

# Outbound Security of Your Web and Cloud Services



Where is your **last line of defence** for information coming out from your web servers / cloud?



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- **My night jobs**

- Chapter Lead, OWASP Singapore
- President, Cloud Security Alliance Singapore Chapter
- Main Organizer, Singapore Security Meetup Group
- Cloud Security WG Chair, Security and Privacy Standards Committee, IT Standards Committee, Singapore
- Member, International Standardisation Council, CSA
- CIS Community Contributor
- Champion, Singapore Cyber Defender Programme, Ministry of Home Affairs
- Feeding my 6-mth old baby girl at midnight



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- My day jobs
  - CTO, Resolvo Systems
  - MD, Infotect Security  
[www.infotectsecurity.com](http://www.infotectsecurity.com)
  - CISSP, CISM, CISA, SABSA Chartered Architect and etc....



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## Is the “outbound information” from your web / cloud portals really safe?

Last line of defence missing!  
Weakest link today!

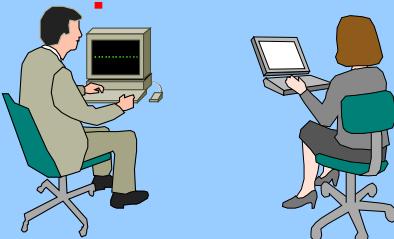
Internet

Customer info is leaked from web portal!

Defaced web pages are shown to entire Internet!

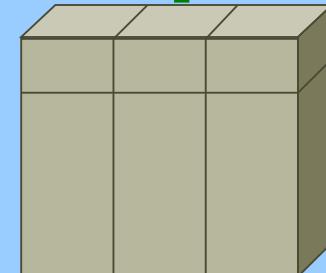
Infected web pages are infecting your visitors!

Trusted / Internal



No Protection!

DMZ / Data Center





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# Do You Know These?

- 1 You ***cannot hide*** when your website leaks information or is defaced, but you can hide when your PC leaks information or is infected.
- 2 It is a ***public relations disaster*** when your website infects your visitors, while the public won't know even if all your PCs are infected.
- 3 IT staff are more likely to be ***fired for embarrassing business management*** because of defaced/infected/leaking websites, instead of infected or leaking endpoints.
- 4 ***Data privacy regulations*** also forbid you to leak your customer information from your website. You can be fined millions for leaking information from your website.
- 5 ***Data leakage from cloud***, not data leakage into cloud, is one of the ***Top 3 obstacles*** blocking widespread cloud adoption.



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Increased privacy legislations  
will drive the need to monitor  
your websites for leakages

Websites **MUST** comply with information leakage protection and data privacy requirements in the following regulations:

1 EU Data Protection Directive – Security Safeguards Principle 11

2 Sarbanes-Oxley Act (2002), HIPAA, GLBA - U.S.

3 Data Protection Act – UK

4 Personal Information Protection Act – Japan, Korea

5 Personal Data Protection Act – Malaysia, China, Taiwan, Singapore

6 Information Technology Act – India

7 Privacy Act – Australia, New Zealand

8 Personal Data Ordinance – Hong Kong



[Home](#) >

## SINGAPORE NEWS

A- A+

### Parliament passes Data Protection Bill

By Dylan Loh | Posted: 15 October 2012 1934 hrs



SINGAPORE: More safeguards for private information are in place, now that Singapore has passed a new consumer protection law.

The Data Protection Bill was passed in Parliament on Monday, after a lengthy debate where 14 Members of Parliament took to the stand.

Organisations have 18 months to adjust to the new Personal Data Protection Act, starting January 2013 before rules come into force.

A Personal Data Protection Commission will be set up to enforce and oversee matters relating to the new Act.

It can impose fines of up to S\$1 million for every data protection offence, and penalties of up to S\$10,000 for every unsolicited marketing call or message to a number in the "Do Not Call" registry.

The Commission will also focus on educating consumers and businesses on the Act when it comes into play, and devise compliance guidelines to help organisations understand the law's requirements.



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enlarge

Photos of

### Related News

- Bill introduced to protect personal data



### Power to give directions

**31.**—(1) The Commission may, if it is satisfied that an organisation is not complying with any provision in Part III to Part VI, give the organisation such directions as the Commission thinks fit in the circumstances to ensure compliance with that provision.

(2) Without prejudice to the generality of subsection (1), the Commission may, if it thinks fit in the circumstances to ensure compliance with this Act, direct the organisation —

- a) to stop collecting, using or disclosing personal data in contravention of this Act;
- b) to destroy personal data collected in contravention of this Act; and
- c) to comply with any other direction of the Commission under section 30(2); and
- (d) to pay a financial penalty of such amount not exceeding \$1 million as the Commission thinks fit.**

**Companies can be fined up to S\$1m.**

(3) Subsection (2)(d) shall not apply in relation to any failure to comply with a provision of this Act the breach of which is an offence under this Act.



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# Do You Know These Too?

- 1 Most, if not all, Web Application Firewalls (WAFs) and IPS cannot detect sensitive information leakage in ***binary documents***, e.g. PDF files.
- 2 Most, if not all, Web Application Firewalls (WAFs) and IPS cannot detect whether your web pages are ***defaced***.
- 3 Most, if not all, Web Application Firewalls (WAFs) and IPS cannot detect whether your web pages are ***infected with malicious content***.
- 4 **No one** has deployed endpoint-focused DLP solutions in front of their web and cloud portals.
- 5 Endpoint-focused DLP solutions can ***severely impact the performance*** of your web and cloud portals.
- 6 Endpoint-focused DLP solutions cannot detect ***defaced or infected web pages or insecure server configuration***.



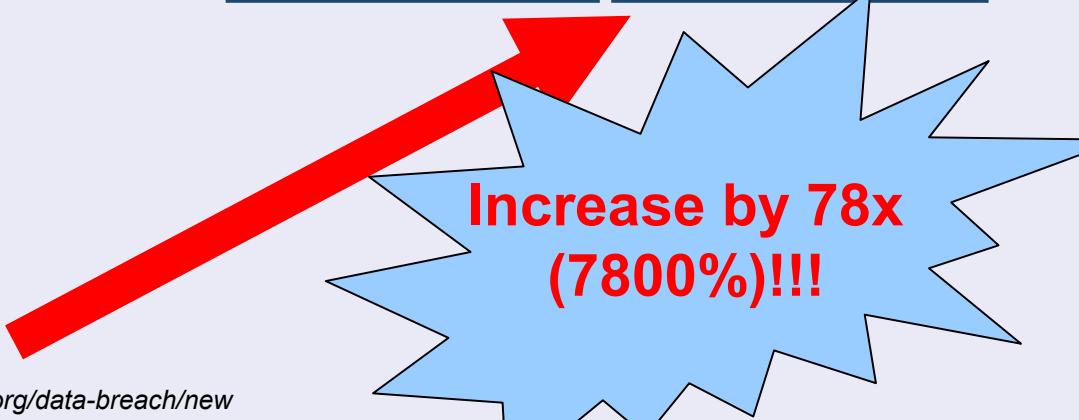
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# Web Leakages Had Been and Still is a Serious Risk!

Industry	# U.S. Records Lost from Web Servers (2005-2008)
Government	2,269,656
Education	588,846
Healthcare	529,034
Financial	114,745
Manufacturing	46,000
Retail	22,735
Real Estate	13,000
Security	5,878
Utilities	3,000
Internet	2,750
Legal	530
Logistics	465
<b>TOTAL</b>	<b>3,596,639</b>

Industry	# U.S. Records Lost from Web Servers (2009-2012)
Retail	168,280,885
Others	92,523,918
Government	13,611,652
Financial	3,406,956
Healthcare	807,076
Education	2,099,219
Non-profit	109,314
<b>TOTAL</b>	<b>280,839,020</b>



# 4 common causes of information leakages from web servers / cloud



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### 1 Compromised web servers

Infected web servers can cause sensitive information to leak out.

leaked

**CONFIDENTIAL**

### 2 Vulnerabilities

Known vulnerabilities can be exploited.

**All OWASP Top 10 risks can result in loss of sensitive information from your web app!**

than necessary being

### 3 Configuration errors

Malfunctioned or misconfigured web servers can display too much information.

### 4 Sensitive Information left on web servers

Backup copies of source codes, SQL files, CSV files containing customer records can be left on web servers.

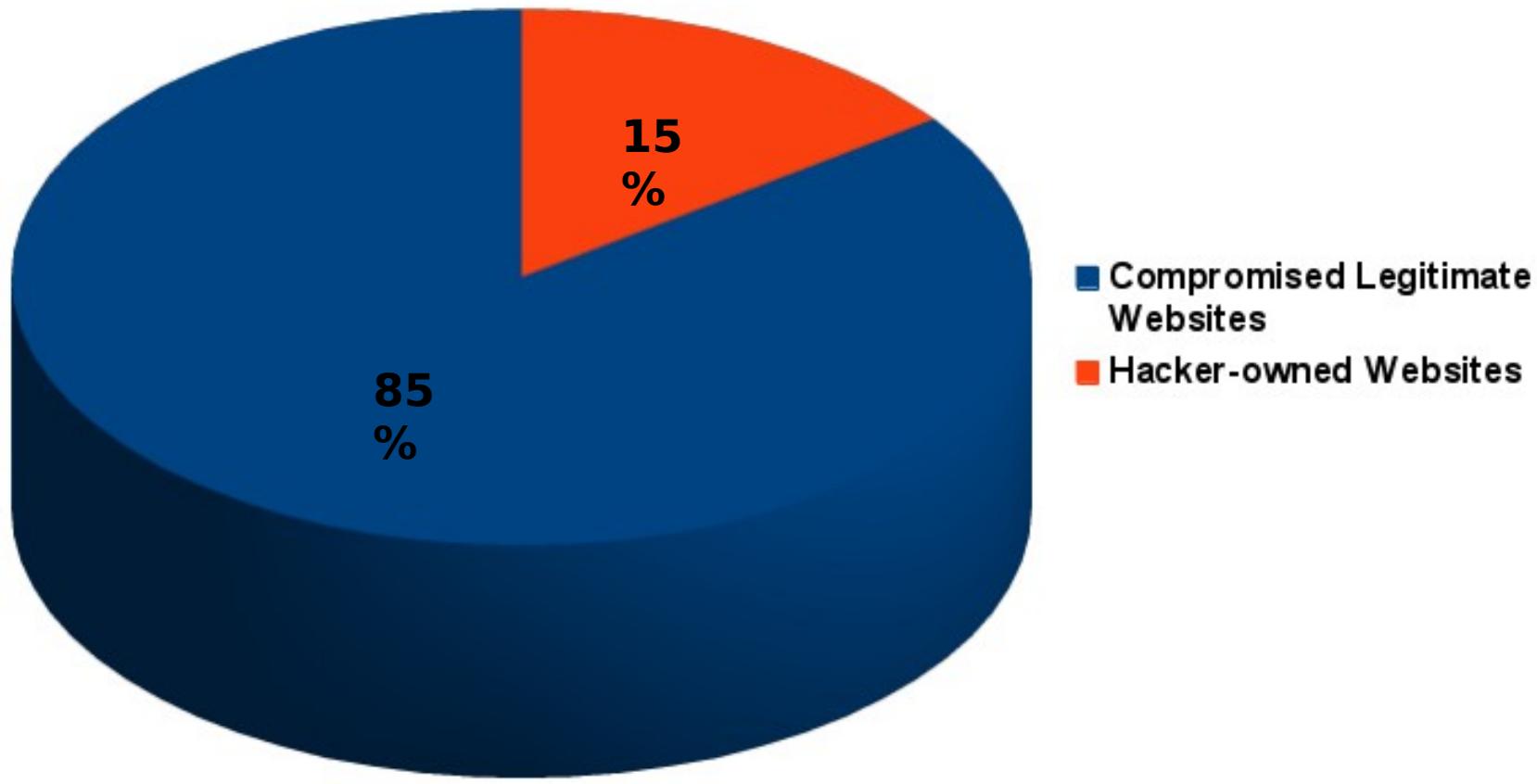


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# Compromised websites is the most popular way to spread malware

## Breakdown of Malicious Websites



Source: Websense 2013 Threat Report



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# Compromised websites is the most popular way to spread malware

## News

### Sex sites out, IT sites in for cybercrooks planting malware

Shift gives attackers better chance at getting into enterprise networks, according to Websense

By [Ellen Messmer](#), Network World

February 12, 2013 08:06 AM ET



Network World - It's long been a tactic by cybercriminals to load up compromised websites with malware-laden links to snare victims, but instead of it being the sex sites as of old, the favored type of website now is for information technology, according to analysis in the Websense threat report out today.

According to analysis based on its ThreatSeeker technology and other means, 85% of malicious Web links last year were found on legitimate hosts that had been compromised, up from 82% the year before. Cybercriminals are finding the value in infiltrating computers of enterprises by subverting anything remotely related to information technology, from vendor websites to content like blogs and news, says Chris Astacio, research manager at Websense.

**[ RELATED:** [.xxx launches porn search engine](#)

**MORE:** [How joining Google Gmail with encryption system helps high-tech firm to meet government security rules](#) ]



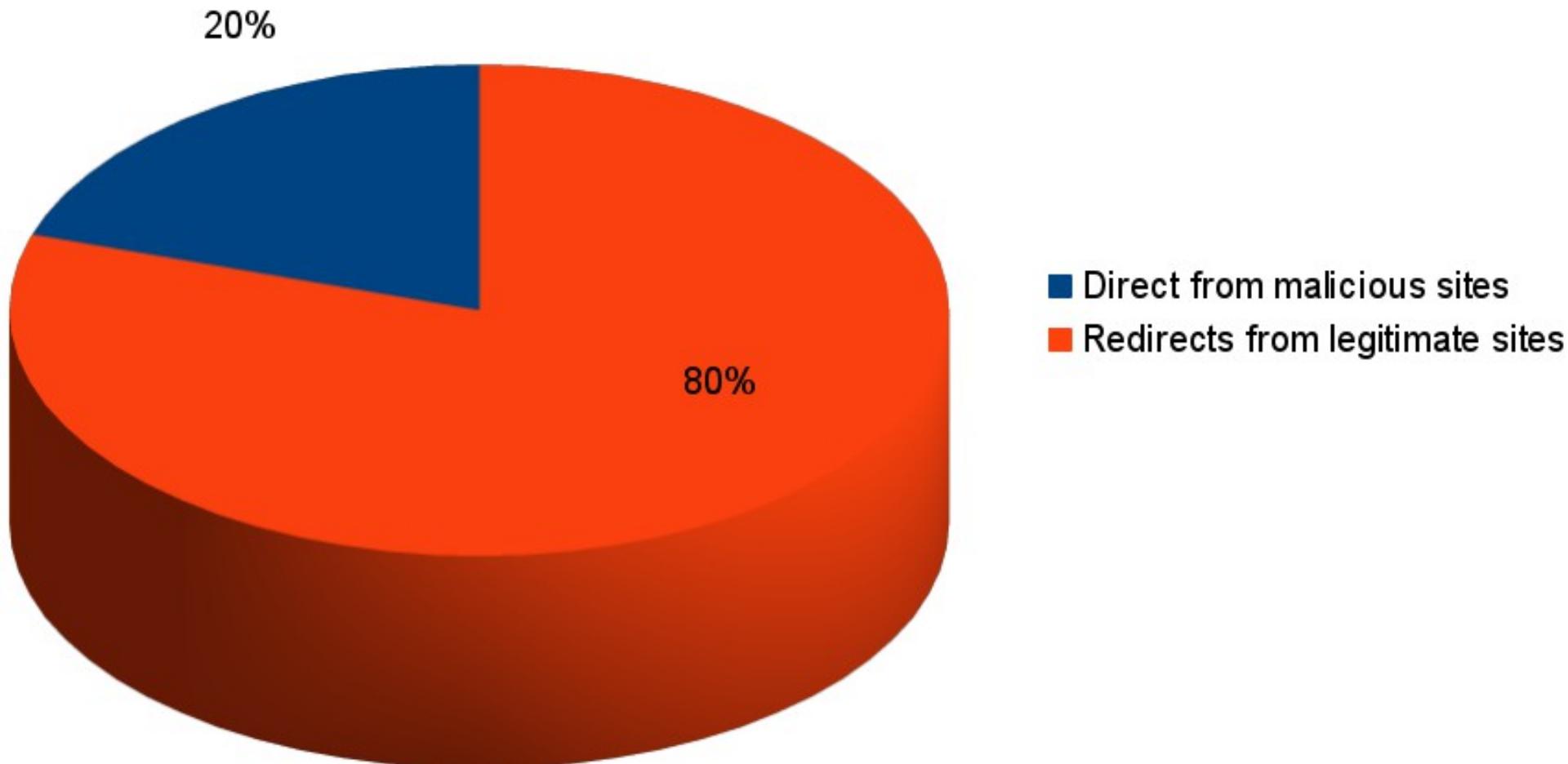
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Compromised websites is  
the most popular way to  
spread malware

## Types of malware attacks in 2012

Sophos Security Threat Report 2013





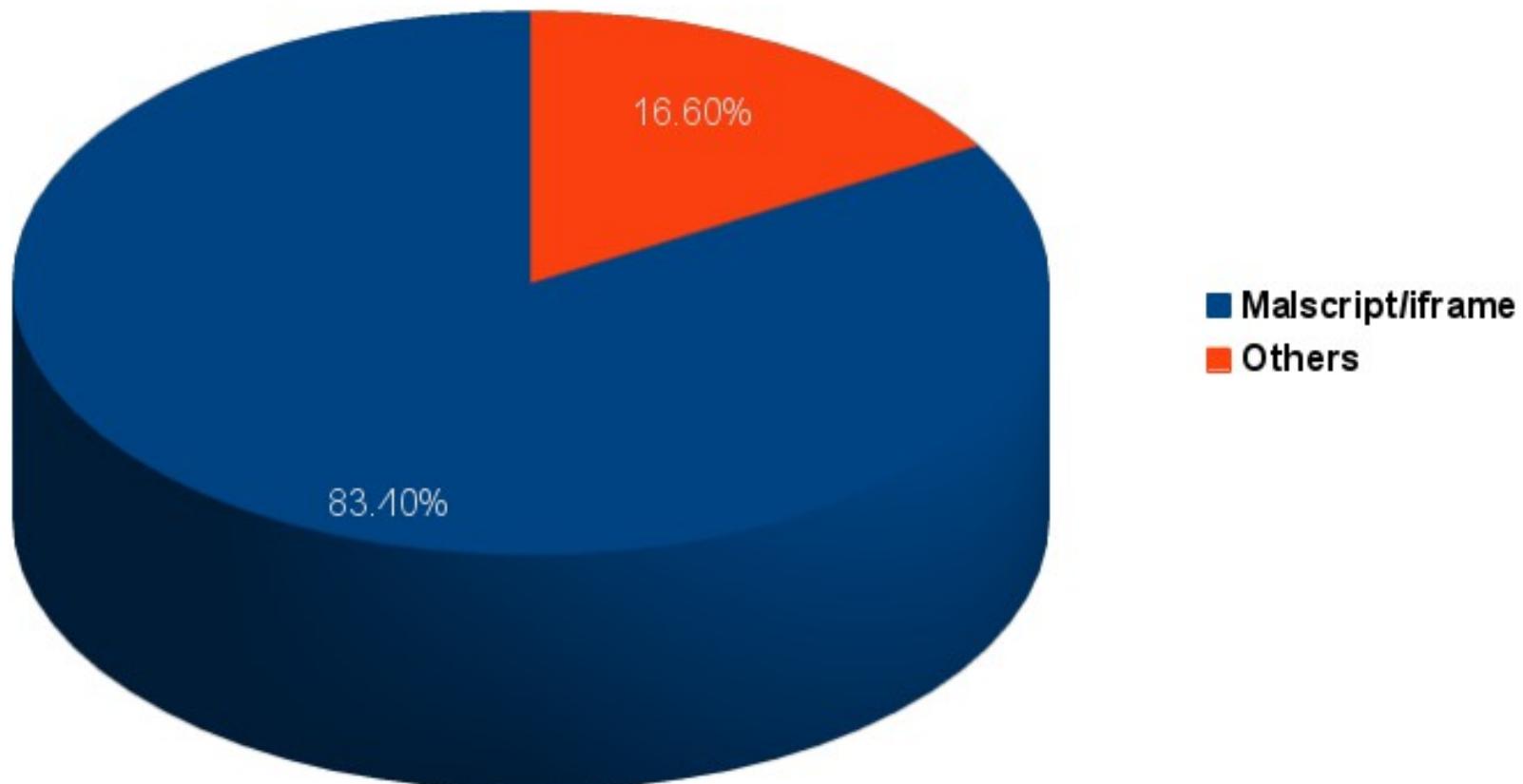
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Compromised websites is the most popular way to spread malware

## Cisco Annual Security Report 2013

### Top Web Malware Types





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# Compromised websites is the most popular way to spread malware

## Cisco Annual Security Report 2013

Business websites spread more malware than porn sites, Cisco says

This year's Security Report from Cisco disproves the "outdated" notion that mainstream websites are safer to browse than those with nefarious purposes.

By [Open Source Community](#) on Thu, 01/31/13 - 2:22pm.



Malware is more likely to come from advertisements on seemingly legitimate sites than on those previously thought to be more dangerous, such as adult content sites or those offering illegal pharmaceuticals, Cisco said in its recently released Annual Security Report [[PDF](#)].

"Web malware encounters occur everywhere people visit on the Internet - including the most legitimate of websites that they visit frequently, even for business purposes," Mary Landesman, Senior Security Researcher with Cisco, said in the report. "Indeed, business and industry sites are one of the top three categories visited when a malware encounter occurred. Of course, this isn't the result of business sites that are designed to be malicious."



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# Do You Know These?

## Fact 1

**No one, among the audience, knows what new hacker attack techniques, behaviour, pattern will come to light by this evening.**

**Since we do not know what new hacker tricks will be, why focus our efforts on the unknown?**

## Fact 2

**For decades, we had been chasing after hackers by focusing on their attack methods, but to date, we are still not winning the war with this reactive approach.**

**A definition of **Insanity**:** Expecting different results by repeating the same things over and over again.

**A better and smarter approach – **DATA-CENTRIC SECURITY****

## Fact 3

**A good example is the use of encryption. In encryption, we focus on protecting valuable data, instead of worrying about hacker attack signature, behaviour, pattern, reputation and so on.**

## Fact 4

**Alas! Encryption is not effective when it comes to web applications or cloud services. Ask yourself: Do you see a encrypted bank statement from your Internet banking portal even though the data is stored encrypted?**



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Outbound security prevents  
hackers from succeeding  
regardless of their means.



**A new and  
more effective  
way to  
defeat the hackers!**

# Top 10 steps to address outbound risks.



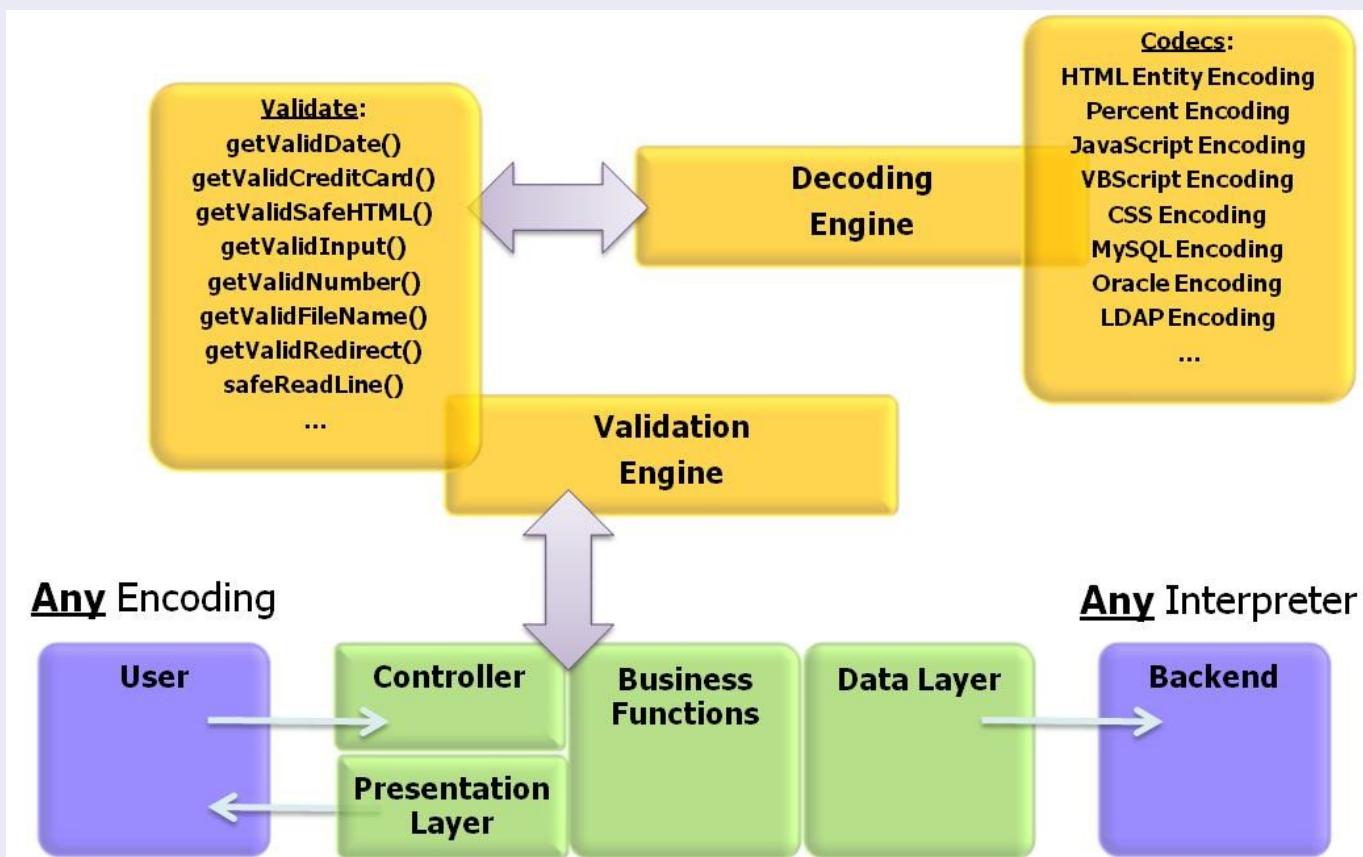
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1

## Output Encoding

- Effective against XSS.
- Available from OWASP ESAPI: ESAPI.encoder().encodeforXXX()





2

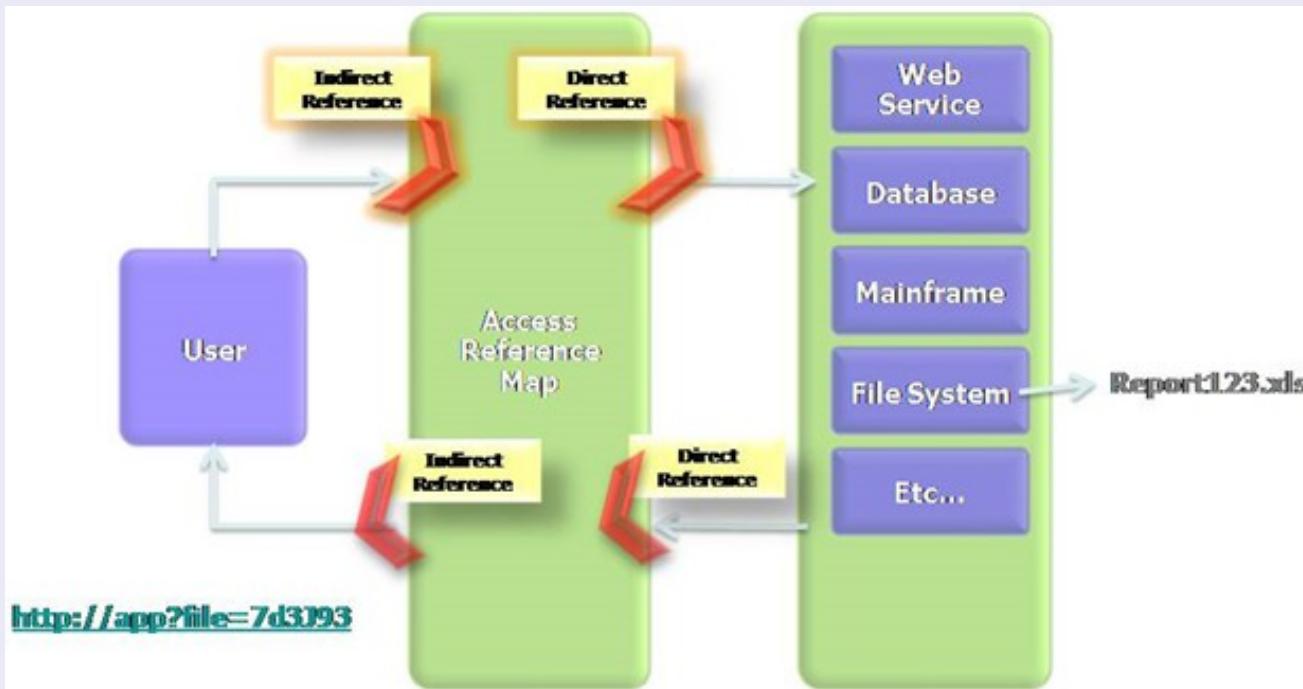
## Strong Authentication & Proper Session Management

- 2FA. *Have you enabled 2FA for your Gmail?*
- OWASP ESAPI: Authenticator interface

3

## Secure, Indirect Object References

- OWASP ESAPI: RandomAccessReferenceMap interface





4

## Configuration Hardening

- Use of CIS hardening benchmark guides for OS and web application platform

5

## Encryption

- Useful for database storage and as part of multi-layered defence.

6

## Restrict URL access

- OWASP ESAPI: isAuthorizedXXXX and assertAuthorizedXXXX methods

7

## Validate Redirects / Forwards

- OWASP ESAPI: HTTPUtils.sendRedirect method



8

### **Content Security Policy**

- Whitelist authorized sources of images, scripts, videos and etc...

9

### **Validate inputs**

- To minimize risks from injections.

10

### **Inspect outbound traffic**

- Useful as the last safety net, especially when hackers change their attack means.
- Helps to identify sensitive data leakage, display of defaced pages and transmission of compromised infectious pages

# WARNING!



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The following slides contain graphic examples which may cause sleepless nights to IT management



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# Scenario 1: Compromised Web Servers

## 17 websites of People Association, Singapore

## Singapore's statutory body confirms Web site hack

**Summary:** [UPDATE] People's Association, which promotes racial and social cohesion in the country, admits hacking into the country's first security breach on

Singapore statutory board, People's Association (PA), has confirmed hackers penetrated its **main Web site**, and **other subsidiary sites**, over the weekend.



Visitors to People's Association Web site on Sunday were greeted by this image.



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# Scenario 1: Compromised Web Servers

## Military Websites

**New hacking group hits government websites, leaks stolen data**

Posted on 04 May 2012.

....belonging to the European Space Agency, the French Ministry of Defense, the US Air Force, the Thai Royal Navy, the Bahrain Ministry of Defence and NASA's Glenn Research Center...

...posted screenshots and information pilfered from the websites and databases, including administrative usernames and passwords.

If the accompanying statement can be believed, the goal of the hacks was to make the owners of the websites ramp up their security.

"We're ready to give you full info on how we penetrated through [sic] your databases and we're ready to do this any time so just contact us, we will be looking forward for this," they concluded.



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# Scenario 1: Compromised Web Servers

## Adidas

Adidas pulls down sites hit in 'sophisticated' hack

Gymwear biz given a right shoeing

By [John Leyden](#) · Get more from this author

Posted in [Enterprise Security](#), 7th November 2011 15:44 GMT

[Free whitepaper – IBM System Networking RackSwitch and IBM System Networking solutions](#)

Adidas has taken some of its sites offline following the discovery of a "sophisticated" attack.

...taken down affected sites,  
including [adidas.com](#), [reebok.com](#), [miCoach.com](#),  
[adidas-group.com](#) and various local eCommerce shops,  
in order to protect visitors to our sites...  
hackers might have  
planted malicious scripts on the targeted website...

was...  
sophisticated, or...  
attack. Our preliminary  
investigation has found no  
evidence that any consumer  
data is impacted. But while we  
continue our thorough forensic  
review, we have taken down  
affected sites, including  
[adidas.com](#), [reebok.com](#),



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# Scenario 1: Compromised Web Servers

## LG Australia

### LG Australia's website hacked

Asher Moses

October 24, 2011



...LG's Australian website was hijacked and defaced with an elaborate message **over the weekend** and as of **this (Monday) afternoon it has still not been restored.**

have been

"It seems as though your website has been hacked. How did we get past your security? ..... What security? ;)," read a message on the site before it was pulled down.

The breach has been **archived** by Zone-H.com, which is a comprehensive database of website takeovers. It sends out a daily alert containing dozens of new compromised websites and



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# Scenario 1: Compromised Web Servers

## Apple

Apple.com hit in latest mass hack attack

Cupertino succumbs to Jedi server trick

By [Dan Goodin in San Francisco](#) • [Get more from this author](#)

Posted in [Enterprise Security](#), 17th August 2010 22:52 GMT

A hack attack that can expose users to malware exploits has infected more than 1 million webpages, at least two of which belong to Apple....

The SQL injection attack used highly encoded text strings to sneak past web-application filters. The attacks that hit Apple used highly encoded text strings to sneak past web-application filters.

In all, at least 530,000 webpages have similar fingerprints but have been claimed close to 500,000 more.

"These attacks have been ongoing and are changing fairly often," said Mary Landesman, a senior researcher with ScanSafe, a Cisco-owned service that provides customers with real-time intelligence about malicious sites. "Interestingly, many of the sites compromised have been involved in repeated compromises over the past few months. It's not clear whether these are the work of the same attackers or are competing attacks."

SQL injection attacks succeed because web applications don't properly filter search queries



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# Scenario 1: Compromised Web Servers

## 5 major Japanese companies

At least 73,000 visitors may be infected

### Gumblar virus infects websites

THE ASAHI SHIMBUN

2010/1/6

The dreaded Gumblar virus may have infected as many as 70,000 visitors to the websites of major Japanese companies that were confirmed altered via the malware.

The websites of East Japan Railway Co., Nagano-based Sankei-etsu Broadcasting Co., Kobe-based Radio Kansai and Kobe confectionary Morozoff Ltd., were also altered by hackers using the virus.

The virus sends visitors to the corporate sites to an alternative site that contains further malware that allows the virus to propagate in the visitors' computers.

Experts warn that the virus could cause further damage and allow hackers to steal passwords of other sites managed by infected computers and alter the programs.

“...websites of five companies, including Honda Motor Corp....

The virus sends visitors to the corporate sites to an alternative site that contains further malware that allows the virus to propagate in the visitors' computers... ”



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# Scenario 1: Compromised Web Servers

## Large European Insurance Firm in

Website was compromising visitors/customers



### Reported Attack Page!

This web page at www.■■■■■.life.com.sg has been reported as an attack page and has been blocked based on your security preferences.

Attack pages try to install programs that steal private information, use your computer to attack others, or damage your system.

Some attack pages intentionally distribute harmful software, but many are compromised without the knowledge or permission of their owners.

Get me out of here!

Why was this page blocked?

[Ignore this warning](#)

# Scenario 1: Compromised Web Servers



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## West Penn Hospital

85 other patient records were shown in online bill payment portal.

wpxi.co

Hospital Addresses Online Privacy  
Misadventure

“...she was able to view information on 85 other patients.

That information included the patient's **name, address, medical procedure and costs....**

...blamed the problem on a temporary data translation error  
involving a third-party billing partner.”

the priva  
people realize in

DeMarco said she sent two e-mails and

DeMarco then contacted Target Eleven.

When Earle contacted the hospital, hospital officials began an investigation.

A hospital spokesman blamed the problem on a temporary data translation error involving a third-party billing partner.

“We immediately disabled the online bill payment service to complete a full audit of the system. We are working to institute additional safeguards and cross-checks with our third party service to ensure that this issue is completely

On  
ents Have

...sentences Local Man After 12th DUI

- Some Notice Mysterious Charge On Bank Statement

- Online Comments Lead To Privacy Complaint

- Target 11 Investigates Crime At Pittsburgh Area Malls

# Scenario 1: Compromised Web Servers



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## Citibank, US

360,000 accounts/credit card information was lost

Citigroup hack exploited easy-to-detect web flaw • The Register - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Citigroup hack exploited eas... ANSES | LinkedIn Governmentware 2011

http://www.theregister.co.uk/2011/06/14/citigroup\_website\_hack\_simple/ IBM x3650M3

Citigroup hack exploited easy-to-detect web flaw

Brute force attack exposes 200,000 accounts

By [Dan Goodin](#) • Get more from this author

Posted in [Crime](#), 14th June 2011 21:25 GMT

Hackers who stole bank account details for 200,000 Citigroup customers infiltrated the company's system by exploiting a garden-variety security hole in the company's website for credit card users, according to a report citing an unnamed security investigator.

*The New York Times* reported that the technique allowed the hackers to leapfrog from account to account on the Citi website by changing the numbers in the URLs that appeared after customers had entered valid usernames and passwords. The hackers wrote a script that automatically repeated the exercise tens of thousands of times, the *NYT* said in an article published Monday.

"Think of it as a mansion with a high-tech security system – that the front door wasn't locked tight," reporters Nelson D. Schwartz and Eric Dash wrote.

The underlying vulnerability, known as an [insecure direct object reference](#), is so common that it's included in the [Top 10 Risks list](#) compiled by the Open Web Application Security Project. It results when developers expose direct references to confidential account

European Council: Creating hacking tools should be criminal across EU

Citigroup hack exploited easy-to-detect web flaw

States consider saner 'sexting' penalties for teens

Men pocket \$1.5m in alleged ATM skimming spree

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And you're paying. On your 'leccy bill

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FoxyProxy: Default Blocked: 1 of 1 Apache/2.2.16 212.100.234.54

# Scenario 3: Misconfiguration



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## American Express

### Debug mode accidentally left on.

AmEx 'debug mode left site wide open', says hacker

Customer cookies 'at risk'

By John Leyden • Get more from this author

Posted in Enterprise Security, 7th October 2011 14:46 GMT

Free whitepaper – 2011 Linnis D

Ap

...the **debug mode** of the **americanexpress.com** site had inexplicably been left on, thus providing access to vulnerable debug tools.

The security shortcoming creating a possible mechanism to harvest users' authentication cookies

New information was ...

We learned this morning that an internal test page created to update promotional offers was temporarily accessible on our US website. The page did not contain CM information such as card number, name or address.

The page in question has been taken down. We are not aware of any information at this time that this vulnerability was used for malicious purposes but we are

# Scenario 3: Misconfiguration



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## Microsoft BPOS Cloud Service

Microsoft BPOS cloud service hit with data breach

A 'small number' of Offline Address Book users had some of their data accessed

By Andreas Udo de Haes, *Webwereld Nederland*

1/14

...due to a configuration issue,

**Offline Address Book information for Business Productivity Online Suite (BPOS) Standard customers could be inadvertently downloaded by other customers of the service, in a very specific circumstance,"...**

**Microsoft has notified all Business Productivity Online Suite-Standard partners and customers about the issue.**

customers could be inadvertently downloaded by other customers of the service, in a very specific circumstance," said Clint Patterson, director of BPOS Communications at Microsoft.

The data breach occurred in Microsoft data centers in North America, Europe and Asia. The issue was resolved within two hours of being discovered, Microsoft said in a statement. However, during this time "a very small number" of illegitimate downloads occurred. "We are working with those few



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# Scenario 3: Misconfiguration

## Facebook Source codes were leaked.

FOXNEWS.COM HOME > SCITECH

### Facebook Source Code Leaked Onto Internet

Wednesday, June 25, 2008

By Jonathan Richards

THE TIMES

Share:

**Facebook users on Monday were left confused after a portion of the site's source code was stored on the social-networking site after a misconfiguration on a single server.**

The site on Monday acknowledged that a section of its code had been exposed to a small number of users, but stressed that none of the personal details of its 52 million users had been compromised.

Over the weekend, a blog called **Facebook Secrets** published details of part of Facebook's source code, the set of commands which determine the way the site appears when it is viewed by users.

- [Click here to visit FOXNews.com's Cybersecurity Center.](#)
- [Click here for FOXNews.com's Personal Technology Center.](#)

**Facebook** said that a fraction of its code had been "exposed to a small number of users as a result of a single, misconfigured Web server" but that the problem was "fixed immediately."

RELATED

"It was not a security breach and did not compromise user data in any way," the company said in a statement released

“....exposed to a small number of users  
as a result of  
a single, misconfigured Web server...”



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# Scenario 3: sconfiguration

# Facebook

One of the “small number of users” posted on his blog the source code of Facebook home page



# Scenario 3: Misconfiguration

UBS

## Bank customer records were leaked during system upgrade

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March 3, 2009

## Glitch

Wealthy customers small

A TECHNICAL glitch has affected UBS' private banking clients in Singapore and Hong Kong, causing them to receive bank statements and account information for other clients' online accounts.

The private-banking clients found that their bank statements and account information for other clients' online accounts, though, do not indicate their names.

When contacted, a UBS spokesman confirmed the incident and the bank was taking it very seriously.

Asked how many clients were affected, all she said was that 'the limited account information concerning a small number of UBS wealth-management clients was accessible by a very limited number of other system users'. She added that fewer than five accessed the information.

She told my paper the glitch occurred 'as a result of an inadvertent technical error following an information-technology system upgrade over the weekend of Feb 21'.

The bank immediately took steps to rectify the issue. UBS reviewed the circumstances leading to the incident and has implemented measures to prevent a similar occurrence in the future.

**“private-banking clients found confidential details of other clients' bank statements and account information instead of their own...result of an inadvertent technical error following an information-technology system upgrade over the weekend of Feb 21“**

12:53 PM  
Child abuse 12:50 PM  
Parents identify son's body 12:17 PM  
Lower interest on deposits 6:00 AM  
Youth games on Web 6:00 AM  
Airlines' \$12b loss in 2008 6:00 AM  
STI at lowest since Aug '03 6:00 AM  
A-level results out on Fri 6:00 AM  
Family sues HSBC over forex 6:00 AM  
Signs of violent struggle 6:00 AM  
Glitch spills UBS clients' info 9:23 AM  
Well respected by students 6:00 AM  
Lightning strikes all too often 6:00 AM  
SPH websites score high 6:00 AM

# Scenario 4: Negligence



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## Princeton Review

108,000 student records were leaked

### Student Private Information Leaked on Preparatory Firm Website

Princeton Review published confidential data by accident

By Denisa Ilascu, Internet / SEO News Editor  
19th of August 2008, 12:28 GMT

Adjust text size: **A-** **A+**



Princeton Review is responsible for seven websites. Review, Inc. has an address.

The organization is based in Florida. The file contains the ethnicities and their grades.

students' skills in mathematics, reading, science and writing. It also contains other sensitive information regarding learning disabilities, or whether English is a student's first language or not.

The schools in Sarasota were not the only ones affected by the failure in the security system of Princeton Review. The names and birthdays of approximately 74,000 students from the public schools in Fairfax County, Virginia, were revealed in the same way.

"Some of the information is said to have been accessible through search engines like Google. You have to wonder - if companies are making it this easy to discover information about individuals, why do identity thieves go to all that effort of writing spyware?" **commented** Senior Technology Consultant at the security company Sophos, Graham Cluley.

The most intriguing thing about the incident was that it was discovered by another preparatory firm, as it was performing a survey to see how competition was doing. When finding that all the data, which were not supposed to ever be made public, were available on the Princeton Review website, the institution, on the condition of being allowed anonymity, broke the story to the Washington Post.

**"The most intriguing thing about the incident was that it was discovered by another preparatory firm, as it was performing a survey to see how competition was doing.... broke the story to the Washington Post"**

# Scenario 4: Negligence



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## Government Agency, Malaysia

150 officers' private information was leaked while CEO was lecturing the public to have safe IT practices.

BI	Nama	No. K/P	Alamat	Penempatan
1	Mohd Ghuzaimi Bin	14-5881	Bandar Tun Husni, Kuala Selangor.	Jalan Malaysia
2	Norazura Binti An	10-5622	Jalan 42000 Selangor	Jalan Malaysia
3	Amerul Hazriq B	43-5141	Jah, 4700 0 Selangor.	Jalan Malaysia
4	Mohd Nur Azimm	03-5139	Wakaf tan	Jalan Cheras
5	Mohamad Ridwa	14-6255	Jl. 52100 Lumpur.	Jalan Cheras
6	Norshazrina Binti	14-5176	, Kampung Rawang.	Jalan Duta
7	Mohd Khairul Azu	11-5325	Off Port Klang,	Jalan Duta
8	Norhamiza Binti A	08-6358	Taman Kedah	Jalan Duta
9	Muhamad Al Hafiz	56-5129	Kampung Limau, 59200 Kuala	Jalan Duta
			Kampung	

# Scenario 4: Negligence



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## Telco A, Singapore

National ID of 100 lucky draw winners were left undetected on telco web site for 5 years.

### Mobile Valentine's Day Messaging Contest 2004

Congratulations to all winners!

All winners will be notified by post and prizes must be collected by 21 April 2004.

Please email us if you do not hear from us by 31 Mar 04 5pm.

#### Best Messages - \$2000 travel voucher:

I/C	Names
S [REDACTED] 11H	Mr CHAN K [REDACTED]
S [REDACTED] 18I	MR JEREM [REDACTED]
S [REDACTED] 90C	MS TANG V [REDACTED]

#### Early Bird / DJ's Best Selections – A pair of GV movie vouchers :

I/C	Names
F [REDACTED] 72N	MR HUANG C [REDACTED]
G [REDACTED] 93Q	MR HUNGER [REDACTED]
G [REDACTED] 23W	MR ASHOK G [REDACTED]
G [REDACTED] 02P	MR TAN KAK [REDACTED]
S [REDACTED] 43G	MR TOH YEW [REDACTED]
S [REDACTED] 29J	MRS CHOO H [REDACTED]
S [REDACTED] 03D	SAINI BIN SAI [REDACTED]
S [REDACTED] 12J	MR ROKIAH B [REDACTED]

# Scenario 4: Negligence



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## Elections Department, Singapore

Private information of election candidates was leaked

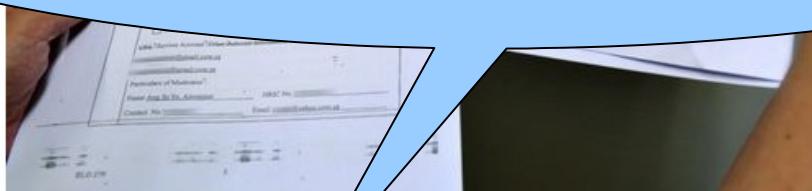
### Elections Department boo boo

May 8, 2011 - 10:56pm

By: [Tay Siong](#)

... included the **NRIC number of Health Minister Khaw Boon Wan**, and the **NRIC and handphone numbers** of Aljunied candidate.... from the People's Action Party (PAP).

The handphone numbers of opposition candidates .... were also made public.



TNP PHOTO: Kua Chee Siong

On April 29, The New Paper alerted the Elections Department that it had uploaded scanned forms containing the personal information of several candidates contesting in this year's elections.

At about 3pm on the same day, the website with all the forms was taken down.

The forms included the NRIC number of Health Minister Khaw Boon Wan, and the NRIC and handphone numbers of Aljunied candidate Ong Ye Kung from the People's Action

# Scenario 4: Negligence



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## Ministry of Defence, UK

Military secrets were leaked from an online PDF

**TOP SECRET MOD LEAKS MADE AGAIN ON WEBSITE**

An online internal report contained black-out -passages  
that could still be read by the enemy...  
...made the same mistake just six months ago,  
when they failed to secure a report into nuclear submarines...  
...“To make such a blunder once is unfortunate,  
to do it twice is careless in the extreme.”



ABOVE: Our story from April

In both gaffes, secret passages could be read by copying them into a new document.

In the latest blunder the report told how wind farms affect nearby radar stations and how any interference can be overcome.

**“To make such a blunder once is unfortunate, to do it twice is careless in the extreme”**

Graham Cluley, a computer security expert at the web safety firm Sophos

The 22-page “Air Defence And Air Traffic Systems Radar Transportation Study – Part 2” was posted on Parliament’s website.

Graham Cluley, a computer security expert at the web safety firm Sophos, said: “Once again it’s another schoolboy error. You have to wonder how many times they are going to keep making basic data security mistakes.”

# Scenario 4: Negligence



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## Southeast Asian Army

Sensitive military inventory was leaked

### Resources

#### HEADQUARTERS

ARMY

#### MONTHLY STATUS OF ENGINEER EQUIPMENT

(For the Month of November 2007)

NR	NOMENCLATURE	MAKE	MODEL	USN	ESN	YR ACQ	STAT	USING UNIT	LOCATION	REMARKS
1	BACKHOE EXCAVATOR	CASE	M1085L		46018864	1991	G	BCOY, 543ECB		
2	BACKHOE, LOADER	CASE	580SK	D130029	45049327	1991	G	BCOY, 542ECB		
3	BACKHOE, LOADER	CASE	580L	556022985	45323764	1991	R	EEMCO, 543ECB		FOR REPAIR
4	BACKHOE, LOADER (MINI)	YANMAR	3TN78L-DBS		01615	2006	G	BCOY, 552ECB		
5	ROAD ROLLER	DRESSER	VOS2-66B	SX320002U470268	44275750	1989	G	ACOY, 542ECB		
6	ROAD ROLLER	DRESSER	BOMAG	1984B	109937	1989	G	EEMCO, 542ECB		
7	ROAD ROLLER	DRESSER	VOS-266B	V320002U470272	44294767	1989	G	CCOY, 543ECB		
8	ROAD ROLLER PORTABLE	8RDP			1977506		G	EEMCO 546ECB		
9	ROAD ROLLER	DRESSER	VOS2-66B		44291750	1990	R	EEMCO, 546ECB		FOR REPAIR
10	ROAD ROLLER	DYNAPAC	C5508W	45179728	585278CD	1991	Y	EECO, ESB		
11	ROAD ROLLER VIBRATORY	DRESSER			44280114	1989	R	B COY 552ECB		FOR REPAIR
12	ROLLER, SF 2 DRUM	BROS	M5-1/2	TR-388		1968	G	EEMCO, 552ECB		
13	ROAD, GRADER	DRESSER	A450E	G75005U100619	44325830	1989	G	BCOY, 542ECB		
14	ROAD, GRADER	DRESSER	A450E	G750005U101045	44410174	1990	G	BCOY, 542ECB		
15	ROAD, GRADER	DRESSER	A400E	G710002U100419	466DC2U521963	1988	G	ACOY, 543ECB		
16	ROAD, GRADER	CAT	E120G	87V06163	A4095Y	1982	R	EEMCO, 543ECB		FOR REPAIR
17	ROAD, GRADER	DRESSER	A450E	G75000U100621	44324459	1989	G	BCOY 543ECB		
18	ROAD, GRADER	DRESSER	A450E		44324460	1989	R	EEMCO, 546ECB		

# Why you should invest in your last line of defence



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Through outbound protection, you can reap these benefits:



- 1 Supports BUSINESS by building customer and public confidence in web-based services
- 2 Supports BUSINESS by avoiding costs such as regulatory penalties and reputation restoration costs.
- 3 Supports INFORMATION SECURITY by complementing other security systems which primarily look at inbound traffic.
- 4 Supports OPERATIONS by stopping any leakage or visitor infection arising from change management errors.



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# Thank You

**Wong Onn Chee**

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