Phishing:
Going from Recon to Creds

Agenda

- Talk About Ourselves
- What is Phishing?
- A Standard Phishing Process
- Speed Phishing Demo

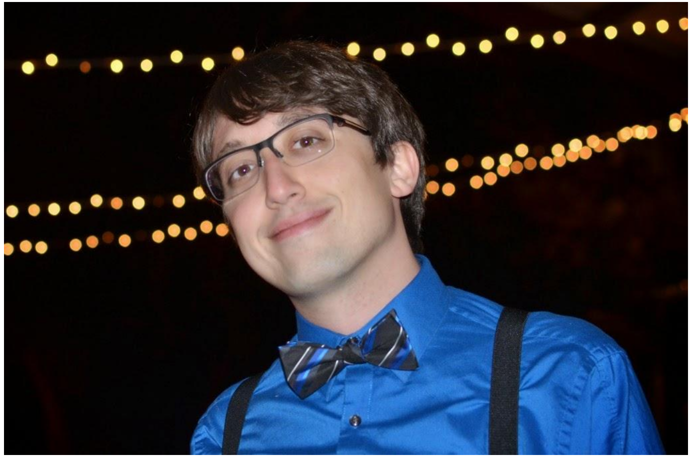
Adam Compton

- Father - 5 yrs
- Husband -15 yrs
- Pentester - 15 yrs
- Programmer - 34 yrs
- Hillbilly - 39 yrs

@tatanus
https://github.com/tatanus
http://blog.seedsofepiphany.com/

adam.compton@gmail.com
adam_compton@rapid7.com
RAPID7

Eric Gershman



- Sysadmin => Security
- Blue Team in HPC
- Phishing Demo at DC865

Twitter:	@ericgershman
Email:	eric@ericgershman.com
IRC:	Hexxus on Freenode
Github:	github.com/EricGershman

What is Phishing?

"the attempt to acquire sensitive information...by masquerading as a trustworthy entity in an electronic communication." - Wikipedia (Phishing)

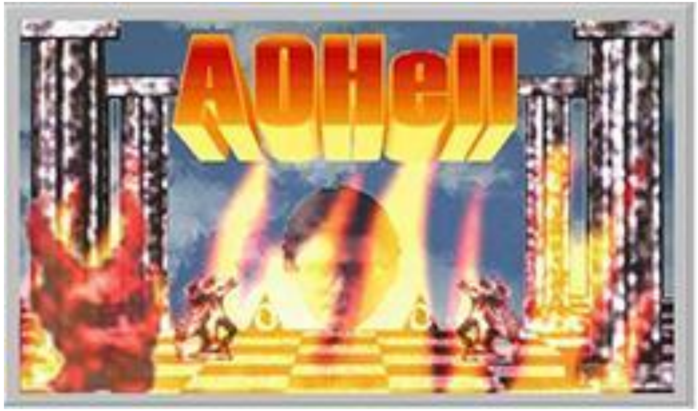
AUTOMATIC DOOR
KEEP MOVING
AUTOMATIC SLIDING DOOR
WHAT IS
"PHISHING?"
Phishing is an attempt to steal financial or other confidential information from Internet users.
$$$
Phishing is typically done by sending an e-mail that looks as if it is from a legitimate organization (usually a financial institution).
However, the email contains a link to a fake website that replicates the real one.
Phishing attempts can be very subtle.
Generally the fake website address is very close to the one it is mimicking.
Microsoft
FOR MORE INFORMATION

https://www.flickr.com/photos/doctorow/20309150381

Why Phish?

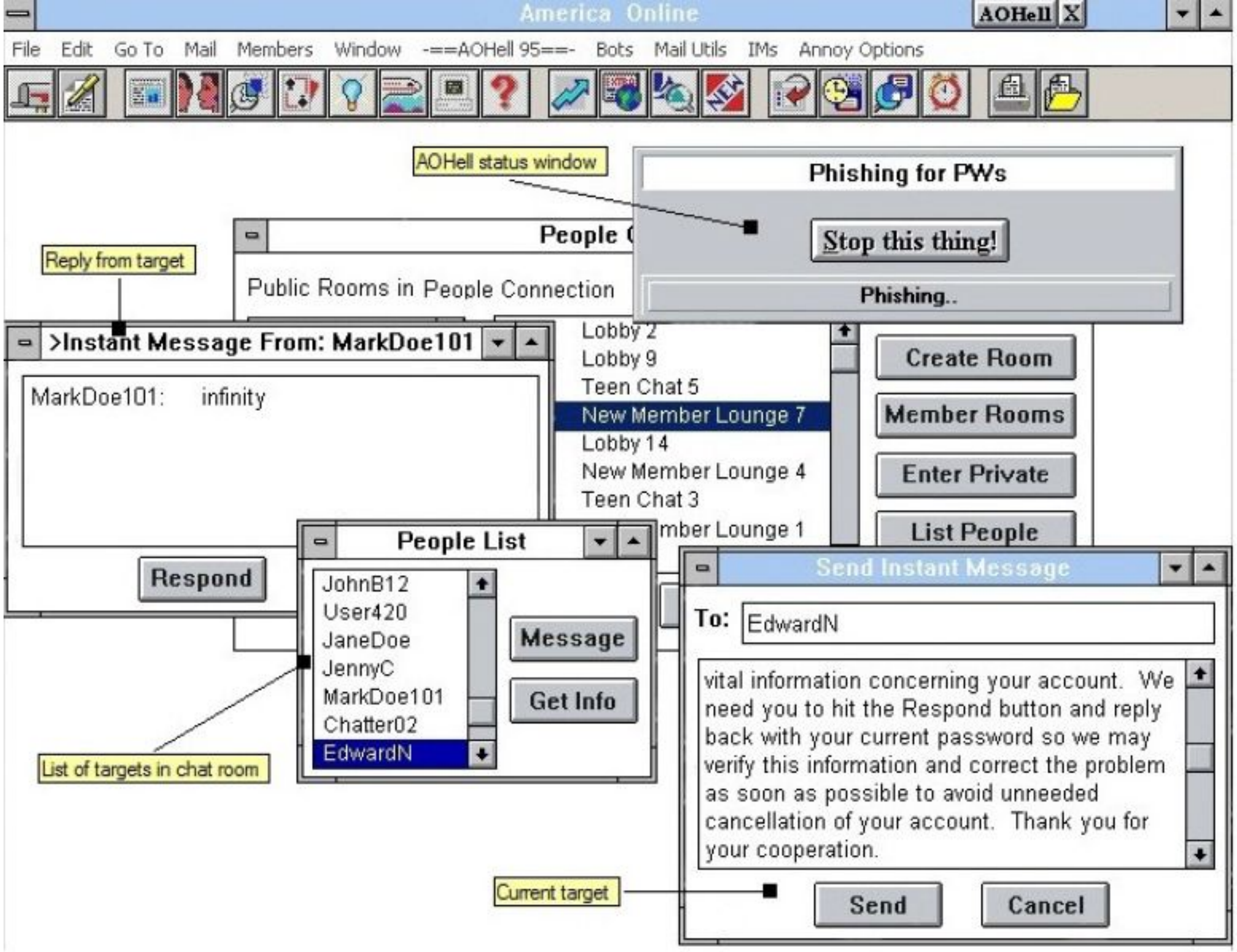
- Potential high return on investment
- May be easiest way on a network
- It works! People want to be helpful.

Going Back to the 90s



“AOHell includes a "fisher" that allows a user to pose as an AOL official and ask new members for passwords or credit-card numbers.” - San Jose Mercury 1995

http://simson.net/clips/1995/95.SJMN.AOL_Hackers.html



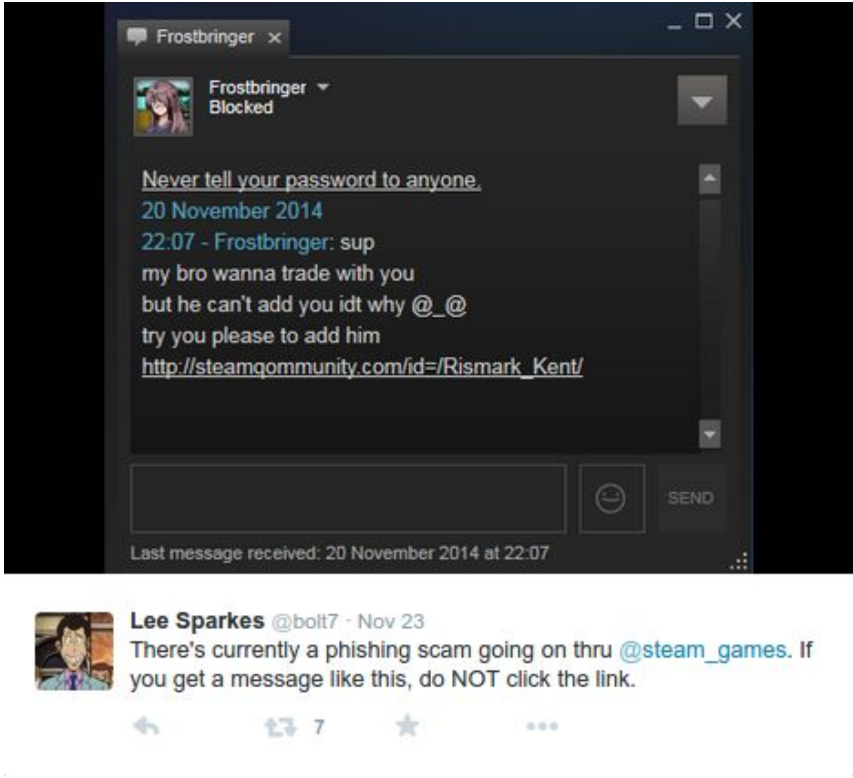
MarkDoe101: infinity

To: EdwardN

vital information concerning your account. We need you to hit the Respond button and reply back with your current password so we may verify this information and correct the problem as soon as possible to avoid unneeded cancellation of your account. Thank you for your cooperation.

What kind of sensitive info?

- Credentials
- Credit Cards
- Identity - PII
- Health Information
- Bitcoin Wallets
- Steam Accounts



Frostbringer
Blocked

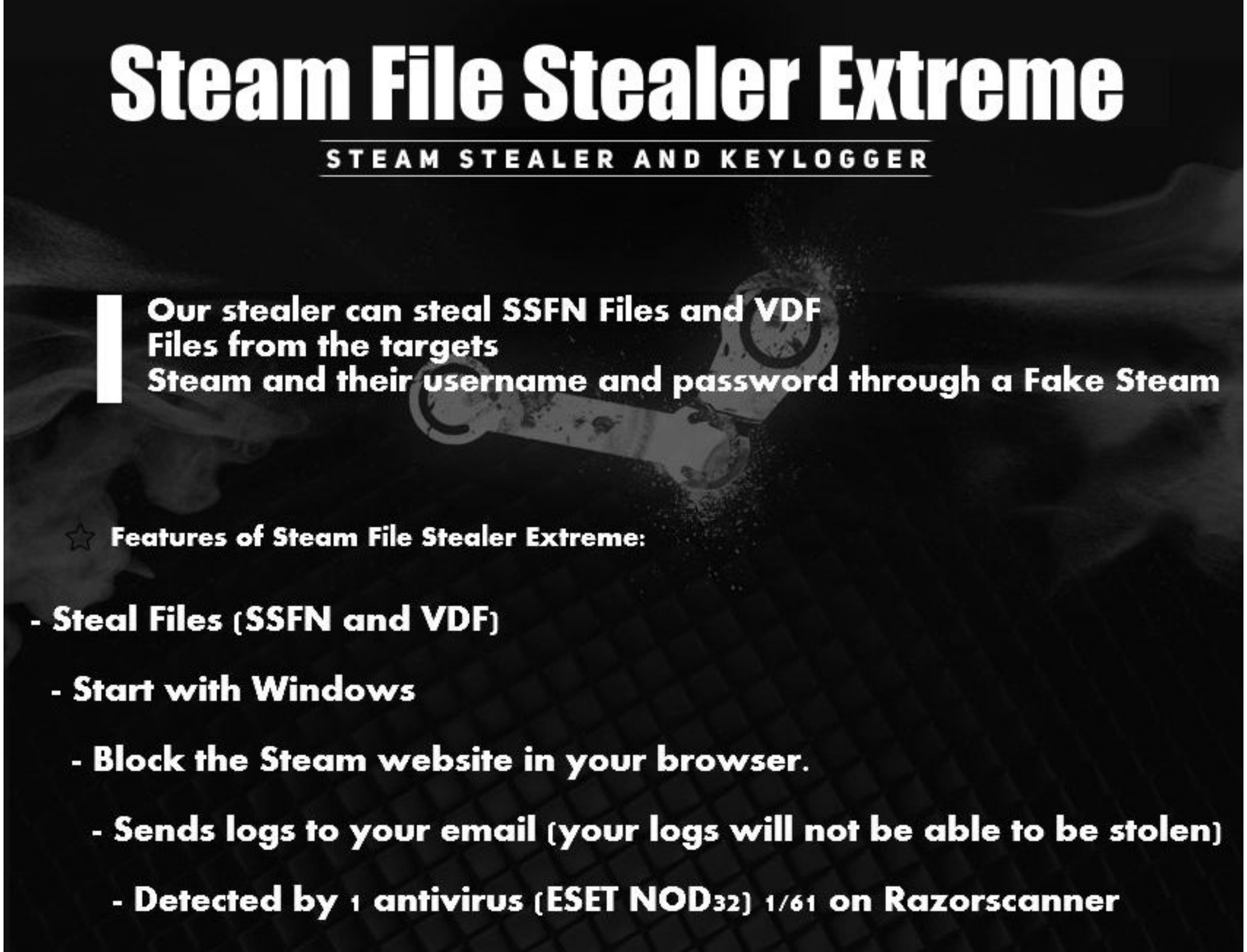
Never tell your password to anyone.

20 November 2014

22:07 - Frostbringer: sup
my bro wanna trade with you
but he can't add you idt why @_@
try you please to add him
http://steamqommunity.com/id=/Rismark_Kent/

Last message received: 20 November 2014 at 22:07

Lee Sparkes @bolt7 · Nov 23
There's currently a phishing scam going on thru @steam_games. If you get a message like this, do NOT click the link.



Steam File Stealer Extreme

STEAM STEALER AND KEYLOGGER

Our stealer can steal SSFN Files and VDF
Files from the targets
Steam and their username and password through a Fake Steam

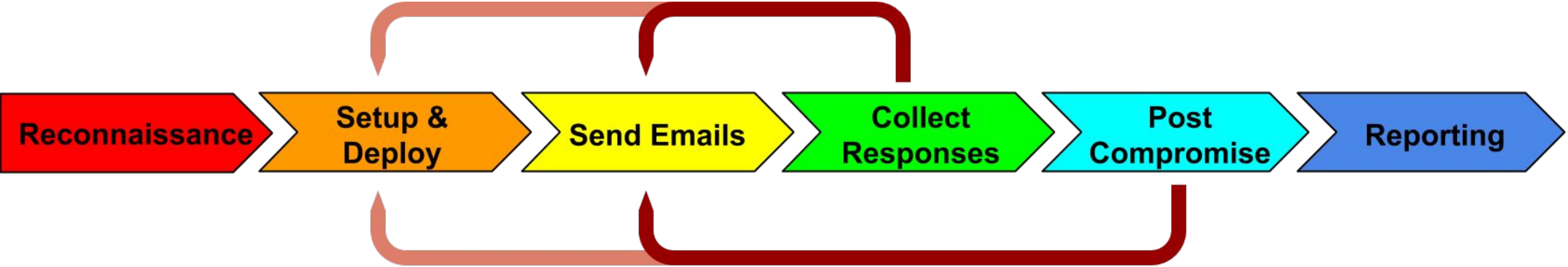
☆ Features of Steam File Stealer Extreme:

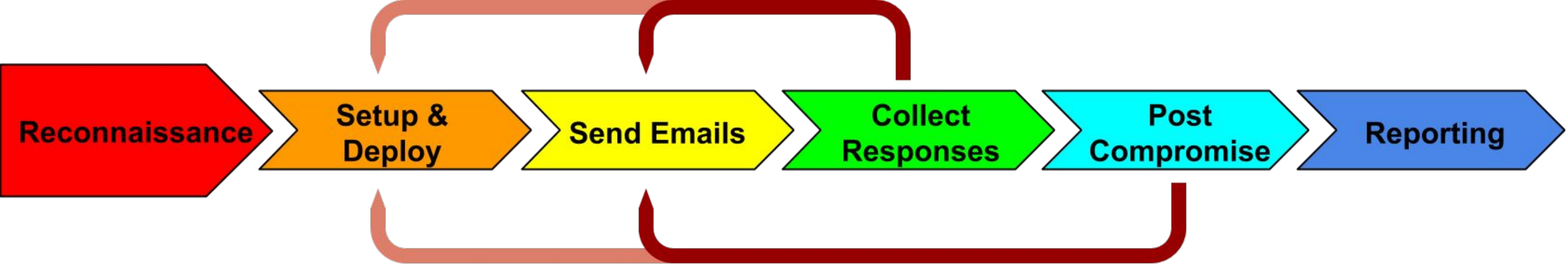
- Steal Files (SSFN and VDF)
- Start with Windows
- Block the Steam website in your browser.
- Sends logs to your email (your logs will not be able to be stolen)
- Detected by 1 antivirus (ESET NOD32) 1/61 on Razorscanner

Types of Phishing Attacks

Attack	Magnitude	Targeting
Phishing	Many	General
Spear Phishing	10s - 100s	Group, Company
Whaling	One	Executive

Standard Phishing Process



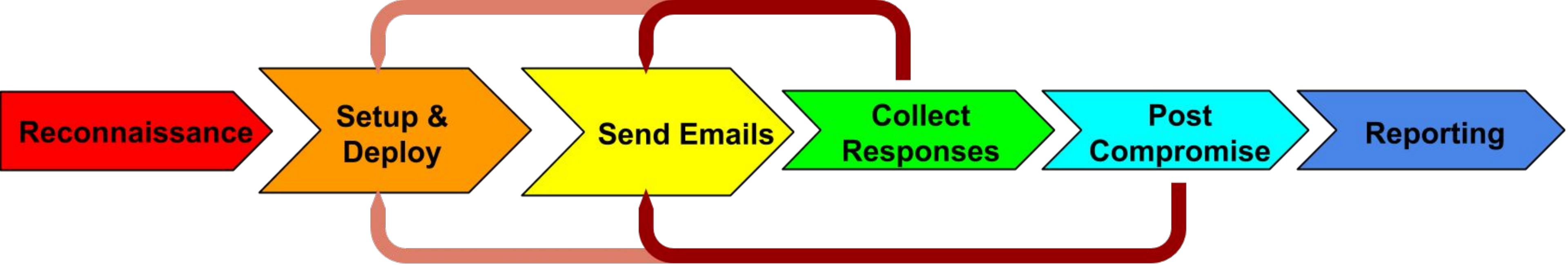


- The list of targets and any other info that will help
- Find through company site, google searches, and even social media
- List may be provided by customer

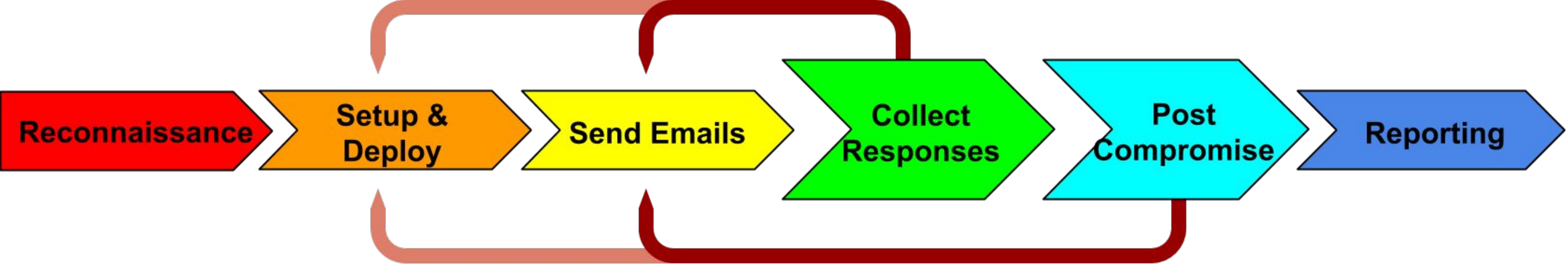
Recon Tools

```
$ python recon-ng.py

                 [recon-ng v1.00 Copyright (C) 2013, Tim Tomes (@LaNMaSteR53)]
```

```
*******************************************************************
*                                                                 *
* | |_| |__   ___    /\  /\__ _ _ ____   _____  ___| |_ ___ _ __  *
* | __| '_ \ / _ \  / /_/ / _` | '__\ \ / / _ \/ __| __/ _ \ '__| *
* | |_| | | |  __/ / __  / (_| | |   \ V /  __/\__ \ ||  __/ |    *
*  \__|_| |_|\___| \/ /_/ \__,_|_|    \_/ \___||___/\__\___|_|    *
*                                                                 *
```

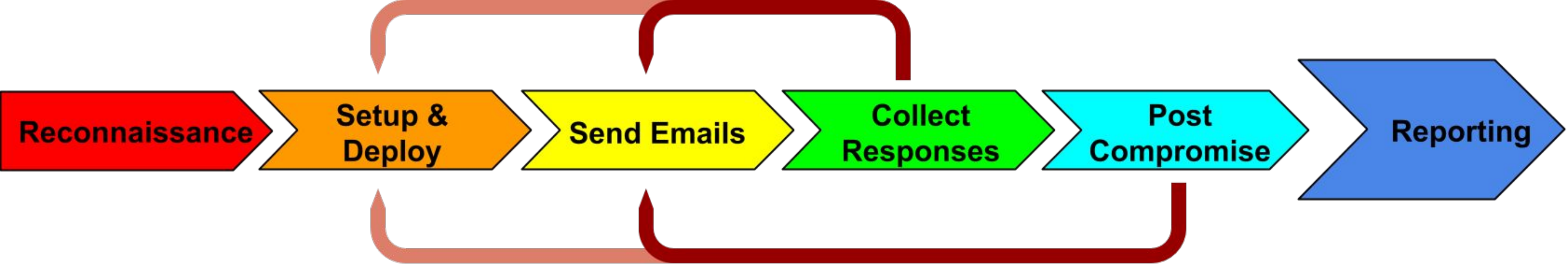


- Setting up web, dns and/or mail servers
- Create a convincing scenario, write the email
- Test the entire process!
- This may be your only chance to fix issues



- Credential Harvesting => Login Information
- Exploiting Client => Metasploit Sessions
- This step is based on scope of work

Attack Tools - Setup to Post Compromise



- Everyone’s Favorite Part!
- At Minimum:
  - Describe the Attack Scenario
  - Targets
  - Collected Credentials or Compromised Systems
- Include Statistics

I am lazy - Can we make this even easier?

Yes...Automation!

- Program APIs
  - BeEF RESTFul API
  - Recon-cli
  - SET - seautomate
- Parse Commandline Tool Output
- Python, Perl, & Bash

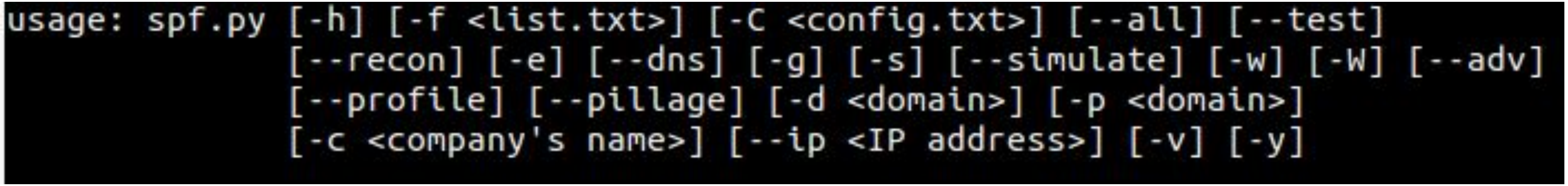
SpeedPhishing Framework - SPF

- Automates common tasks needed to perform a phishing exercise
- Written in Python
- Minimal external dependencies

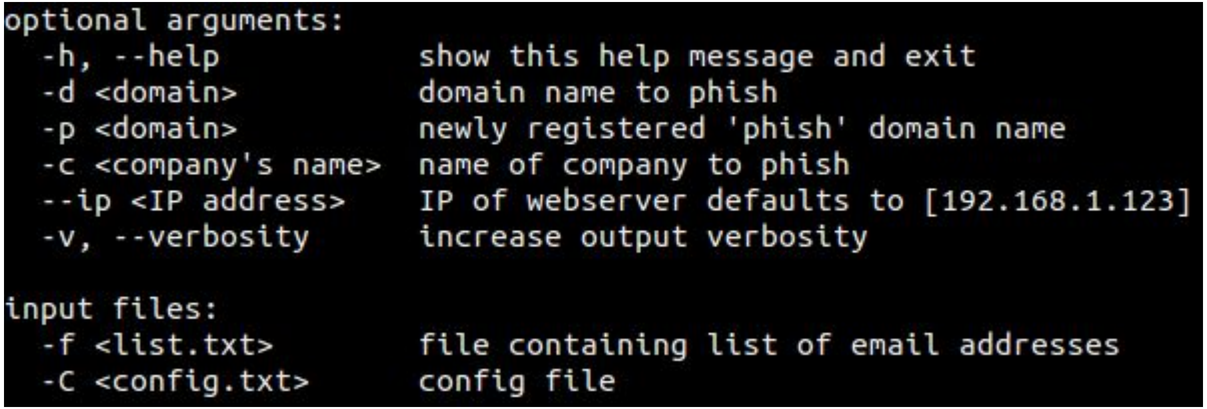
Current Features

- Harvests Email Address
- Setups & Hosts Websites
- Sends phishing emails to targets
- Records Creds and Keystrokes
- Creates Simple Report

SPF - Usage Statement / Options

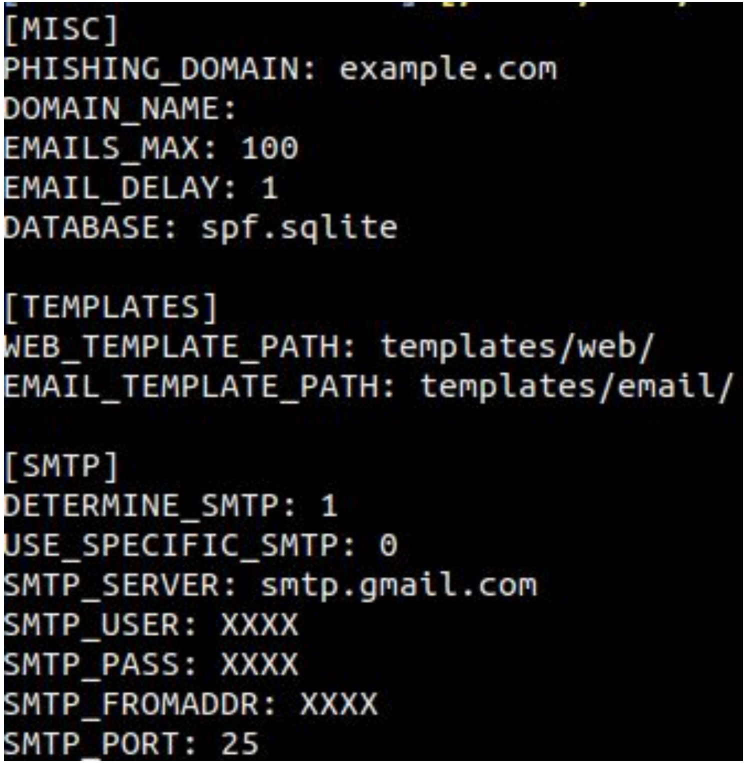


```
usage: spf.py [-h] [-f <list.txt>] [-C <config.txt>] [--all] [--test]
              [--recon] [-e] [--dns] [-g] [-s] [--simulate] [-w] [-W] [--adv]
              [--profile] [--pillage] [-d <domain>] [-p <domain>]
              [-c <company's name>] [--ip <IP address>] [-v] [-y]
```

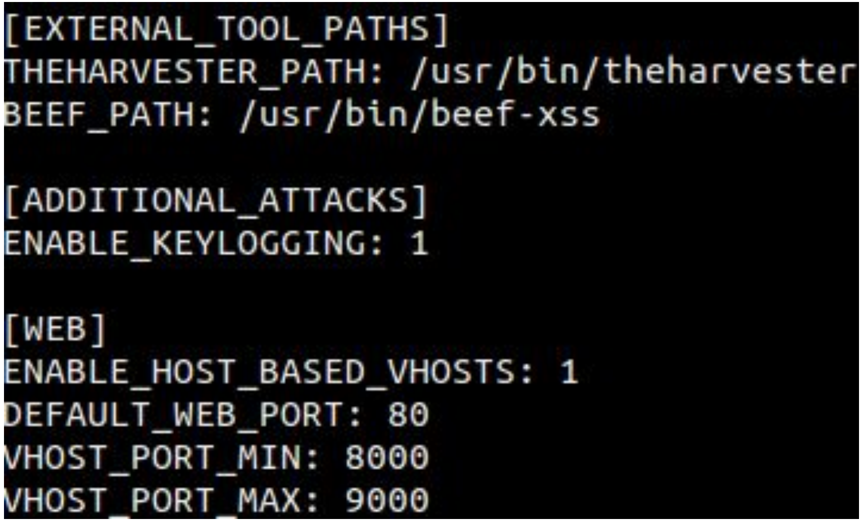


```
optional arguments:
  -h, --help           show this help message and exit
  -d <domain>          domain name to phish
  -p <domain>          newly registered 'phish' domain name
  -c <company's name>  name of company to phish
  --ip <IP address>    IP of webserver defaults to [192.168.1.123]
  -v, --verbosity      increase output verbosity

input files:
  -f <list.txt>        file containing list of email addresses
  -C <config.txt>      config file
```

SPF - Config File

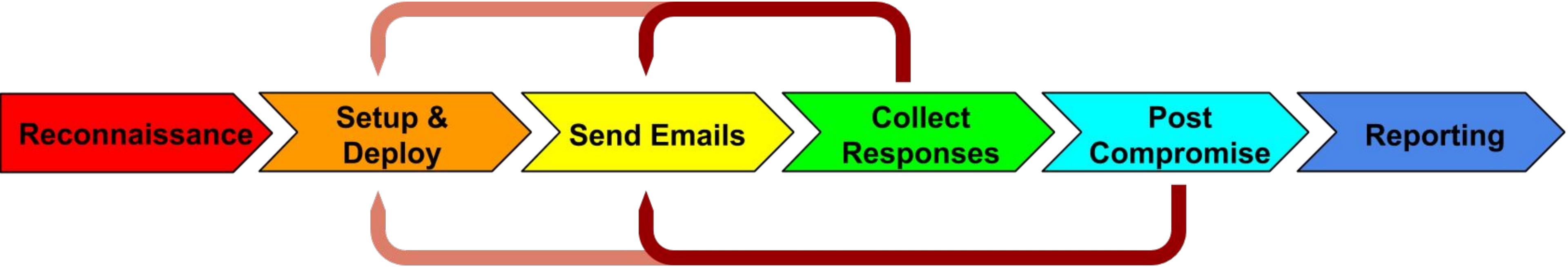


```
[MISC]
PHISHING_DOMAIN: example.com
DOMAIN_NAME:
EMAILS_MAX: 100
EMAIL_DELAY: 1
DATABASE: spf.sqlite

[TEMPLATES]
WEB_TEMPLATE_PATH: templates/web/
EMAIL_TEMPLATE_PATH: templates/email/

[SMTP]
DETERMINE_SMTP: 1
USE_SPECIFIC_SMTP: 0
SMTP_SERVER: smtp.gmail.com
SMTP_USER: XXXX
SMTP_PASS: XXXX
SMTP_FROMADDR: XXXX
SMTP_PORT: 25
```



```
[EXTERNAL_TOOL_PATHS]
THEHARVESTER_PATH: /usr/bin/theharvester
BEEF_PATH: /usr/bin/beef-xss

[ADDITIONAL_ATTACKS]
ENABLE_KEYLOGGING: 1

[WEB]
ENABLE_HOST_BASED_VHOSTS: 1
DEFAULT_WEB_PORT: 80
VHOST_PORT_MIN: 8000
VHOST_PORT_MAX: 9000
```

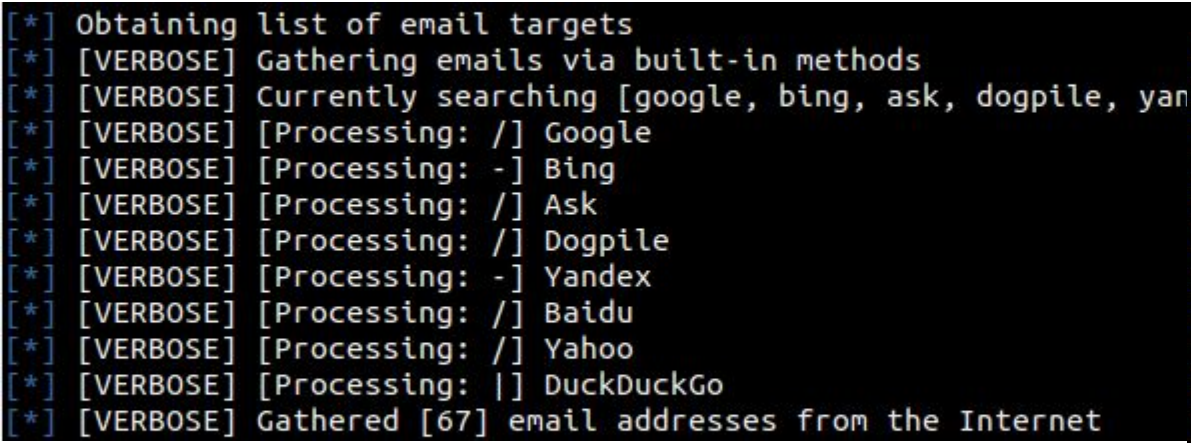
SPF - Standard Phishing Process



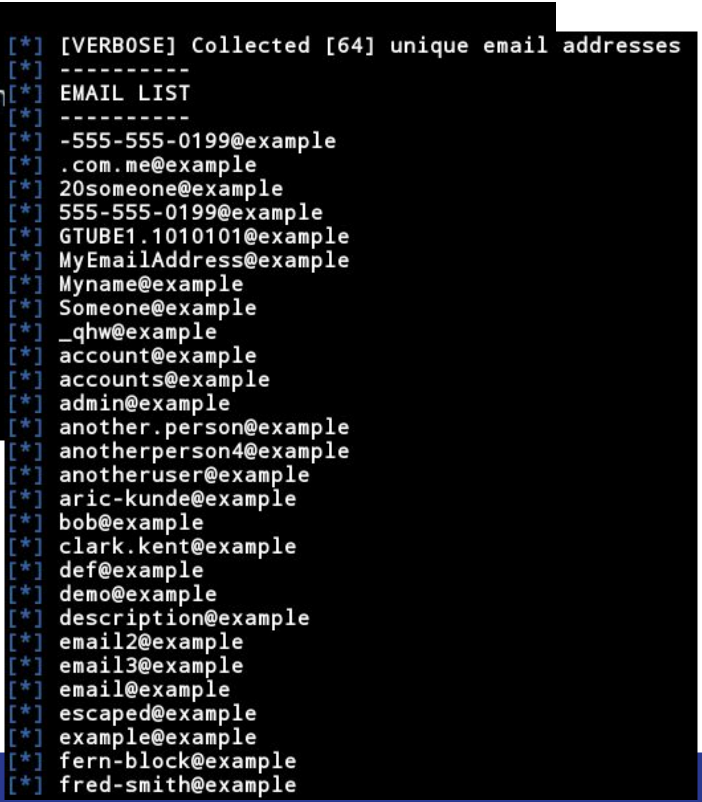
SPF - Reconnaissance

- Searches online search engines like Google, Bing, and DuckDuckGo
- Can use external tools such as theHarvester

SPF - Identifying Potential Targets



```
[*] Obtaining list of email targets
[*] [VERBOSE] Gathering emails via built-in methods
[*] [VERBOSE] Currently searching [google, bing, ask, dogpile, yan
[*] [VERBOSE] [Processing: /] Google
[*] [VERBOSE] [Processing: -] Bing
[*] [VERBOSE] [Processing: /] Ask
[*] [VERBOSE] [Processing: /] Dogpile
[*] [VERBOSE] [Processing: -] Yandex
[*] [VERBOSE] [Processing: /] Baidu
[*] [VERBOSE] [Processing: /] Yahoo
[*] [VERBOSE] [Processing: |] DuckDuckGo
[*] [VERBOSE] Gathered [67] email addresses from the Internet
```



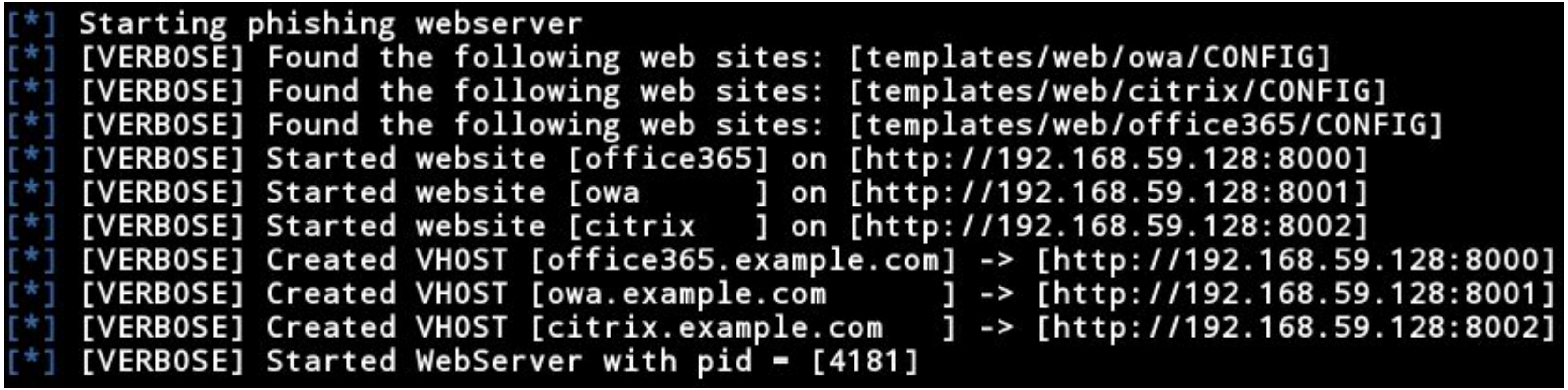
```
[*] [VERBOSE] Collected [64] unique email addresses
[*] ----------
[*] EMAIL LIST
[*] ----------
[*] -555-555-0199@example
[*] .com.me@example
[*] 20someone@example
[*] 555-555-0199@example
[*] GTUBE1.1010101@example
[*] MyEmailAddress@example
[*] Myname@example
[*] Someone@example
[*] _qhw@example
[*] account@example
[*] accounts@example
[*] admin@example
[*] another.person@example
[*] anotherperson4@example
[*] anotheruser@example
[*] aric-kunde@example
[*] bob@example
[*] clark.kent@example
[*] def@example
[*] demo@example
[*] description@example
[*] email2@example
[*] email3@example
[*] email@example
[*] escaped@example
[*] example@example
[*] fern-block@example
[*] fred-smith@example
```

github.com/tatanus/spf

SPF - Setup and Deploy

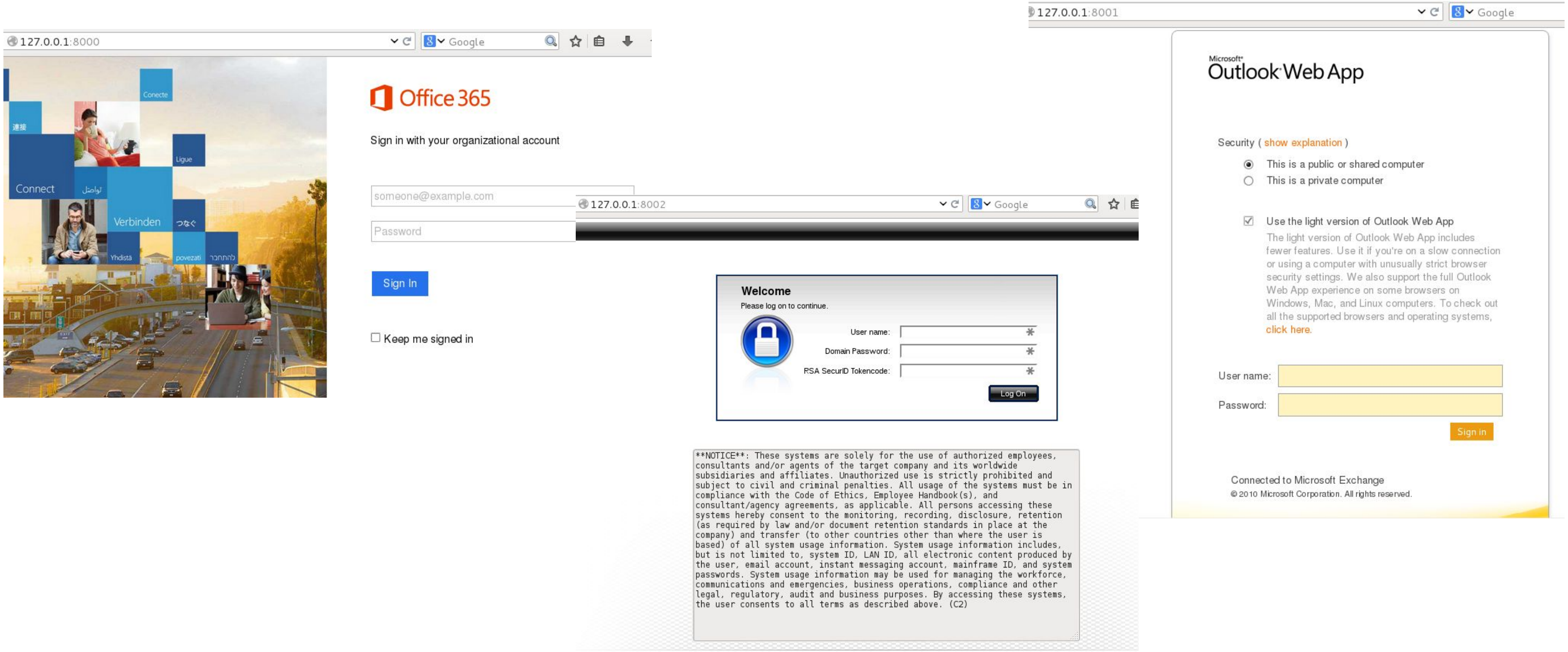
- Builtin web server based on Twisted python library
- Templated sample web sites with accompanying email templates
- Ability to dynamically clone additional login portals as needed

SPF - Loading Web Sites



```
[*] Starting phishing webserver
[*] [VERBOSE] Found the following web sites: [templates/web/owa/CONFIG]
[*] [VERBOSE] Found the following web sites: [templates/web/citrix/CONFIG]
[*] [VERBOSE] Found the following web sites: [templates/web/office365/CONFIG]
[*] [VERBOSE] Started website [office365] on [http://192.168.59.128:8000]
[*] [VERBOSE] Started website [owa      ] on [http://192.168.59.128:8001]
[*] [VERBOSE] Started website [citrix   ] on [http://192.168.59.128:8002]
[*] [VERBOSE] Created VHOST [office365.example.com] -> [http://192.168.59.128:8000]
[*] [VERBOSE] Created VHOST [owa.example.com      ] -> [http://192.168.59.128:8001]
[*] [VERBOSE] Created VHOST [citrix.example.com   ] -> [http://192.168.59.128:8002]
[*] [VERBOSE] Started WebServer with pid = [4181]
```

SPF - Web Sites



Office 365

Sign in with your organizational account

someone@example.com

Password

Sign In

□ Keep me signed in

Welcome

Please log on to continue.

User name:

Domain Password:

RSA SecurID Tokencode:

Log On

NOTICE: These systems are solely for the use of authorized employees, consultants and/or agents of the target company and its worldwide subsidiaries and affiliates. Unauthorized use is strictly prohibited and subject to civil and criminal penalties. All usage of the systems must be in compliance with the Code of Ethics, Employee Handbook(s), and consultant/agency agreements, as applicable. All persons accessing these systems hereby consent to the monitoring, recording, disclosure, retention (as required by law and/or document retention standards in place at the company) and transfer (to other countries other than where the user is based) of all system usage information. System usage information includes, but is not limited to, system ID, LAN ID, all electronic content produced by the user, email account, instant messaging account, mainframe ID, and system passwords. System usage information may be used for managing the workforce, communications and emergencies, business operations, compliance and other legal, regulatory, audit and business purposes. By accessing these systems, the user consents to all terms as described above. (C2)

Microsoft® Outlook Web App

Security (show explanation)

● This is a public or shared computer

○ This is a private computer

☑ Use the light version of Outlook Web App

The light version of Outlook Web App includes fewer features. Use it if you're on a slow connection or using a computer with unusually strict browser security settings. We also support the full Outlook Web App experience on some browsers on Windows, Mac, and Linux computers. To check out all the supported browsers and operating systems, click here.

User name:

Password:

Sign in

Connected to Microsoft Exchange

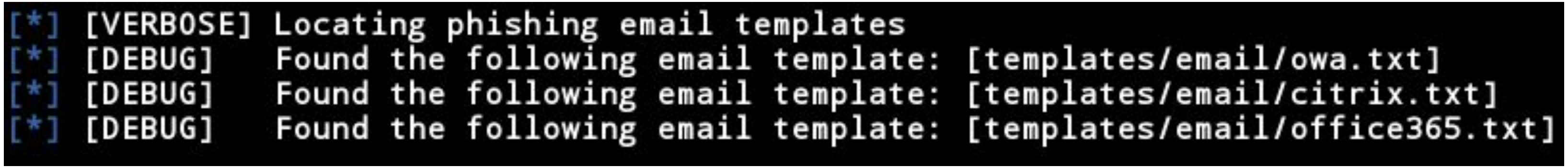
© 2010 Microsoft Corporation. All rights reserved.

github.com/tatanus/spf

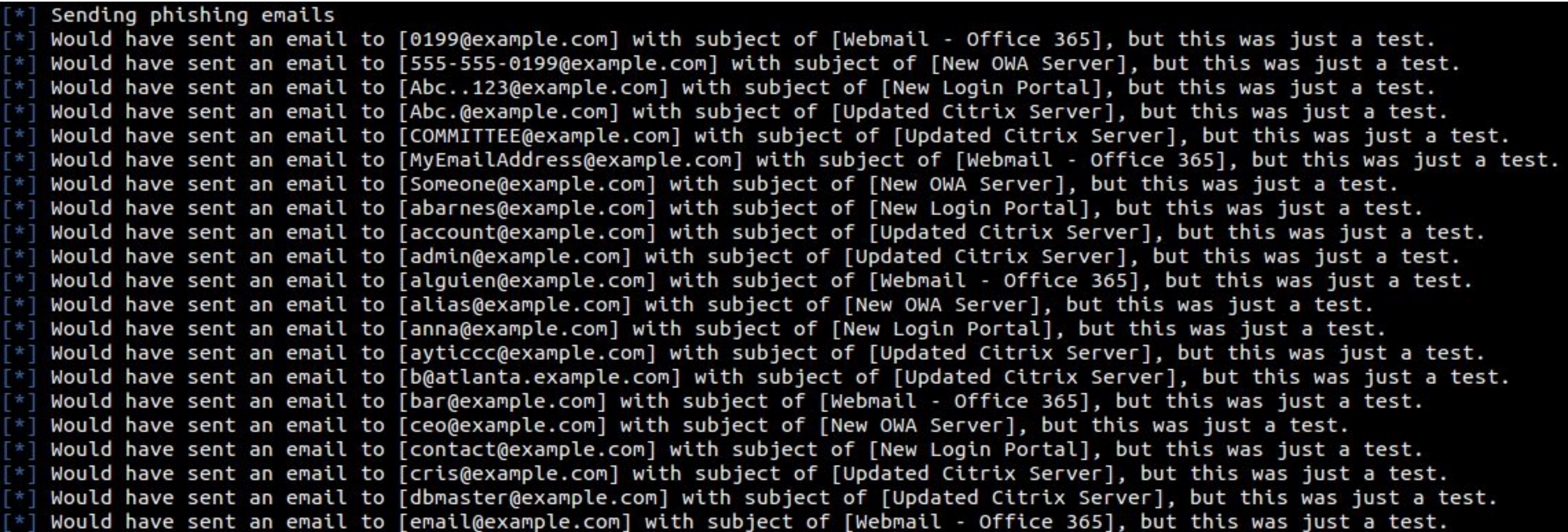
SPF - Sending Emails

- Can simulate sending of emails
- Sends emails in a round robin style alternating across all phishing sites
- Sends emails via 3rd party SMTP server or by connecting directly to the target's mail server

SPF - Sending Emails



```
[*] [VERBOSE] Locating phishing email templates
[*] [DEBUG]   Found the following email template: [templates/email/owa.txt]
[*] [DEBUG]   Found the following email template: [templates/email/citrix.txt]
[*] [DEBUG]   Found the following email template: [templates/email/office365.txt]
```



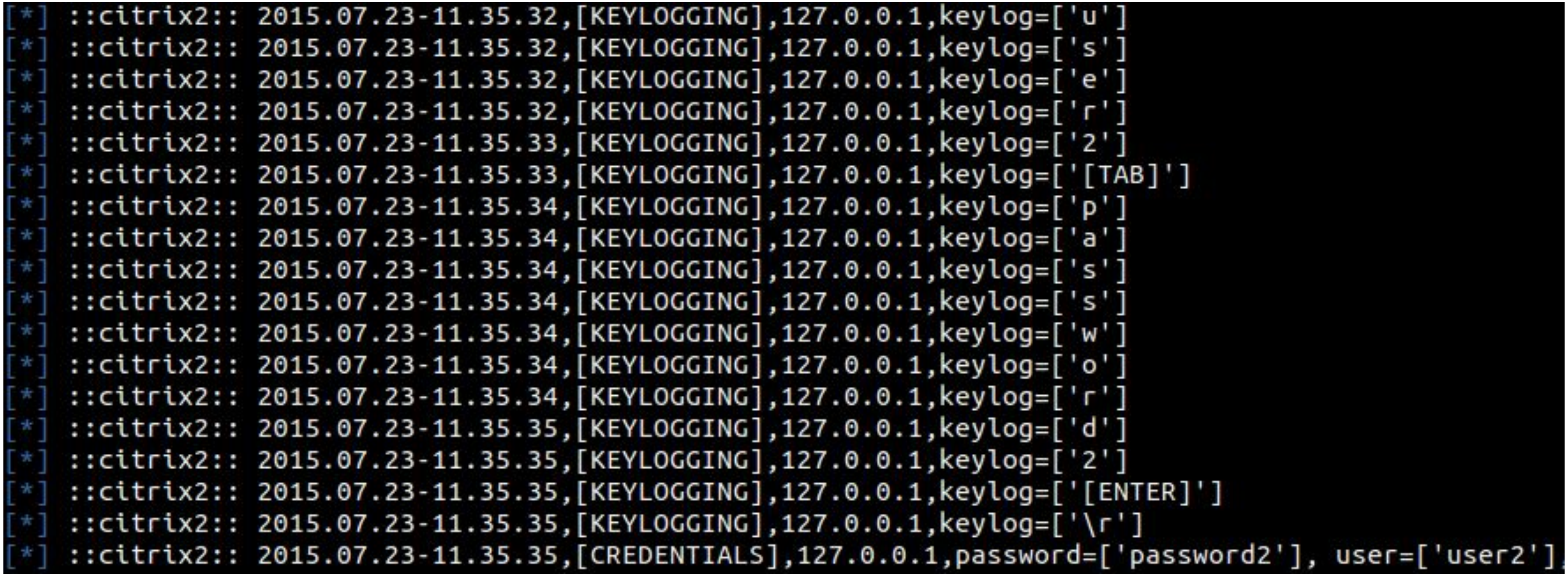
```
[*] Sending phishing emails
[*] Would have sent an email to [0199@example.com] with subject of [Webmail - Office 365], but this was just a test.
[*] Would have sent an email to [555-555-0199@example.com] with subject of [New OWA Server], but this was just a test.
[*] Would have sent an email to [Abc..123@example.com] with subject of [New Login Portal], but this was just a test.
[*] Would have sent an email to [Abc.@example.com] with subject of [Updated Citrix Server], but this was just a test.
[*] Would have sent an email to [COMMITTEE@example.com] with subject of [Updated Citrix Server], but this was just a test.
[*] Would have sent an email to [MyEmailAddress@example.com] with subject of [Webmail - Office 365], but this was just a test.
[*] Would have sent an email to [Someone@example.com] with subject of [New OWA Server], but this was just a test.
[*] Would have sent an email to [abarnes@example.com] with subject of [New Login Portal], but this was just a test.
[*] Would have sent an email to [account@example.com] with subject of [Updated Citrix Server], but this was just a test.
[*] Would have sent an email to [admin@example.com] with subject of [Updated Citrix Server], but this was just a test.
[*] Would have sent an email to [alguien@example.com] with subject of [Webmail - Office 365], but this was just a test.
[*] Would have sent an email to [alias@example.com] with subject of [New OWA Server], but this was just a test.
[*] Would have sent an email to [anna@example.com] with subject of [New Login Portal], but this was just a test.
[*] Would have sent an email to [ayticcc@example.com] with subject of [Updated Citrix Server], but this was just a test.
[*] Would have sent an email to [b@atlanta.example.com] with subject of [Updated Citrix Server], but this was just a test.
[*] Would have sent an email to [bar@example.com] with subject of [Webmail - Office 365], but this was just a test.
[*] Would have sent an email to [ceo@example.com] with subject of [New OWA Server], but this was just a test.
[*] Would have sent an email to [contact@example.com] with subject of [New Login Portal], but this was just a test.
[*] Would have sent an email to [cris@example.com] with subject of [Updated Citrix Server], but this was just a test.
[*] Would have sent an email to [dbmaster@example.com] with subject of [Updated Citrix Server], but this was just a test.
[*] Would have sent an email to [email@example.com] with subject of [Webmail - Office 365], but this was just a test.
```

SPF - Collect Responses & Post Exploitation

- Logs all access to the web sites
- Logs all form submissions
- Logs all key strokes

- Has ability to pillage email accounts

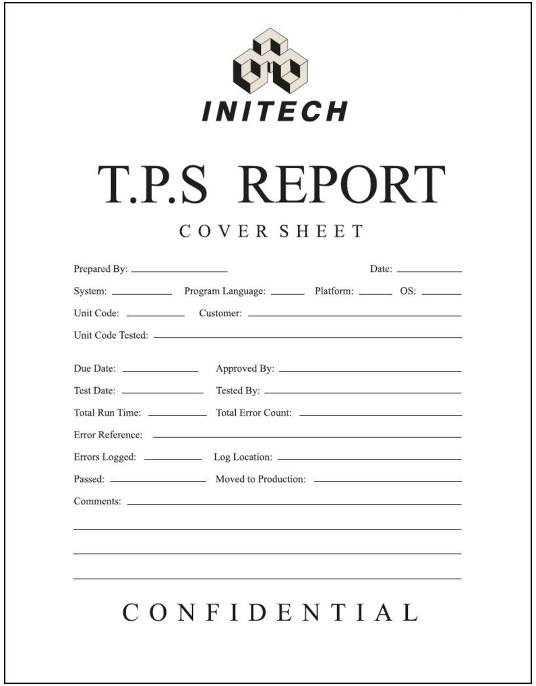
SPF - Collecting Results



```
[*] ::citrix2:: 2015.07.23-11.35.32,[KEYLOGGING],127.0.0.1,keylog=['u']
[*] ::citrix2:: 2015.07.23-11.35.32,[KEYLOGGING],127.0.0.1,keylog=['s']
[*] ::citrix2:: 2015.07.23-11.35.32,[KEYLOGGING],127.0.0.1,keylog=['e']
[*] ::citrix2:: 2015.07.23-11.35.32,[KEYLOGGING],127.0.0.1,keylog=['r']
[*] ::citrix2:: 2015.07.23-11.35.33,[KEYLOGGING],127.0.0.1,keylog=['2']
[*] ::citrix2:: 2015.07.23-11.35.33,[KEYLOGGING],127.0.0.1,keylog=['[TAB]']
[*] ::citrix2:: 2015.07.23-11.35.34,[KEYLOGGING],127.0.0.1,keylog=['p']
[*] ::citrix2:: 2015.07.23-11.35.34,[KEYLOGGING],127.0.0.1,keylog=['a']
[*] ::citrix2:: 2015.07.23-11.35.34,[KEYLOGGING],127.0.0.1,keylog=['s']
[*] ::citrix2:: 2015.07.23-11.35.34,[KEYLOGGING],127.0.0.1,keylog=['s']
[*] ::citrix2:: 2015.07.23-11.35.34,[KEYLOGGING],127.0.0.1,keylog=['w']
[*] ::citrix2:: 2015.07.23-11.35.34,[KEYLOGGING],127.0.0.1,keylog=['o']
[*] ::citrix2:: 2015.07.23-11.35.34,[KEYLOGGING],127.0.0.1,keylog=['r']
[*] ::citrix2:: 2015.07.23-11.35.35,[KEYLOGGING],127.0.0.1,keylog=['d']
[*] ::citrix2:: 2015.07.23-11.35.35,[KEYLOGGING],127.0.0.1,keylog=['2']
[*] ::citrix2:: 2015.07.23-11.35.35,[KEYLOGGING],127.0.0.1,keylog=['[ENTER]']
[*] ::citrix2:: 2015.07.23-11.35.35,[KEYLOGGING],127.0.0.1,keylog=['\r']
[*] ::citrix2:: 2015.07.23-11.35.35,[CREDENTIALS],127.0.0.1,password=['password2'], user=['user2']
```

Reports

- Saves all data and activity logs to assessment specific directory structure
- Generates simple HTML report



INITECH

T.P.S REPORT

COVER SHEET

Prepared By: ____________ Date: ________

System: ________ Program Language: _____ Platform: _____ OS: _____

Unit Code: ________ Customer: ________________

Unit Code Tested: ________________________

Due Date: __________ Approved By: ______________

Test Date: __________ Tested By: ______________

Total Run Time: ________ Total Error Count: __________

Error Reference: ________________________

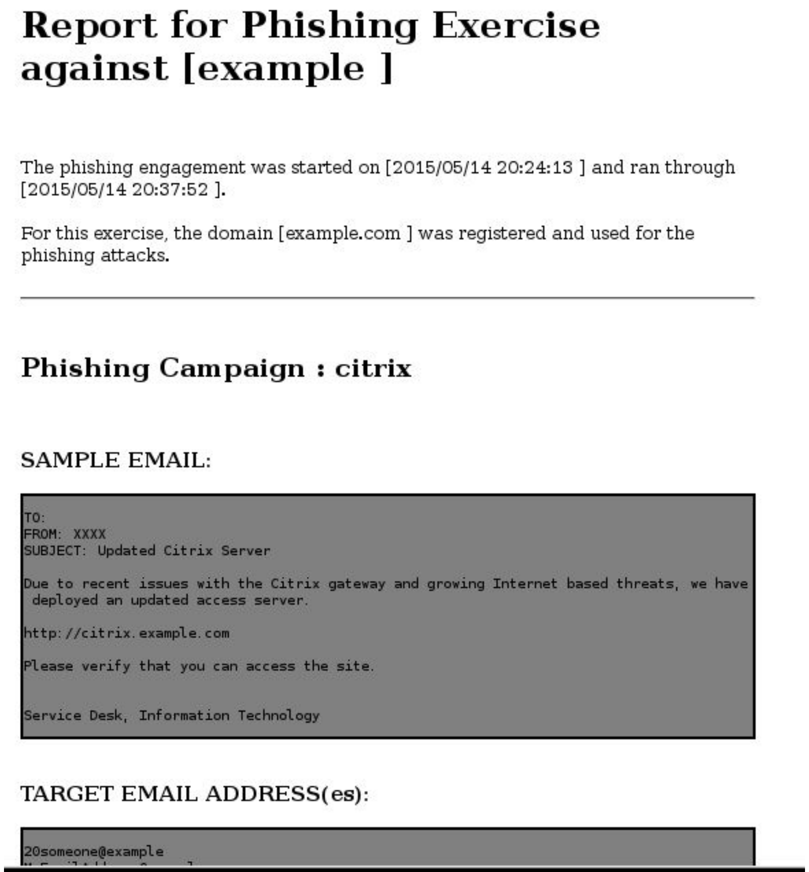
Errors Logged: ________ Log Location: ______________

Passed: __________ Moved to Production: __________

Comments: ________________________

CONFIDENTIAL

SPF - Simple Report



Report for Phishing Exercise against [example]

The phishing engagement was started on [2015/05/14 20:24:13] and ran through [2015/05/14 20:37:52].

For this exercise, the domain [example.com] was registered and used for the phishing attacks.

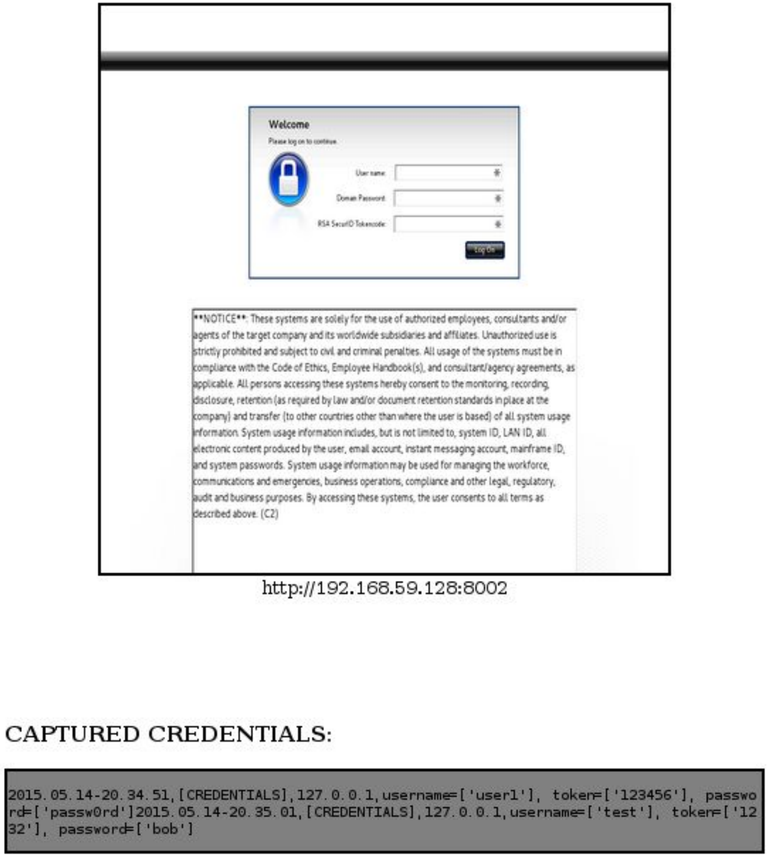
Phishing Campaign : citrix

SAMPLE EMAIL:

```
TO:
FROM: XXXX
SUBJECT: Updated Citrix Server

Due to recent issues with the Citrix gateway and growing Internet based threats, we have
 deployed an updated access server.

http://citrix.example.com

Please verify that you can access the site.


Service Desk, Information Technology
```

TARGET EMAIL ADDRESS(es):

```
20someone@example
```



NOTICE: These systems are solely for the use of authorized employees, consultants and/or agents of the target company and its worldwide subsidiaries and affiliates. Unauthorized use is strictly prohibited and subject to civil and criminal penalties. All usage of the systems must be in compliance with the Code of Ethics, Employee Handbook(s), and consultant/agency agreements, as applicable. All persons accessing these systems hereby consent to the monitoring, recording, disclosure, retention (as required by law and/or document retention standards in place at the company) and transfer (to other countries other than where the user is based) of all system usage information. System usage information includes, but is not limited to, system ID, LAN ID, all electronic content produced by the user, email account, instant messaging account, mainframe ID, and system passwords. System usage information may be used for managing the workforce, communications and emergencies, business operations, compliance and other legal, regulatory, audit and business purposes. By accessing these systems, the user consents to all terms as described above. (C2)

http://192.168.59.128:8002

CAPTURED CREDENTIALS:

```
2015.05.14-20.34.51,[CREDENTIALS],127.0.0.1,username=['user1'], token=['123456'], passwo
rd=['passw0rd']2015.05.14-20.35.01,[CREDENTIALS],127.0.0.1,username=['test'], token=['12
32'], password=['bob']
```

Advanced/Experimental Features

- Company Profiler
    - Identify which if any templates should be used
    - Dynamically generate new "target-specific" phishing sites
- Pillage
    - Verify credentials
    - Download attachments
    - Search for "SSN, password, login, etc…)

SPF Demo

We shall all now pray to the demo gods

Future Work/Features

- More external tools
- Better Profiling/Pillaging
- Fancy Reports
- Incorporate SSL (possibly via *https://letsencrypt.org/*).

- Suggestions?

A HUGE Thank You to:

Recon-ng - Tim Tomes (lanmaster53)

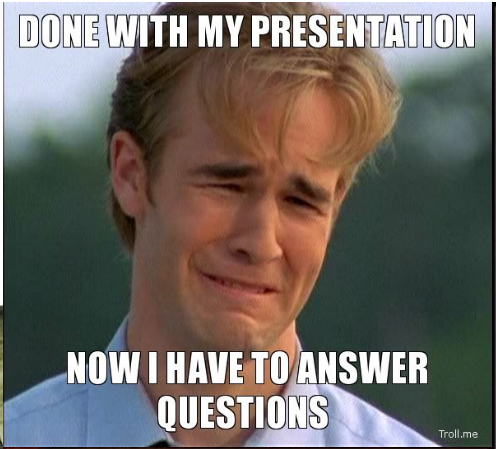
BeEF - Wade Alcorn

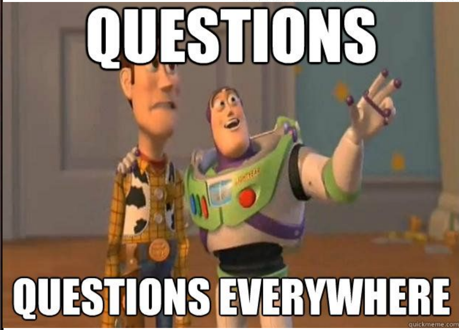
theHarvester - Christian Martorella

Social Engineering Toolkit - Dave Kennedy

Morning Catch - Raphael Mudge

Thank You!





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