

EUROPYTHON  
2016

Bilbao, 17-24 July

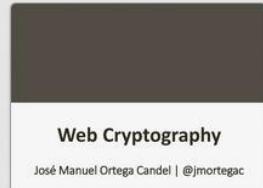


# Ethical hacking with Python tools

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# <https://speakerdeck.com/jmortega>



 <p>Testing Android Security extended Nov 30, 2015 by speakerOrtega</p>	 <p>Scraping the Web José Manuel Ortega @jmortegac Nov 30, 2015 by speakerOrtega</p>	 <p>Python Comparing ORM José manuel ortega   @jmortegac Pycones 2015 Nov 22, 2015 by speakerOrtega</p>
 <p>Python Seguridad &amp; Criptografía José Manuel Ortega   @jmortegac Nov 21, 2015 by speakerOrtega</p>	 <p>Seguridad en dispositivos móviles José Manuel Ortega @jmortegac Sep 24, 2015 by speakerOrtega</p>	 <p>Python Cryptography &amp; Security José Manuel Ortega   @jmortegac Jul 22, 2015 by speakerOrtega</p>
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- Modules(Sockets,Requests,BeautifulSoup,Shodan)
- Analysis metadata
- Port scanning & Checking vulnerabilities
- Advanced tools
- Pentesting-tool

# Python Pentesting



- Multi platform
- Prototypes and proofs of concept(POC)
- Many tools and libraries focused on security
- OSINT and Pentesting tools
- Very good documentation

# Python Pentesting



**sqlmap**

Automatic SQL injection and database takeover tool

## Introduction

sqlmap is an open source penetration testing tool for automatically detecting and exploiting SQL injection flaws and taking over of databases. It features a wide range of niche features for the ultimate penetration testing including: fingerprinting, over data fetching from the database, executing OS commands on the operating system via os module.



**SocialEngineer**  
T O O L k i t

# http://sparta.secforce.com/

The screenshot shows the SPARTA 1.0 (BETA) interface. The title bar reads "SPARTA 1.0 (BETA) - untitled - /root/Desktop/". The main window has a "Scan" tab selected in the top navigation bar.

**Hosts View:** Shows a list of hosts with their OS and IP address. The host "10.0.0.12" is selected and highlighted in blue.

OS	Host
?	10.0.0.0
?	10.0.0.1
Linux	10.0.0.12
?	10.0.0.50
Windows	10.0.0.121
?	10.0.0.154
?	10.0.0.222

**Services View:** Shows a table of open services on the selected host (10.0.0.12). The port 80 (HTTP) is currently selected.

Port	Protocol	State	Name	Version
21	tcp	open	ftp	vsftpd 2.3.4
22	tcp	open	ssh	OpenSSH 4.7p1 Debian 8ubuntu1 (protocol 2....)
23	tcp	open	telnet	Linux telnetd
25	tcp	open	smtp	Postfix smtpd
53	tcp	open	domain	ISC BIND 9.4.2
80	tcp	open	http	Apache httpd 2.2.8 ((Ubuntu) DAV/2)
111	tcp	open	rpcbind	2 (RPC #100000)
137	udp	open	s-ns	Microsoft Windows XP netbios-ssn
139	tcp	open	share	Samba cbind 3.0.22-1 (workgroup: WORKGROUP)

A context menu is open over the port 80 row, listing options: "Open with netcat", "Open with telnet", "Send to Brute", "Open in browser", "Take screenshot", "Grab banner", "Launch dirbuster", "Launch webslayer", "Run nikto", "Run nmap (scripts) on port", and "Run sslscan".

**Log View:** Shows the progress of various tools. The "nikto (8180/tcp)" tool is currently running.

Progress	Tool
[Progress Bar]	x11screen (6000/tcp)
[Progress Bar]	nikto (8180/tcp)
[Progress Bar]	x11screen (6000/tcp)

**Bottom Status Bar:** Displays the current time as 015 14:45:18 and the status as "Finished" for all listed tasks.

# The Harvester



Usage: theharvester options

```
-d: Domain to search or company name
-b: data source: google, googleCSE, bing, bingapi, pgp, linkedin,
      google-profiles, jigsaw, twitter, googleplus, all

-s: Start in result number X (default: 0)
-v: Verify host name via dns resolution and search for virtual hosts
-f: Save the results into an HTML and XML file
-n: Perform a DNS reverse query on all ranges discovered
-c: Perform a DNS brute force for the domain name
-t: Perform a DNS TLD expansion discovery
-e: Use this DNS server
-l: Limit the number of results to work with(bing goes from 50 to 50 results,
-h: use SHODAN database to query discovered hosts
      google 100 to 100, and pgp doesn't use this option)
```

Examples:

```
theHarvester.py -d microsoft.com -l 500 -b google
theHarvester.py -d microsoft.com -b pgp
theHarvester.py -d microsoft -l 200 -b linkedin
theHarvester.py -d apple.com -b googleCSE -l 500 -s 300
```

# The Harvester

```
python theHarvester.py -d nasa.gov -l 500 -b google
```

```
[+] Searching in Google:  
    Searching 0 results...  
    Searching 100 results...  
    Searching 200 results...  
    Searching 300 results...  
    Searching 400 results...  
    Searching 500 results...  
  
[+] Emails found:  
-----  
mobile@mail.nasa.gov  
robert.j.gutro@mail.nasa.gov  
  
[+] Hosts found in search engines:  
-----  
[-] Resolving hostnames IPs...  
87.248.214.97:www.nasa.gov  
198.117.0.121:mail.nasa.gov  
198.116.65.32:www.hq.nasa.gov  
87.248.214.97:www.jsc.nasa.gov  
129.164.179.249:modis.gsfc.nasa.gov  
192.68.196.38:eol.jsc.nasa.gov  
69.58.188.49:go.nasa.gov  
137.78.99.24:www.jpl.nasa.gov  
54.192.61.72:mars.jpl.nasa.gov  
198.116.65.32:oiir.hq.nasa.gov  
128.183.4.33:data.giss.nasa.gov  
128.183.4.33:pubs.giss.nasa.gov  
198.118.248.108:sohowww.nascom.nasa.gov  
169.154.198.218:iowa.ccmc.gsfc.nasa.gov  
128.183.20.84:space-geodesy.nasa.gov
```

# W3AF



w3af - Web Application Attack and Audit Framework

Profiles Edit View Tools Configuration Help

Scan config Log Results Exploit

Profiles

- empty\_profile
- OWASP\_TOP10
- audit\_high\_risk
- bruteforce
- fast\_scan
- full\_audit
- full\_audit\_manual\_disc
- sitemap
- web\_infrastructure

Target: Insert the target URL here

Plugin Active

- audit
- bruteforce
- discovery
- evasion
- grep
- mangle

Start

Use all the available techniques in w3af to fingerprint the remote Web infrastructure.

Plugin Active

- output

0 0 0

The screenshot shows the W3AF application window. The title bar reads "w3af - Web Application Attack and Audit Framework". The menu bar includes "Profiles", "Edit", "View", "Tools", "Configuration", and "Help". Below the menu is a toolbar with icons for profile management, file operations, and various tools. The main interface has tabs for "Scan config", "Log", "Results", and "Exploit", with "Scan config" selected. On the left, a "Profiles" list contains items like "empty\_profile", "OWASP\_TOP10", and "web\_infrastructure" (which is highlighted). In the center, there's a "Target" field with placeholder text "Insert the target URL here" and a "Start" button. To the right, a large text area says "Use all the available techniques in w3af to fingerprint the remote Web infrastructure." Below this are two tables for selecting attack plugins. The top table lists "audit", "bruteforce", "discovery", "evasion", "grep", and "mangle" with checkboxes for "Active". The bottom table shows "output" with a checkbox for "Active". At the bottom of the window, there are status indicators for errors, warnings, and logs, each showing a count of 0.

# Tools



- Scapy
  - Capturing and analysing network packets
- FiMap
  - Detecting RFI/LFI vulnerabilities
- XSScrapy
  - Detecting XSS vulnerabilities

# Sockets Port scan



```
import socket  
  
#TCP  
sock = socket(socket.AF_INET,socket.SOCK_STREAM)  
result = sock.connect_ex(('127.0.0.1',80))  
if result == 0:  
    print "Port is open"  
else:  
    print "Port is filtered"
```

# Sockets Port scan



```
# Port Scanner
from socket import *
ip=raw_input("Enter IP to scan : ")
start=input("Enter starting port number : ")
end=input("Enter ending port number : ")
print "Scanning IP: " , ip
for port in range(start,end):
    print "Testing port "+str(port)+"...."
    s=socket(AF_INET, SOCK_STREAM)
    s.settimeout(5)
    if(s.connect_ex((ip,port))==0):
        print "Port " , port, "is open"
    s.close()
print "Scanning completed !! "
```

# Imports socket module  
# Asks user to enter IP  
# Asks user to enter start port  
# Asks user to enter end port  
# For loop from starting port to end port  
# Creates a socket s  
# set timeout  
# If connection to port is successful  
# Prints open port  
# Closes socket s

# Socket resolving IP/domain



```
import socket
print(socket.gethostbyaddr("136.243.32.71"))
print(socket.gethostbyname("ep2016.europython.eu"))
```

```
('cloud1.europython.io', [], ['136.243.32.71'])
136.243.32.71
```

# Banner server



```
sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
sock.connect((parsed_args.target, 80))

http_get = b"GET / HTTP/1.1\nHost: "+parsed_args.target+"\n\n"
data = ''
try:
    sock.sendall(http_get)
    data = sock.recvfrom(1024)
    print data
except socket.error:
    print ("Socket error", socket(errno))
finally:
    print("closing connection")
    sock.close()

strdata = data[0]
# looks like one long line so split it at newline into multiple strings
headers = strdata.splitlines()
# use regular expression library to look for the one line we like
for s in headers:
    if re.search('Server:', s):
        print(s)
```



# Requests



## Requests

Star 16,936

Requests is an elegant and simple HTTP library for Python, built for human beings.

Buy Requests Pro

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### Translations

[English](#)

[French](#)

[German](#)

[Japanese](#)

## Requests: HTTP for Humans

Release v2.9.1. ([Installation](#))

Requests is an [Apache2 Licensed](#) HTTP library, written in Python, for human beings.

Python's standard `urllib2` module provides most of the HTTP capabilities you need, but the API is thoroughly **broken**. It was built for a different time – and a different web. It requires an enormous amount of work (even method overrides) to perform the simplest of tasks.

Things shouldn't be this way. Not in Python.

```
>>> r = requests.get('https://api.github.com/user', auth=('user', 'pass'))
>>> r.status_code
200
>>> r.headers['content-type']
'application/json; charset=utf8'
>>> r.encoding
'utf-8'
>>> r.text
u'{"type": "User", ...}'
>>> r.json()
{u'private_gists': 419, u'total_private_repos': 77, ...}
```

See [similar code, without Requests](#).

Requests takes all of the work out of Python HTTP/1.1 – making your integration with web services seamless. There's no need to manually add query strings to your URLs, or to form-encode your POST data. Keep-alive and HTTP connection pooling are 100% automatic, powered by `urllib3`, which is embedded within Requests.

# Checking headers



```
response = requests.get("https://ep2016.europython.eu/", timeout=5)

print "Status code: "+str(response.status_code)

print "Headers response: "
for header, value in response.headers.items():
    print(header, '-->', value)

print "Headers request : "
for header, value in response.request.headers.items():
    print(header, '-->', value)
```

# Checking headers



```
Status code: 200
Headers response:
('Server', '-->', 'nginx')
('Date', '-->', 'Mon, 04 Jul 2016 12:30:59 GMT')
('Content-Type', '-->', 'text/html; charset=utf-8')
('Transfer-Encoding', '-->', 'chunked')
('Connection', '-->', 'keep-alive')
('Content-Language', '-->', 'en')
('Vary', '-->', 'Accept-Language, Cookie')
('X-Frame-Options', '-->', 'SAMEORIGIN')
('Set-Cookie', '-->', 'django_language=en; expires=Tue, 04-Jul-2017 12:30:59 GMT; Max-Age=31536000; Path=/')
('P3P', '-->', 'CP="ALL DSP COR PSAa PSDa OUR NOR ONL UNI COM NAU"')
('Strict-Transport-Security', '-->', 'max-age=31536000; includeSubdomains')
('Content-Encoding', '-->', 'gzip')
Headers request :
('Connection', '-->', 'keep-alive')
('Accept-Encoding', '-->', 'gzip, deflate')
('Accept', '-->', '*/*')
('User-Agent', '-->', 'python-requests/2.10.0')
```

# Requests



```
import requests
```

```
http_proxy = "http://10.10.10.10:3000"  
https_proxy = "https://10.10.10.10:3000"
```

```
proxyDict = {  
    "http" : http_proxy,  
    "https" : https_proxy  
}  
r = requests.get(url,proxies=proxyDict)
```

# Requests Authentication



```
import requests
encoded = base64.b64encode(user+':'+passwd)

response = requests.get(protectedURL, auth=(user,passwd))
```

```
import requests
from requests.auth import HTTPDigestAuth

response = requests.get(protectedURL, auth=HTTPDigestAuth(user, passwd))
```

# BeautifulSoup



```
from bs4 import BeautifulSoup

import requests

url = raw_input("Enter a website to extract the URL's from: ")

r = requests.get("http://" +url)

data = r.text

soup = BeautifulSoup(data,"lxml")

for link in soup.find_all('a'):
    print(link.get('href'))
```

# Internal/external links



```
#Retrieves a list of all Internal links found on a page
def getInternalLinks(bsObj, includeUrl):
    internalLinks = []
    #Finds all links that begin with a "/"
    for link in bsObj.findAll("a", href=re.compile("^(/|.*"+includeUrl+" ")")):
        if link.attrs['href'] is not None:
            if link.attrs['href'] not in internalLinks:
                internalLinks.append(link.attrs['href'])
    return internalLinks

#Retrieves a list of all external links found on a page
def getExternalLinks(bsObj, excludeUrl):
    externalLinks = []
    #Finds all links that start with "http" or "www" that do
    #not contain the current URL
    for link in bsObj.findAll("a", href=re.compile("(http|www)((?!"+excludeUrl+
        if link.attrs['href'] is not None:
            if link.attrs['href'] not in externalLinks:
                externalLinks.append(link.attrs['href'])
    return externalLinks
```

# Internal/external links



## External links

---

<https://ep2016.europython.eu/p3/schedule/ep2016/>  
<https://ep2016.europython.eu/p3/schedule/ep2016/list/>  
<http://djangogirls.org/europython2016/>  
<https://ep2016.europython.eu/p3/ep2016/whos-coming?speaker-on>  
<http://europython.tv/>  
<http://pyss.org/>  
<http://www.europython-society.org/>  
<https://ep2015.europython.eu/>  
<https://ep2014.europython.eu/>  
<https://ep2013.europython.eu/ep2013/>  
<https://ep2013.europython.eu/ep2012/>  
<http://www.europython-society.org/europython>  
<http://blog.europython.eu/>  
<https://twitter.com/europython>  
<https://www.facebook.com/europython>  
<https://mail.python.org/mailman/listinfo/europython-announce>  
<https://www.python.org/psf-landing/>  
<http://www.bilbao.net/>  
<https://sites.google.com/site/bbvagroupeuropython/home>  
<https://hired.com/>  
<http://www.intel.com/>  
<https://www.microsoft.com/>  
<http://www.ehu.eus/>

## Internal links

---

</en/>  
</en/registration/>  
</registration/>  
</en/registration/volunteers/>  
</en/registration/financial-aid/>  
</en/registration/tips-for-attendees/>  
</en/events/>  
</en/events/keynotes/>  
<https://ep2016.europython.eu/p3/schedule/ep2016/>  
<https://ep2016.europython.eu/p3/schedule/ep2016/list/>  
</en/events/conference-app/>  
</en/events/sessions/>  
</en/events/sprints/>  
</en/events/pydata/>  
</en/events/beginners-day/>  
</en/events/maker-area/>  
</en/events/social-event/>  
</en/speakers/>

# Extract images and documents



```
def scrapingImagesPdf(self,url):
    print("\nScraping the server for images and pdfs.... "+ url)

    try:
        response = requests.get(url)
        parsed_body = html.fromstring(response.text)

        # Grab links to all images
        images = parsed_body.xpath('//img/@src')

        # Grab links to all pdf
        pdfs = parsed_body.xpath('//a[@href[contains(., ".pdf")]]/@href')

    except Exception,e:
        print e
        print "Error to connect with " + url + " for scraping the site";
```

# Scrapy



## Scrapy

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# Scrapy

An open source and collaborative framework  
for extracting the data you need from websites.  
In a fast, simple, yet extensible way.

[pypi v1.0.4](#) [downloads 43k/month](#) [wheel yes](#) [PY3 72%](#) [coverage 82%](#)

Install the latest version of Scrapy

Scrapy 1.0

\$ pip install scrapy

[PyPI](#) [Conda](#) [APT](#) [Source](#)

Build and run your  
**web spiders**

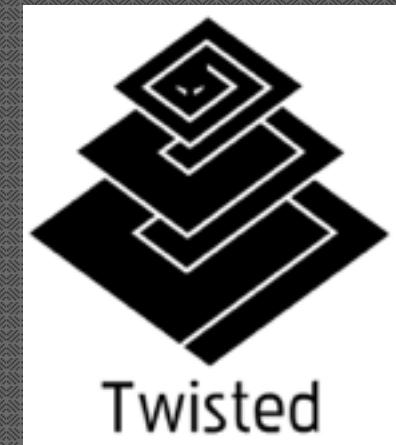
Terminal

```
$ pip install scrapy
$ cat > myspider.py <<EOF
import scrapy

class BlogSpider(scrapy.Spider):
    name = 'blogspider'
    start_urls = ['http://blog.scrapinghub.com']

    def parse(self, response):
        for url in response.css('ul li a::attr("href)').re(r'.*\d\d\d\d\d\d$'):
            yield scrapy.Request(response.urljoin(url), self.parse_titles)

    def parse_titles(self, response):
        for post_title in response.css('div.entries > ul > li a::text').extract():
            yield {'title': post_title}
EOF
$ scrapy runspider myspider.py
```



# Web Scraping



## Scraping the Web the workshop



José Manuel Ortega  
@jmortegac

{codemotion}

Python tools for  
webscraping

José Manuel Ortega  
@jmortegac



# Shodan



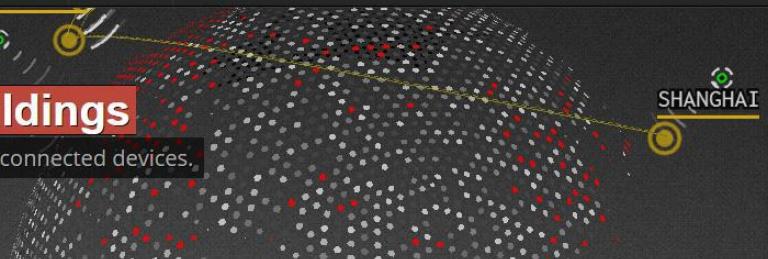
Shodan Developers Book View All...

 tomcat 

Explore Downloads Reports Enterprise Access Contact Us

**The search engine for Buildings**  
Shodan is the world's first search engine for Internet-connected devices.

Create a Free Account Getting Started



## Welcome

Shodan lets you search for devices that are connected to the Internet. And a Shodan account means you get more access, more features and the ability to check out the latest developments.



### More Results

With a free Shodan account you can access more results!



### Developer API

The Shodan API makes it easy to access the data from within your own scripts.



### New Filters

Once you're logged in you have access to a lot more filters that help you find exactly what you're looking for.

### Sign in with Shodan

Username

Password

Log in

[Forgot your password?](#)

### Sign in with



TWITTER



FACEBOOK



Google



WINDOWS LIVE

# https://developer.shodan.io



The screenshot shows the documentation for the shodan-python library. The top navigation bar includes links for "shodan-python", "latest", and "Search docs". The main content area is titled "Getting Started" and contains sections for "Installation", "Connect to the API", "Searching Shodan", and "Looking up a host". Below this, there are sections for "Basic Shodan Search", "Collecting Summary Information using Facets", and "Access SSL certificates in Real-Time". The "Installation" section is currently selected.

## Installation

To get started with the Python library for Shodan, first make sure that you've received your [API key](#). Once that's done, install the library via the cheeseshop using:

```
$ easy_install shodan
```

Or if you already have it installed and want to upgrade to the latest version:

```
$ easy_install -U shodan
```

It's always safe to update your library as backwards-compatibility is preserved. Usually a new version of the library simply means there are new methods/ features available.

## Connect to the API

The first thing we need to do in our code is to initialize the API object:

```
import shodan

SHODAN_API_KEY = "insert your API key here"

api = shodan.Shodan(SHODAN_API_KEY)
```

## Searching Shodan

Now that we have our API object all good to go, we're ready to perform a search:

# Shodan



```
import shodan
```

```
SHODAN_API_KEY = "insert your API key here"  
api = shodan.Shodan(SHODAN_API_KEY)
```

```
# Lookup the host  
host = api.host(hostname)  
  
# Print general info  
print """  
    IP: %s  
    Organization: %s  
    Operating System: %s  
""" % (host['ip_str'], host.get('org', 'n/a'), host.get('os', 'n/a'))  
  
# Print all banners  
for item in host['data']:  
    print """Port: %s  
    Banner: %s""" % (item['port'], item['data'])
```

# Shodan



Port: 21

```
Banner: 220 ProFTPD 1.3.5a Server (ProFTPD) [192.168.55.76]
550 SSL/TLS required on the control channel
550 SSL/TLS required on the control channel
211-Features:
PBSZ
AUTH TLS
MFF modify;UNIX.group;UNIX.mode;
REST STREAM
MLST modify*;perm*;size*;type*;unique*;UNIX.group*;UNIX.mode*;UNIX.owner*;
UTF8
LANG en-US*
EPRT
EPSU
MDTM
SSCN
TUFS
MFMT
SIZE
PROT
CCC
```

# <https://www.shodan.io/host/136.243.32.71>



136.243.32.71 cloud1.europython.io

Country	Germany
Organization	Server Block
ISP	Server Block
Last Update	2016-07-03T12:32:39.991534
Hostnames	cloud1.europython.io

## Ports

22 25 80

## Services

22  
tcp  
ssh

SSH-2.0-OpenSSH\_6.6.1p1 Ubuntu-2ubuntu2.6  
Key type: ssh-rsa  
Key: AAAAB3NzaC1yc2EAAAQABAAQDnSrmXi58UwrH31CZ2V/tOSQWeGRNtFhq7YyfSC/g8kRXz  
m1Ldagq3kZQgTS3Qn2mPlaRvXeOkp1Iu/CeGvNHiAYNii6m8Gt+uLqZPToSrveGR8ngGju9y596Z  
hy11j21Lp79R2pP2mMKNtwevL5MTrqZyHnP3JmmuszxWc95E3715q7zkhd9SVpBCwiEymMzrSk0N  
7/Kfgx07DyAxNRLQo07VH+yArTk8ci+YKeORDp6xrufG/VTBIDNxg4yoDUzxvC1zPtOh/6Cz+o  
xg60HS+13xGRNoCrBbK1CsIMndRGycUUmnpB7od1H0W1/+0zSw7zLDN1x+DLIqnNZnWx  
Fingerprint: 18:73:8e:78:d0:f5:d4:37:d4:a8:fc:43:be:38:b7

### Kex Algorithms:

curve25519-sha256@libssh.org  
ecdh-sha2-nistp256  
ecdh-sha2-nistp384  
ecdh-sha2-nistp521  
diffie-hellman-group-exchange-sha256  
diffie-hellman-group-exchange-sha1  
diffie-hellman-group14-sha1  
diffie-hellman-group1-sha1

### Server Host Key Algorithms:

ssh-rsa  
ssh-dss  
ecdsa-sha2-nistp256

# Shodan



----

Search

```
(u'info', '-->', u'protocol 2.0')
(u'hash', '-->', -107126894)
(u'ip', '-->', 2297634887L)
(u'isp', '-->', u'Server Block')
(u'transport', '-->', u'tcp')
(u'ip_str', '-->', u'136.243.32.71')
(u'data', '-->', u'SSH-2.0-OpenSSH_6.6.1p1 Ubuntu-2ubuntu2.6\nKey type: ssh-rsa\nKey: AAAAB3NzaC1yc2EAAAQABAAQDnSrmXiS8Uwr
vNHiAYNii6mBGt+uLqZPToSrvGR8ngGjU9y59GZ\nhy11j21Lp79R2p2mMKNtwevL5MTrqZyHnSPJMMuszxWc95E37i5q7zkh
d9SUpBCwiEYmMzrSXoN\n7/KfGx07
60HS+13xGRNoCrBbK1Cs1MNdRGycUUmnpB7od1HOW1/+0zSW7zLDN1x+DLIQnNznlw\nFingerprint: 18:73:8e:78:d0:a0:f5:d4:37:d4:a8:fc:43:be:38:b7
6\n\tecdh-sha2-nistp384\n\tecdh-sha2-nistp521\n\tdiffie-hellman-group-exchange-sha256\n\tdiffie-hellman-group-exchange-sha1\n\t
Key Algorithms:\n\tssh-rsa\n\tssh-dss\n\tsshdkey\n\ted25519\n\tEncryption Algorithms:\n\taes128-ctr\n\ttaes192-ctr
taes256-gcm@openssh.com\n\tchacha20-poly1305@openssh.com\n\ttaes128-cbc\n\t3des-cbc\n\tblowfish-cbc\n\tcast128-cbc\n\ttaes192-cbc
s:\n\tthmac-md5-etm@openssh.com\n\tthmac-sha1-etm@openssh.com\n\tumac-64-etm@openssh.com\n\tumac-128-etm@openssh.com\n\tthmac-sha2-
etm@openssh.com\n\tthmac-sha1-96-etm@openssh.com\n\tthmac-md5-96-etm@openssh.com\n\tthmac-md5\n\tthmac-sha1\n\tumac-64@openssh.com\n\t
0\n\tthmac-ripemd160@openssh.com\n\tthmac-sha1-96\n\tthmac-md5-96\n\tCompression Algorithms:\n\tnone\n\tzlib@openssh.com\n\t
)
(u'port', '-->', 22)
(u'hostnames', '-->', [u'cloud1.europython.io'])
(u'location', '-->', {u'city': None, u'region_code': None, u'area_code': None, u'longitude': 9.0, u'country_code3': u'DEU', u'la
    u'DE', u'country_name': u'Germany'})
(u'timestamp', '-->', u'2016-07-03T12:32:39.991534')
(u'domains', '-->', [u'europython.io'])
(u'org', '-->', u'Server Block')
(u'os', '-->', None)
(u'_shodan', '-->, {u'crawler': u'122dd688b363c3b45b0e7582622da1e725444808', u'options': {}, u'module': u'ssh', u'id': None})
(u'opts', '-->', {u'ssh': {u'fingerprint': u'18:73:8e:78:d0:a0:f5:d4:37:d4:a8:fc:43:be:38:b7', u'mac': u'umac-64@libssh.org', u'cipher': u'31C22U/tOSQWeGRNtFhq7YyfSC/gBkRXz/nm1Ldagq3kZQgTS3Qn2mPlaRvXe0Kp1Iu/CeGuNHiAYNii6mBGt+uLqZPToSrvGR8ngGjU9y59GZ\nhy11j21Lp79R2p2mMKNtwevL5MTrqZyHnSPJMMuszxWc95E37i5q7zkh
d9SUpBCwiEYmMzrSXoN\n7/KfGx07
60HS+13xGRNoCrBbK1Cs1MNdRGycUUmnpB7od1HOW1/+0zSW7zLDN1x+DLIQnNznlw\nFingerprint: 18:73:8e:78:d0:a0:f5:d4:37:d4:a8:fc:43:be:38:b7
6\n\tecdh-sha2-nistp384\n\tecdh-sha2-nistp521\n\tdiffie-hellman-group-exchange-sha256\n\tdiffie-hellman-group-exchange-sha1\n\t
Key Algorithms:\n\tssh-rsa\n\tssh-dss\n\tsshdkey\n\ted25519\n\tEncryption Algorithms:\n\taes128-ctr\n\ttaes192-ctr\n\t
aes256-gcm@openssh.com\n\tchacha20-poly1305@openssh.com\n\ttaes128-cbc\n\t3des-cbc\n\tblowfish-cbc\n\tcast128-cbc\n\ttaes192-cbc
s:\n\tthmac-md5-etm@openssh.com\n\tthmac-sha1-etm@openssh.com\n\tumac-64-etm@openssh.com\n\tumac-128-etm@openssh.com\n\tthmac-sha2-
etm@openssh.com\n\tthmac-sha1-96-etm@openssh.com\n\tthmac-md5-96-etm@openssh.com\n\tthmac-md5\n\tthmac-sha1\n\tumac-64@openssh.com\n\t
0\n\tthmac-ripemd160@openssh.com\n\tthmac-sha1-96\n\tthmac-md5-96\n\tCompression Algorithms:\n\tnone\n\tzlib@openssh.com\n\t
)
(u'languages': [u''], u'kex_algorithms': [u'curve25519-sha256@libssh.org', u'ecdh-sha2-nistp256', u'ecdh-sha2-nistp384
fi
e-hellman-group-exchange-sha1', u'diffie-hellman-group14-sha1', u'diffie-hellman-group1-sha1'], u'compression_algorithms': [u'com', u'hmac-sha1-etm@openssh.com', u'umac-64-etm@openssh.com', u'umac-128-etm@openssh.com', u'hmac-sha2-256-etm@openssh.com', u'
```

# Shodan



```
Port: 80
Banner: HTTP/1.1 404 Not Found
Server: nginx/1.4.6 (Ubuntu)
Date: Tue, 19 Jul 2016 19:11:33 GMT
Content-Type: text/html
Content-Length: 579
Connection: keep-alive

Port: 22
Banner: SSH-2.0-OpenSSH_6.6.1p1 Ubuntu-2ubuntu2.6
Key type: ssh-rsa
Key: AAAAB3NzaC1yc2EAAAQABAAQDnSrmXiS8UwrH31CZ2U/tOSQWeGRNtFhq7YyfSC/gBkRXz
mILdagq3kZQgTS3Qn2mPLaRvXe0kp1Iu/CeGvNHIAYNii6mBGt+uLqZPToSrvegR8ngGjU9y59GZ
hy1lj21Lp79R2pP2mMKNtewl5MTrqZyHnSPJMMuszxWc95E37i5q7zkhd9SUpBCwiEYmMzrSXoN
7/KfGx07DyAxWRLQo7uH+yArTk8ci+YKeR0RDp6xrufG/UTBIDNxG4yoDUzxc1zPt0h/6Cz+o
xg60HS+13xGRNoCrBbK1CsiMNdRGycUUmpB7od1H0W1/+0zSW7zLDN1x+DLIQnNZnWx
Fingerprint: 18:73:8e:78:d0:a0:f5:d4:37:d4:a8:fc:43:be:38:b7

Kex Algorithms:
    curve25519-sha256@libssh.org
    ecdh-sha2-nistp256
    ecdh-sha2-nistp384
    ecdh-sha2-nistp521
    diffie-hellman-group-exchange-sha256
    diffie-hellman-group-exchange-sha1
    diffie-hellman-group14-sha1
    diffie-hellman-group1-sha1

Server Host Key Algorithms:
    ssh-rsa
    ssh-dss
    ecdsa-sha2-nistp256
    ssh-ed25519

Encryption Algorithms:
    aes128-ctr
    aes192-ctr
    aes256-ctr
    arcfour256
    arcfour128
    aes128-qcm@openssh.com
```

# BuiltWith



- **pip install builtwith**
- `builtwith.parse('https://ep2016.europython.eu')`

```
>>> builtwith.parse("https://ep2016.europython.eu")
{'javascript-frameworks': [u'jQuery', u'Modernizr', u'jQuery UI'], 'web-servers': [u'Nginx']}
```

# Analysis metadata



```
from PyPDF2 import PdfFileReader, PdfFileWriter
import os

def printMeta():
    for dirpath, dirnames, files in os.walk("pdf"):
        for name in files:
            ext = name.lower().rsplit('.', 1)[-1]
            if ext in ['pdf']:
                print "[+] Metadata for file: %s" %(dirpath+os.path.sep+name)
                pdfFile = PdfFileReader(file(dirpath+os.path.sep+name, 'rb'))
                docInfo = pdfFile.getDocumentInfo()
                for metaItem in docInfo:
                    print '[+] ' + metaItem + ':' + docInfo[metaItem]
                print "\n"
```



```
[+] Metadata for file: pdf\python.pdf
[+] /Title:Guía de aprendizaje de Python
[+] /Author:Guido van Rossum, Fred L. Drake, Jr., editor
[+] /Producer:pdfTeX-0.13d
[+] /CreationDate:D:20001124213800
[+] /Creator:TeX
```

# Analysis metadata



```
from PIL.ExifTags import TAGS, GPSTAGS
from PIL import Image
import os

def get_exif_metadata(image_path):
    ret = {}
    image = Image.open(image_path)
    if hasattr(image, '_getexif'):
        exifinfo = image._getexif()
        if exifinfo is not None:
            for tag, value in exifinfo.items():
                decoded = TAGS.get(tag, tag)
                ret[decoded] = value
    decode_gps_info(ret)
    return ret
```

# Analysis metadata



```
Metadata: 42016 - Value: 2BF3A9E97BC886678DE12E6EB8835720
Metadata: YResolution - Value: (300, 1)
Metadata: ResolutionUnit - Value: 2
Metadata: Copyright - Value: Frank Noort
Metadata: Artist - Value: Frank Noort
Metadata: Make - Value: Canon
Metadata: GPSInfo - Value: {'Lat': 32.07874722222222, 'Lng': -131.467577777778}
Metadata: XResolution - Value: (300, 1)
Metadata: ExifOffset - Value: 146
Metadata: ExifVersion - Value: 0220
Metadata: DateTimeOriginal - Value: 2002:10:28 11:05:09
Metadata: Model - Value: Canon EOS-5
Metadata: DateTime - Value: 2008:03:09 22:00:01
Metadata: Software - Value: Adobe Photoshop CS2 Windows
```

# Port Scanning



# Python-nmap



- Automating port scanning
- Synchronous and asynchronous modes

```
import nmap
# Synchronous
nm = nmap.PortScanner()
# nm.scan('ip/range','port_list')
results = nm.scan('127.0.0.1', '22,25,80,443')
```

# NmapScanner



```
class NmapScanner:

    def __init__(self):
        self.nmsc = nmap.PortScanner()

    def nmapScan(self, host, port):
        try:
            print "Checking port " + port + " ...."
            self.nmsc.scan(host, port)

            # Command info
            print "[*] Execuing command: %s" % self.nmsc.command_line()
            self.state = self.nmsc[host]['tcp'][int(port)]['state']
            print " [+] " + host + " tcp/" + port + " " + self.state

        except Exception,e:
            print "Error to connect with " + host + " for port scanning"
            pass
```

# NmapScanner



for port in port\_list:

**NmapScanner().nmapScan(ip, port)**

```
python NmapScanner.py -target 192.168.56.101 -ports 21,22,23,24,25,80
```

```
Checking port 21 .....
[*] Execuing command: nmap -oX - -p 21 -sU 192.168.56.101
[+] 192.168.56.101 tcp/21 open
Checking port 22 .....
[*] Execuing command: nmap -oX - -p 22 -sU 192.168.56.101
[+] 192.168.56.101 tcp/22 open
Checking port 23 .....
[*] Execuing command: nmap -oX - -p 23 -sU 192.168.56.101
[+] 192.168.56.101 tcp/23 open
Checking port 24 .....
[*] Execuing command: nmap -oX - -p 24 -sU 192.168.56.101
[+] 192.168.56.101 tcp/24 closed
Checking port 25 .....
[*] Execuing command: nmap -oX - -p 25 -sU 192.168.56.101
[+] 192.168.56.101 tcp/25 open
Checking port 80 .....
[*] Execuing command: nmap -oX - -p 80 -sU 192.168.56.101
[+] 192.168.56.101 tcp/80 open
```

# NmapScanner Async



```
#Asynchronous
nm_async = nmap.PortScannerAsync()
def callback_result(host, scan_result):
    print '-----'
    print host, scan_result

nm_async.scan(hosts='192.168.1.0/30', arguments='-sP',
callback=callback_result)

while nm_async .still_scanning():
    print("Waiting >>>")
    nm_async.wait(2)
```

# NmapScanner Async



```
python NmapScannerAsync.py -target 192.168.56.101 -ports 21
```

```
Checking port 21 .....
[+] 192.168.56.101 tcp/21 open
Checking ftp port with nmap scripts.....
Checking ftp-anon.nse .....
Command linemap -oX - -A -sU -p21 --script ftp-anon.nse 192.168.56.101
Script ftp-anon --> Anonymous FTP login allowed (FTP code 230)
Checking ftp-bounce.nse .....
Checking ftp-brute.nse .....
Command linemap -oX - -A -sU -p21 --script ftp-brute.nse 192.168.56.101
Script ftp-brute -->
    Accounts:
        user:user - Valid credentials
    Statistics: Performed 1937 guesses in 602 seconds, average tps: 3
Checking ftp-libopie.nse .....
Checking ftp-proftpd-backdoor.nse .....
Checking ftp-vsftpd-backdoor.nse .....
Command linemap -oX - -A -sU -p21 --script ftp-vsftpd-backdoor.nse 192.168.56.101
Script ftp-vsftpd-backdoor -->
    VULNERABLE:
        vsFTPD version 2.3.4 backdoor
        State: VULNERABLE (Exploitable)
        IDs: OSVDB:73573 CUE:CUE-2011-2523
            vsFTPD version 2.3.4 backdoor, this was reported on 2011-07-04.
        Disclosure date: 2011-07-03
    Exploit results:
        Shell command: id
        Results: uid=0(root) gid=0(root)
    References:
        https://github.com/rapid7/metasploit-framework/blob/master/modules/exploits/unix/ftp/vsftpd_234_backdoor.rb
        http://osvdb.org/73573
        https://cve.mitre.org/cgi-bin/cvename.cgi?name=CUE-2011-2523
        http://scarybeastsecurity.blogspot.com/2011/07/alert-vsftpd-download-backdoored.html
```

# Scripts Nmap



```
$ ls /usr/share/nmap/scripts/
acarsd-info.nse          ftp-proftpd-backdoor.nse      informix-tables.nse
address-info.nse          ftp-vsftpd-backdoor.nse      ip-forwarding.nse
afp-brute.nse             ftp-vuln-cve2010-4221.nse    ip-geolocation-ge
afp-ls.nse                ganglia-info.nse            ip-geolocation-ge
afp-path-vuln.nse         giop-info.nse              ip-geolocation-ip
afp-serverinfo.nse        gkrellm-info.nse          ip-geolocation-ma
afp-showmount.nse         gopher-ls.nse              ipidseq.nse
ajp-auth.nse              gpsd-info.nse            ipv6-node-info.nse
ajp-brute.nse             hadoop-datanode-info.nse  ipv6-ra-flood.nse
ajp-headers.nse           hadoop-jobtracker-info.nse irc-botnet-channel
ajp-methods.nse            hadoop-namenode-info.nse irc-brute.nse
ajp-request.nse           hadoop-secondary-namenode-info.nse irc-info.nse
amqp-info.nse              hadoop-tasktracker-info.nse irc-sasl-brute.nse
asn-query.nse              hbase-master-info.nse       irc-unrealircd-ba
auth-owners.nse            hbase-region-info.nse      iscsi-brute.nse
auth-spoof.nse             hddtemp-info.nse          iscsi-info.nse
backorifice-brute.nse     hostmap-bfk.nse            isns-info.nse
backorifice-info.nse       hostmap-ip2hosts.nse       jdwp-exec.nse
banner.nse                 hostmap-robtex.nse        jdwp-info.nse
bitcoin-getaddr.nse        http-adobe-coldfusion-apsa1301.nse jdwp-inject.nse
bitcoin-info.nse            http-affiliate-id.nse      jdwp-version.nse
bitcoinrpc-info.nse        http-apache-negotiation.nse krb5-enum-users.n
bittorrent-discovery.nse   http-auth-finder.nse       ldap-brute.nse
```

# Scripts Nmap



- Programming routines allow to find potential vulnerabilities in a given target
- First check if the port is open
- Detect vulnerabilities in the service port opened

```
nm.scan(arguments="-n -A -p3306 --  
script=/usr/share/nmap/scripts/mysql-  
info.nse")
```

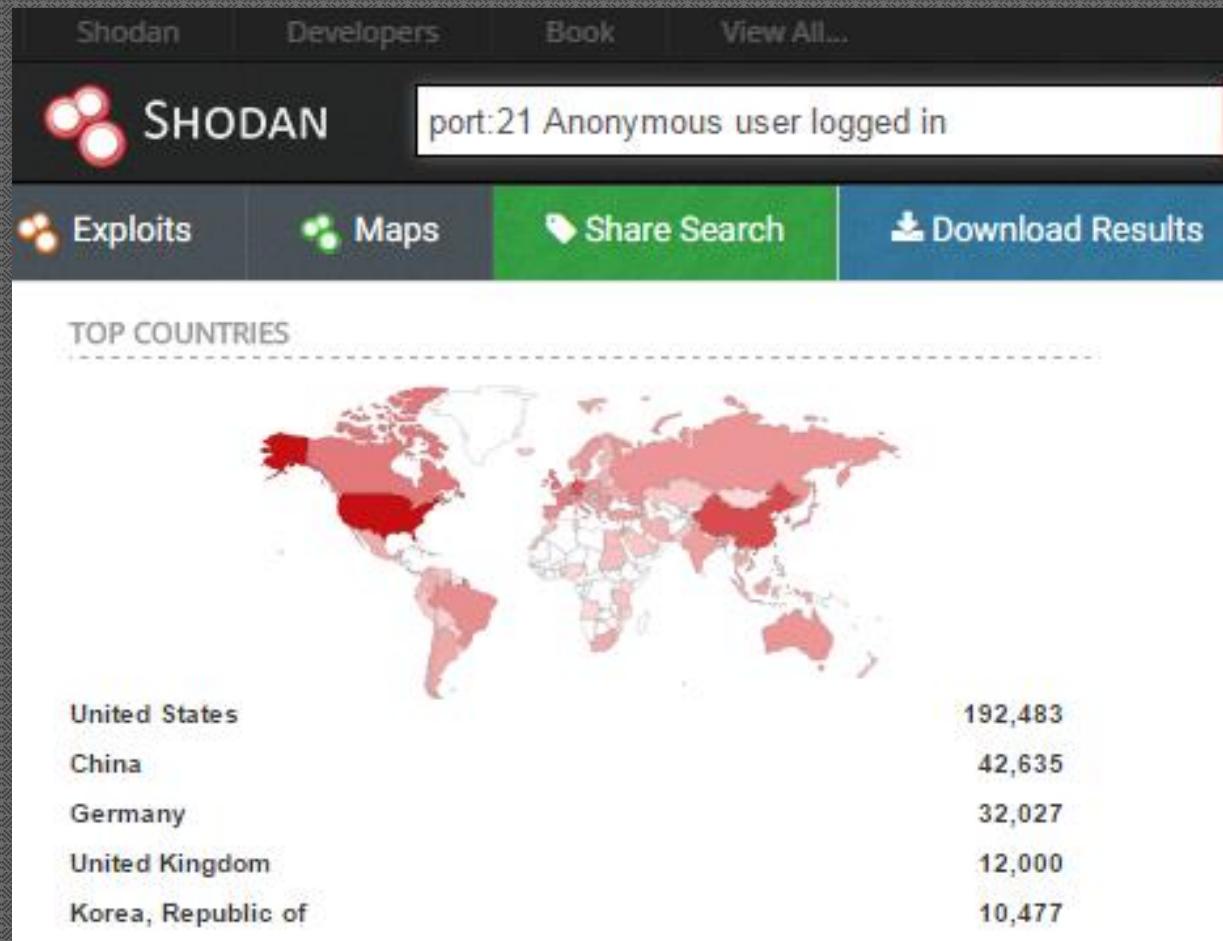
# Mysql Scripts Nmap



```
#mysql
if (port=='3306') and self.nmsync[hostname]['tcp'][int(port)]['state']=='open':
    print 'Checking MYSQL port with nmap scripts.....'

#scripts for mysql:3306 open
print 'Checking mysql-audit.nse.....'
self.nmasync.scan(hostname,
arguments="-A -sV -p3306 --script mysql-audit.nse",callback=callbackMySql)
self.scanning()
print 'Checking mysql-brute.nse.....'
self.nmasync.scan(hostname,
arguments="-A -sV -p3306 --script mysql-brute.nse",callback=callbackMySql)
self.scanning()
print 'Checking mysql-databases.nse.....'
self.nmasync.scan(hostname,
arguments="-A -sV -p3306 --script mysql-databases.nse",callback=callbackMySql)
self.scanning()
print 'Checking mysql-databases.nse.....'
self.nmasync.scan(hostname,
```

# Check FTP Login Anonymous



# Check FTP Login Anonymous



```
def anonymousLogin(hostname):
    try:
        ftp = ftplib.FTP(hostname)
        ftp.login('anonymous', '')
        print '\n[*] ' + str(hostname) + ' FTP Anonymous Logon Succeeded.'
        return ftp
    except Exception, e:
        print '\n[-] ' + str(hostname) + ' FTP Anonymous Logon Failed.'
        return False
```

# Check Webs sites



- pip install pywebfuzz
- <https://github.com/disassembler/pywebfuzz>

Branch: master → [pywebfuzz](#) / [pywebfuzz](#) / [data](#) / [Discovery](#) / [PredictableRes](#) /

Q nhamiel Added the updated data directory ...

..

📁 CMS	Added the updated data directory
📄 Apache.fuzz.txt	Added the updated data directory
📄 ApacheTomcat.fuzz.txt	Added the updated data directory
📄 CGI_HTTP_POST.fuzz.txt	Added the updated data directory
📄 CGI_HTTP_POST_Windows.fuzz.txt	Added the updated data directory
📄 CGI_Microsoft.fuzz.txt	Added the updated data directory
📄 CGI_XPlatform.fuzz.txt	Added the updated data directory
📄 ColdFusion.fuzz.txt	Added the updated data directory
📄 HTTP_POST_Microsoft.fuzz.txt	Added the updated data directory
📄 Hyperion.fuzz.txt	Added the updated data directory
📄 JBoss.fuzz.txt	Added the updated data directory
📄 JavaServlets_Common.fuzz.txt	Added the updated data directory
📄 KitchensinkDirectories.fuzz.txt	Added the updated data directory
📄 Logins.fuzz.txt	Added the updated data directory

# PyWebFuzz



```
from pywebfuzz import fuzzdb
import requests

logins = fuzzdb.Discovery.PredictableRes.Logins

domain = "http://192.168.56.101"

for login in logins:
    print "Checking... "+ domain + login
    response = requests.get(domain + login)
    if response.status_code == 200:
        print "Login Resource: " +login
```

# PyWebFuzz



```
[+] Get predictable urls
[ '/admin.asp', '/admin.aspx', '/admin.cfm', '/admin.jsp', '/admin.php', '/a
tlor.cfm', '/administrator.jsp', '/administrator.php', '/administrator.php4
Fault.asp', '/exchange/logon.asp', '/gs/admin', '/index.php?u=', '/login.as
px', '/logon.aspx', '/logon.jsp', '/logon.php', '/logon.php3', '/logon.php4
Testing..http://192.168.56.101/admin.asp
Testing..http://192.168.56.101/admin.aspx
Testing..http://192.168.56.101/admin.cfm
Testing..http://192.168.56.101/admin.jsp
Testing..http://192.168.56.101/admin.php
Testing..http://192.168.56.101/admin.php4
Testing..http://192.168.56.101/admin.pl
Testing..http://192.168.56.101/admin.py
Testing..http://192.168.56.101/admin.rb
Testing..http://192.168.56.101/administrator
Testing..http://192.168.56.101/administrator.asp
Testing..http://192.168.56.101/administrator.aspx
Testing..http://192.168.56.101/administrator.cfm
Testing..http://192.168.56.101/administrator.jsp
Testing..http://192.168.56.101/administrator.php
Testing..http://192.168.56.101/administrator.php4
Testing..http://192.168.56.101/administrator.pl
Testing..http://192.168.56.101/administrator.py
Testing..http://192.168.56.101/administrator.rb
Testing..http://192.168.56.101/admnistrator.php3
Testing..http://192.168.56.101/cgi-bin/sqwebmail?noframes=1
Testing..http://192.168.56.101/default.asp
Testing..http://192.168.56.101/exchange/logon.asp
Testing..http://192.168.56.101/gs/admin
Testing..http://192.168.56.101/index.php?u=
[+] Found Login Resource: /index.php?u=
Testing..http://192.168.56.101/login.asp
Testing..http://192.168.56.101/login.aspx
Testing..http://192.168.56.101/login.cfm
Testing..http://192.168.56.101/login.php
```

# Heartbleed



- Vulnerability in OpenSSL V1.0.1
- Multi-threaded tool for scanning hosts for CVE-2014-0160.
- <https://github.com/musalbas/heartbleed-masstest>
- <https://filippo.io/Heartbleed>

# Heartbleed



```
# construct heartbeat request packet
ver_chr = chr(ver&0xff)
hb = h2bin("18 03") + ver_chr + h2bin("40 00 01 3f fd") + "\x01"*16381
hb += h2bin("18 03") + ver_chr + h2bin("00 03 01 00 00")

s.send(hb)
return hit_hb(s)
```

Choose an option:Port 443 open

```
##### Started scanning for checking OPENSSL Heartbleed vulnerability '176.34.114.90' #####
Connecting with ...176.34.114.90 Port: 443
Sending Client Request...
Waiting for Server Request...
... received message: type = 22, ver = 0302, length = 58
Sending heartbeat request...
... received message: type = 22, ver = 0302, length = 754
... received message: type = 22, ver = 0302, length = 525
... received message: type = 22, ver = 0302, length = 4
... received message: type = 24, ver = 0302, length = 16384
Received heartbeat response:
```

# Heartbleed



```
3e70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3f00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3f10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3f20: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3f30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3f40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3f50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3f60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3f70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3f80: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3f90: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3fa0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3fb0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3fc0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3fd0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3fe0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
3ff0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

WARNING: server returned more data than it should - server is vulnerable!

-----  
Final Results  
-----

```
Server vulnerable found 2  
Server vulnerable: 176.34.114.90  
IP: 176.34.114.90  
Country: Ireland  
City: None  
Latitude: 53.3478  
Longitude: -6.2597  
Hostnames: [u'mailout1.theframeworks.com']
```

# Advanced tools



metasploit<sup>®</sup>



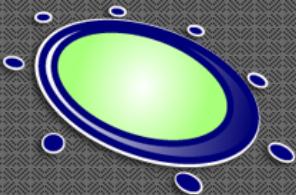
w3af



nexpose<sup>®</sup>



Nessus<sup>®</sup>  
vulnerability scanner



OpenVAS  
Open Vulnerability Assessment System

# Metasploit



- python-msfrpc

```
=[ metasploit v4.11.4-dev-b206de77 ]  
+ -- ---=[ 1488 exploits - 858 auxiliary - 251 post ]  
+ -- ---=[ 432 payloads - 37 encoders - 8 nops ]  
+ -- ---=[ Free Metasploit Pro trial: http://r-7.co/trymsp ]  
  
msf > load msgrpc Pass=msfadmin  
[*] MSGRPC Service: 127.0.0.1:55552  
[*] MSGRPC Username: msf  
[*] MSGRPC Password: msfadmin  
[*] Successfully loaded plugin: msgrpc  
msf >
```

# Metasploit API call



- Calls in msgpack format

```
cmdMysqlLogin="auxiliary/scanner/mysql/mysql_login
set RHOSTS " + self.ip

cmdMysqlLogin = cmdMysqlLogin + "\nrun
"""

print
self.client.call('console.write',[self.console['id'],cmdMysqlLogin])
self.processData(self.console['id'])
```

# Nexpose



- Tool developed by Rapid7 for scanning and vulnerability discovery.
- It allows programmatic access to other programs via HTTP/s requests.
- BeautifulSoup to obtain data from vulnerabilities server

# Nexpose



```
try:  
    if pyconnect == 0:  
        pynexposeHttps = pynexposeHttps.NeXposeServer(serveraddr_nexpose,  
                                                    port_server_nexpose, user_nexpose, password_nexpose)  
        pyconnect = 1  
    except Exception,e:  
        pyconnect = 0  
        print "Error to connecting with NeXposeServer"  
        print e
```

```
def vulnerabilityListing(self):  
    print "\nVulnerabilities"  
    print "-----"  
    bsoupVulnerabilityListing = BeautifulSoup(self.pynexposeHttps.vulnerability_listing(),'lxml')  
    for vulnerability in bsoupVulnerabilityListing.findAll('vulnerabilitysummary'):  
        attrs = dict(vulnerability.attrs)  
        print "Id: " + attrs['id']  
        print "Severity: " + attrs['severity']  
        print "Title: " + attrs['title']  
        bsoupVulnerabilityDetails = BeautifulSoup(self.pynexposeHttps.vulnerability_details(attrs['id']),'lxml')  
        for vulnerability_description in bsoupVulnerabilityDetails.findAll('description'):  
            print "Description: " + vulnerability_description.text
```

# Pentesting tool



```
[0]-->EXIT
[1]-->Check Open Ports[80,8080 by default]
[2]-->Port Scanning[It will scan over ports parameter,by default it will scan 80 and 8080]
[3]-->Nmap Scanning Advanced
[4]-->Check Option methods
[5]-->Check DNS Servers info
[6]-->Check Host info from Shodan Service
[7]-->NMAP Port Scanning
[8]-->Host Info by Socket Call
[9]-->GeoLocation Host Info
[10]-->Scraping for images and pdf & obtain metadata
[11]-->Get Headers info
[12]-->Get SSH user/password Brute Force[Requires port 22 opened]
[13]-->Get FTP Anonymous access[Requires port 21 opened]
[14]-->MetaSploitFrameWork
[15]-->NexposeFramework
[16]-->HTTP SCAN[Requires port 80 opened]
[17]-->Check HeartBleed OpenSSL vulnerability[Requires port 443 opened]
[18]-->Check FTP Server Buffer Overflow Vulnerability[Requires port 21 opened]
[19]-->Check Vulnerabilities SQL,XSS,LFI in domain
[20]-->Check Domains and obtain metadata-mails, hosts, servers,urls]
[21]-->Check open ports with scapy
[22]-->Check website libraries
[23]-->Identify web server
```

<https://github.com/jmortega/python-pentesting>

The screenshot shows the GitHub repository page for 'python-pentesting-tool'. At the top, there's a navigation bar with links for 'Code', 'Issues', 'Pull requests', 'Wiki', and 'Settings'. Below the navigation is a search bar and a 'Clone or download' button. The main content area displays the repository's statistics: 11 commits, 1 branch, and 0 releases. A 'New pull request' button is prominently displayed. The repository owner is listed as 'jmortega'. The repository name is 'python-pentesting-tool'. The repository description is 'A collection of python scripts for penetration testing'.

python-pentesting-tool — Edit

11 commits 1 branch 0 releases

Branch: master New pull request New file Find file HTTPS https://github.com/jmortega

jmortega new options

- python-msfrpc new options
- python-pywebfuzz new options
- CheckFTPVulnerable.py new options
- CheckFTPVulnerable.pyc new options
- CheckOpenSslVulnerable.py new options
- CheckOpenSslVulnerable.pyc new options
- CheckVuln\_SQL\_XSS\_LFI.py new options
- CheckVuln\_SQL\_XSS\_LFI.... new options
- Checker.py new options
- Checker.pyc new options
- ExtractMails.py new options
- ExtractMails.pyc new options

[https://github.com/jmortega/europython\\_ethical\\_hacking](https://github.com/jmortega/europython_ethical_hacking)



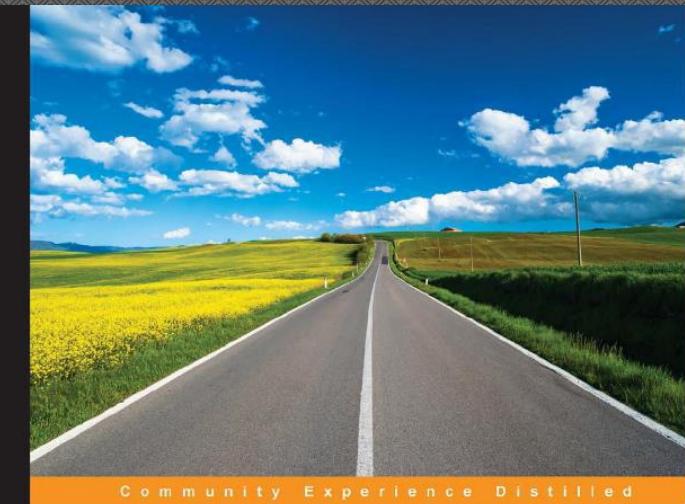
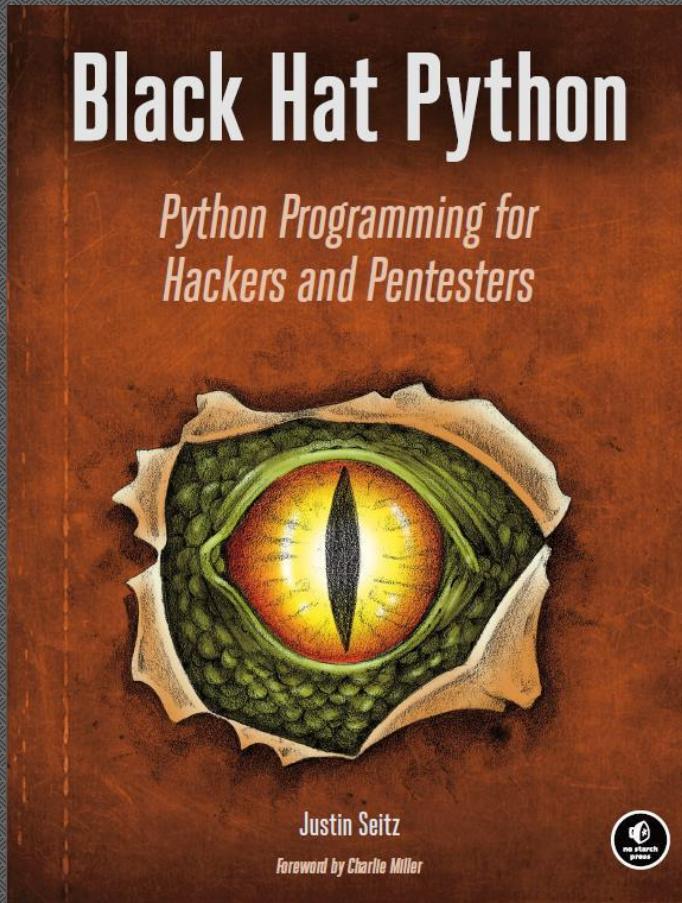
<a href="#">ftp_brute_force</a>	europython examples
<a href="#">geolP</a>	europython examples
<a href="#">requests</a>	europython examples
<a href="#">sockets</a>	europython examples
<a href="#">NmapScan.py</a>	europython examples
<a href="#">NmapScanner.py</a>	europython examples
<a href="#">NmapScannerAsync.py</a>	europython examples
<a href="#">NmapScannerAsync.pyc</a>	europython examples
<a href="#">ShodanSearch.py</a>	europython examples
<a href="#">WebSpider.py</a>	europython examples
<a href="#">builtWithDemo.py</a>	europython examples
<a href="#">checkFTPanonymousLogin.py</a>	europython examples
<a href="#">demofuzzdb.py</a>	europython examples
<a href="#">extractDataFromImages.py</a>	europython examples
<a href="#">extractDataFromPDF.py</a>	europython examples

# References & libs



- <http://docs.shodanhq.com>
- <http://docs.python-requests.org/en/master/>
- <http://scrapy.org>
- <http://xael.org/pages/python-nmap-en.html>
  
- <http://www.pythonsecurity.org/libs>
- <https://github.com/dloss/python-pentest-tools>
- <http://kali-linux.co/2016/07/12/python-tools-for-penetration-testers%E2%80%8B/>
- <https://github.com/PacktPublishing/Effective-Python-Penetration-Testing>

# Books



Community Experience Distilled

## Python Penetration Testing Essentials

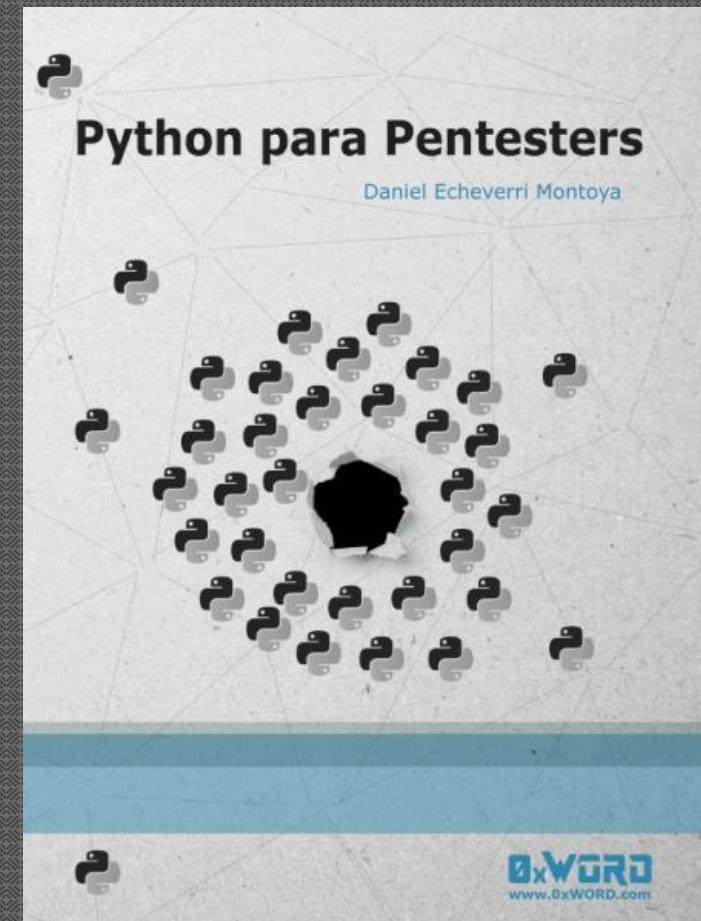
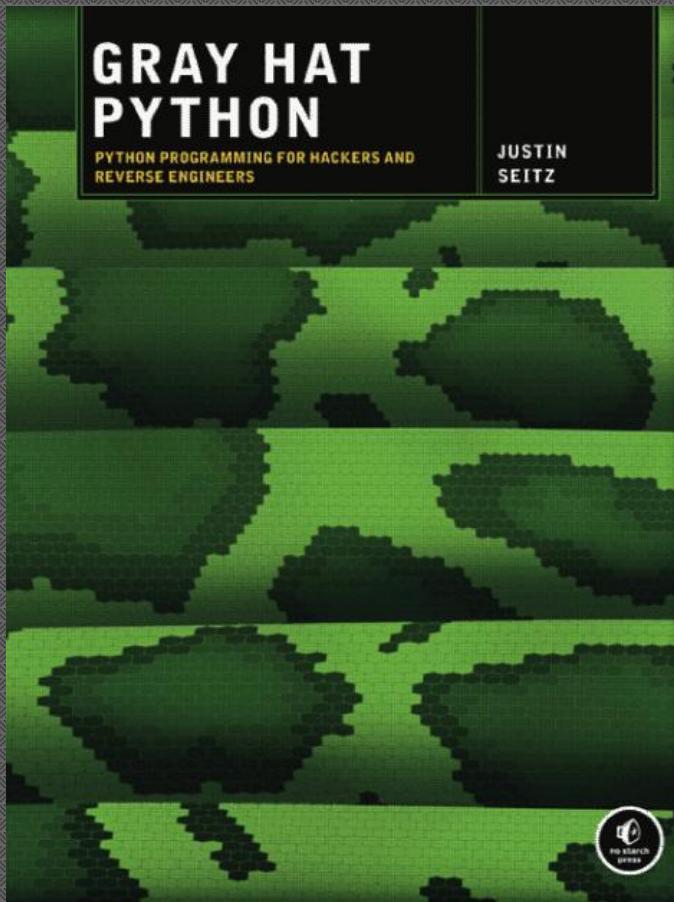
Employ the power of Python to get the best out of pentesting

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# Books





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# THANK YOU!