or stolen wallet, check book or credit card	28.8%
Known acquaintances with access to information	11.4%
Accessed as part of offline transactions	8.69%
Corrupt employee with access to information	8.7%
Stolen paper mail/fraudulent change of address	8.0%
Taken from garbage	2.0%
Total	**68.2%**
Online	
Computer spyware	5.2%
Accessed as part of an online transaction	2.51%
Computer virus/hacker	2.2%
Phishing	1.7%
Total	**11.6%**

Credit Card Capturing

- Many sites still do not protect Credit Card numbers as well as they should
- Black market for stolen Credit Card numbers
- Gathered by breaking into sites or capturing traffic

Phishing

- Attacker send fake email to victim pretending to be trusted institution
- Victim responds to email (either directly or by clicking on a link)
- Victim provides attacker with information required to access services

Phishing Increases

Phishing Trends

- Unique Phishing Attempts December 2003
  - 113
- Unique Phishing Attempts July 2004
  - 1974
- Unique Phishing Attempts February 2005
  - 13,141
- Now using different techniques, IM, pharming

Organisations Targeted For Phishing

- Financial Institutions
- Auction Sites
- ISPs
- Online Retailers

Malicious Code

- Keyloggers
- Trojans
- Fake sites
- Man-in-the-middle attacks (MarketScore)

Internal Fraud

- Still major risk
- Statistics show majority of losses are the result of internal attacks
- Have seen recent examples of this in New Zealand
  - MSD
  - MinHealth

How To Stop It

- Three types of controls
  - Preventative
  - Detective
  - Deterrent
- Effective strategy requires use of all three
  - Preventative – technical controls, 2-factor, limiting services, education
  - Detective – increased monitoring and reporting
  - Deterrent – New anti-hacking laws

What is Two-Factor Authentication

- Many different types of two-factor
  - One-time passwords
    - Password-generating token (SecureID, Vasco)
    - SMS tokens
    - Scratch pads
  - Client-side Certificates
    - Smart cards
    - USB keys
  - Biometrics

The Benefits of Two-Factor

- Requires more than just a username/password combination
- Protects against the majority of the attacks currently being performed today
- Provides an extra level of comfort for security-conscious users

The Trouble With Two-Factor

- Designed for small user base
- Has a usability cost
- No clear market leader
- Potentially large implementation costs
- Will not stop all attacks
  - Man-in-the-middle
  - Intelligent Trojans

The Weakness Of SSL

- Relies on trust
- Tells you that you have a secure session with A website, not THE website
- Certificates can be faked
- Root certificates can be installed – MarketScore
- Allows for Man-in-the-middle and IDN attacks

MITM vs Two-Factor

Customer	Man-in-the-middle		Website
-> Here is my username and password			
		-> Here is my username and password	
		<- What is your token password?	
<- What is your token password?			
-> Here is my token password			
		-> Here is my token password	
		<- Authenticated	
<- Authenticated			
-> Transfer $10 to Bill			
		-> Transfer $10 to Fred	
		<- Please re-authenticate	
<- Please re-authenticate			
-> Here is my token password			
		-> Here is my token password	
		<- Transaction accepted	
<- Transaction accepted			

Will Two-Factor Help?

- Does increase security
- Makes attacks harder
- Will require attacks to be more focused

- Must be a business decision
  - Amount of security required
  - Cost vs benefit

Defence Against Client Attacks

- Authentication is the key
  - Client authentication
  - Server authentication
- Users must protect themselves
  - Don’t use public terminals
  - Anti-virus
  - Firewall
  - Automatic updates
  - Anti-Spyware

State of Security In New Zealand

- Patch process improving but…
- Majority of incidents investigated in the last year due to un-patched systems/mis-configurations
- Web applications still slow to improve security
- Organisations still leaving security until late in the development cycle

State of Security in New Zealand

- Security awareness increasing
- Lack of incident response planning
  - Leads to increased response time
- Lack of business continuity planning
  - Leads to increased downtime
- Anyone can be a target:
  - Aria Farms

Some Recent NZ Stories

- Online bankers blocked for spyware (12/3/2005)
  - http://www.stuff.co.nz/stuff/0,2106,3215585a10,00.html
- TAB outage costs $320,000 (17/2/2005)
  - http://www.computerworld.co.nz/news.nsf/0/538ACA88CBEB7149CC256FB5002EC454?OpenDocument&pub=Computerworld
- Paradise tracks hackers (3/2/2005)
  - http://www.nzherald.co.nz/index.cfm?ObjectID=10009248
- Hospital computer failure could be hackers (28/10/2004)
  - http://www.nzherald.co.nz/index.cfm?ObjectID=3604834
- Ministry man cracks computer to steal $2m (30/9/2004)
  - http://www.nzherald.co.nz/index.cfm?ObjectID=3596124

More Recent NZ Stories

- Hacker breaks into firms' phones (28/9/2004)
  - http://www.nzherald.co.nz/index.cfm?ObjectID=3595229
- Aria Farms hacked - spurious recall notices sent (9/9/2004)
  - http://computerworld.co.nz/news.nsf/UNID/70D94B0F7C9700DBCC256F460014813D?opendocument
- Bookies hit with online extortion (21/7/2004)
  - http://australianit.news.com.au/articles/0,7204,10651299%5E15306%5E%5Enbv%5E,00.html
- Online credit-card fraudster jailed (31/5/2004)
  - http://www.nzherald.co.nz/index.cfm?ObjectID=3569745
- Police called after National party website hacked (15/3/2004)
  - http://www.nzherald.co.nz/index.cfm?ObjectID=3554851

Questions?