conficker.[ccTLD]

Eric Ziegast / ISC

DNS-OARC/ICANN

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The global leader in open source DNS

isc.org
Internet Systems Consortium

We want the Internet to work better.

BIND 10

The next big thing in DNS

ISC Professional Services

support	development
training	consulting
audit	design

Call in the experts!

SNS@ISC

The ultimate insurance policy for your DNS

ISC is Public Benefit

F-root	DHCP
SNS-PB	AFTR
BIND	and more

Do what you can to support us

SIE

Changing how the security communities productively collaborate

RPZ

New method for DNS-based policy enforcement

Taking back the DNS!

RPKI

Securing BGP from route hijacking

You are here

Conficker

- Background
- What we (still) do
- How you can help

This is old news isn't it?

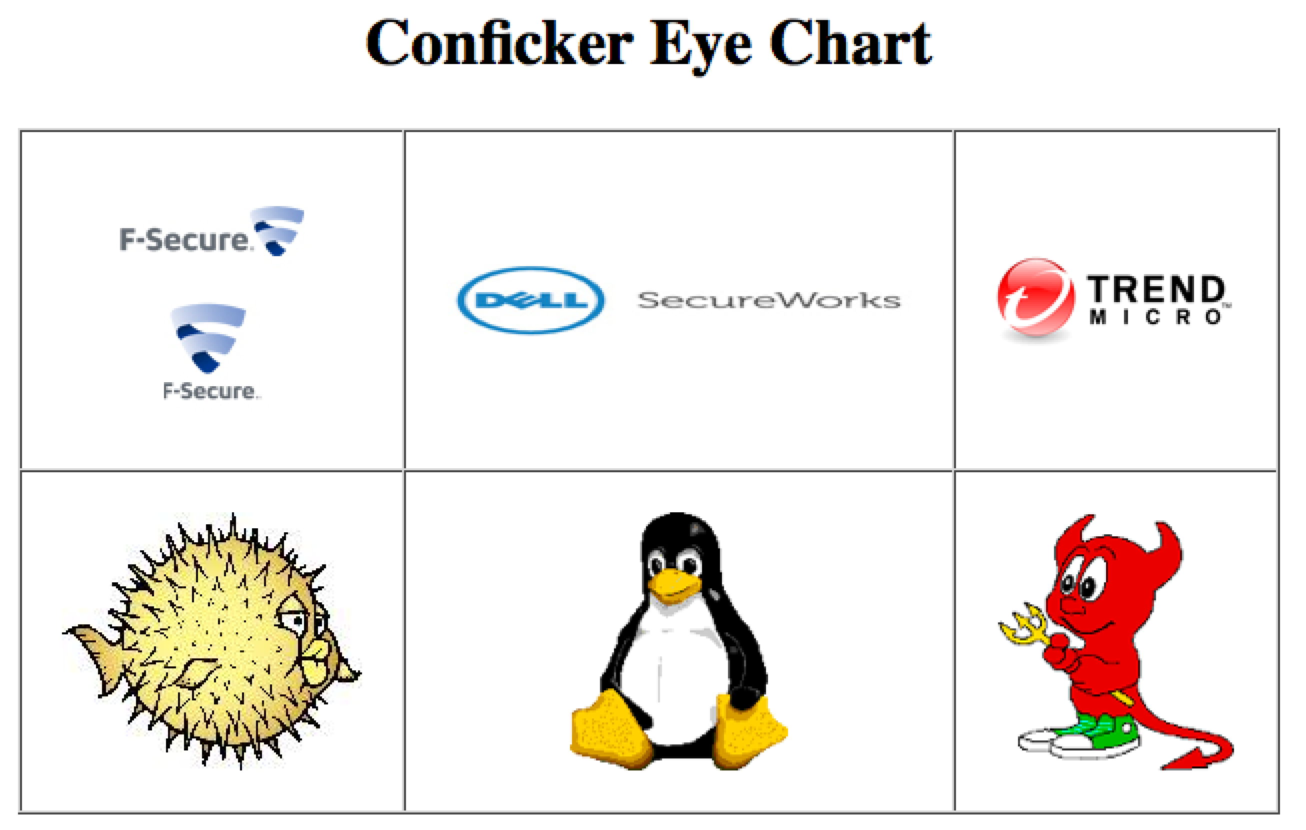
What is it?

- It's a worm/virus/superbug.
- Background reading:
  - http://www.nytimes.com/2009/08/27/technology/27compute.html
  - http://www.confickerworkinggroup.org
  - http://mtc.sri.com/Conficker/

- Security community stepped up
- The developer fought back.
- We're not winning, but we haven't lost.
- Whatever doesn't kill you makes you stronger.
  - Cabal -> CWG -> more

Easy to detect

- Changes host computer so it cannot access domains that help fix a computer.



Conficker Eye Chart

DNS Containment (A/B)

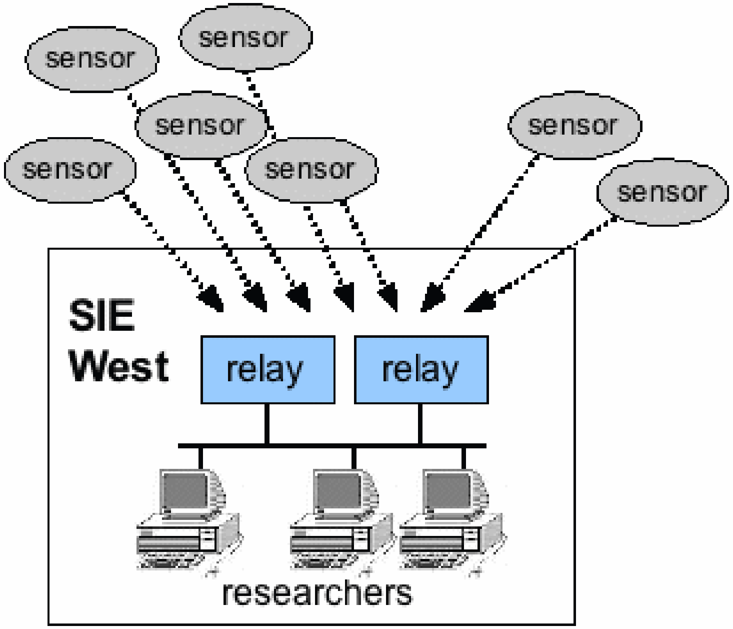
- Started with a single-domain DNS callback mechanism
  - Stomped a few domains
- Modified to domain auto-generation
  - 500 domains / day
  - Predictable date-based pseudo-random domain generation for callbacks
  - COM,ORG,NET,INFO,BIZ,etc
- Developed auto-registration process
  - Contained (?)

Sinkhole

- Register 3 nameservers for every domain
  - Fate sharing
- Nameservers point web callback hits to a web server (specially designed)
- Clients get nothing – contained (?)

Sinkhole

- Web hits used for mitigation – clients exposed themselves
- Can generate reporting and feedback for remediation

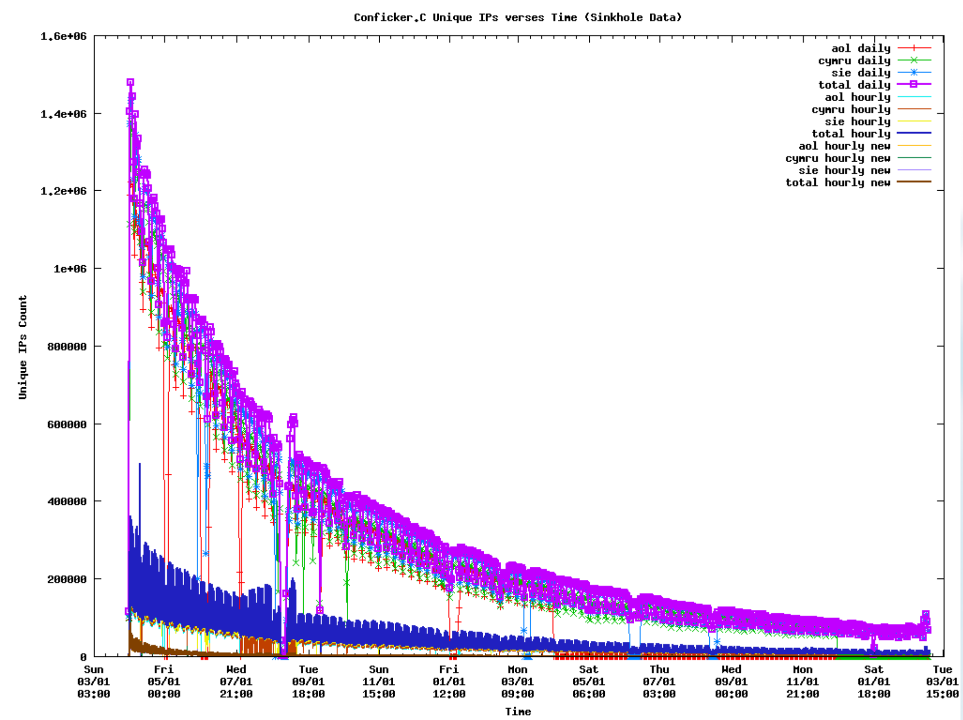


Containment (C)

Not!

- Modified domain auto-generation
  - 50000 domains / day
  - Included ccTLDs
  - Exposed weakness in registries
- We tried to contain
  - Norm at ICANN 35 (Sydney, June 2009)
  - Some success
  - Without 100% success -> fail
- Other methods
  - P2P

In the meantime…



http://spartanlaser.gtisc.gatech.edu/reports/

Winning!

- Wel, no
  - ccTLD participation
  - What did the registries learn?
  - Mostly unfunded mandate (*)
    - Security products (free or unpaid)

- Old focus: Containment + SSR efforts
- New focus: Keep chasing the long tail (~5)

How to help

- You are a ccTLD.
- Domain AXFR/IXFR of fake root from CWG
- Script to extract and manage domains
  - 3-day focus: yesterday/today/tomorrow
  - `extract-domains $TLD`
  - You provide two programs:
    - `add-domain $domain`
      - We check if already registered
      - If not, register (reserve, just like IANA does)
    - `remove-domain $domain`
      - if registered to CWG nameservers

Sinkhole++

- Want to run a sinkhole?
- Httpk
- Keep data for yourself – contribute to CWG
- Risk-spreading

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Thank you (specific)

- Specifically:
  - ICANN
  - Microsoft
  - GTISC
  - [redacted]
- Generally:
  - Sinkhole operators
  - DNS Hosters
  - Public benefit mitigators
  - TLD operators who participate