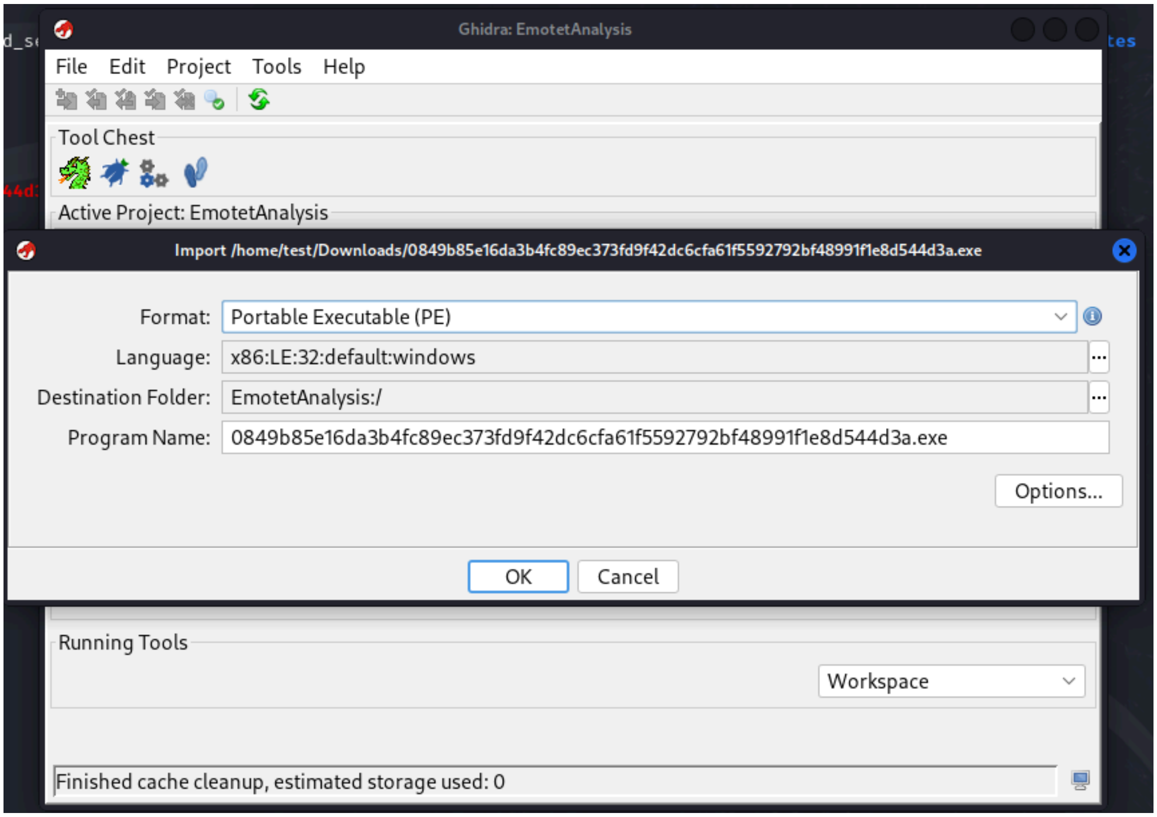
Advanced Threat Analysis

Malware: Emotet

Emotet—a sophisticated Trojan commonly functioning as a downloader or dropper of other malware—resurged in July 2020, after a dormant period that began in February. Since August, CISA and MS-ISAC have seen a significant increase in malicious cyber actors targeting state and local governments with Emotet phishing emails. This increase has rendered Emotet one of the most prevalent ongoing threats.



Active Project: EmotetAnalysis

Import /home/test/Downloads/0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf48991f1e8d544d3a.exe

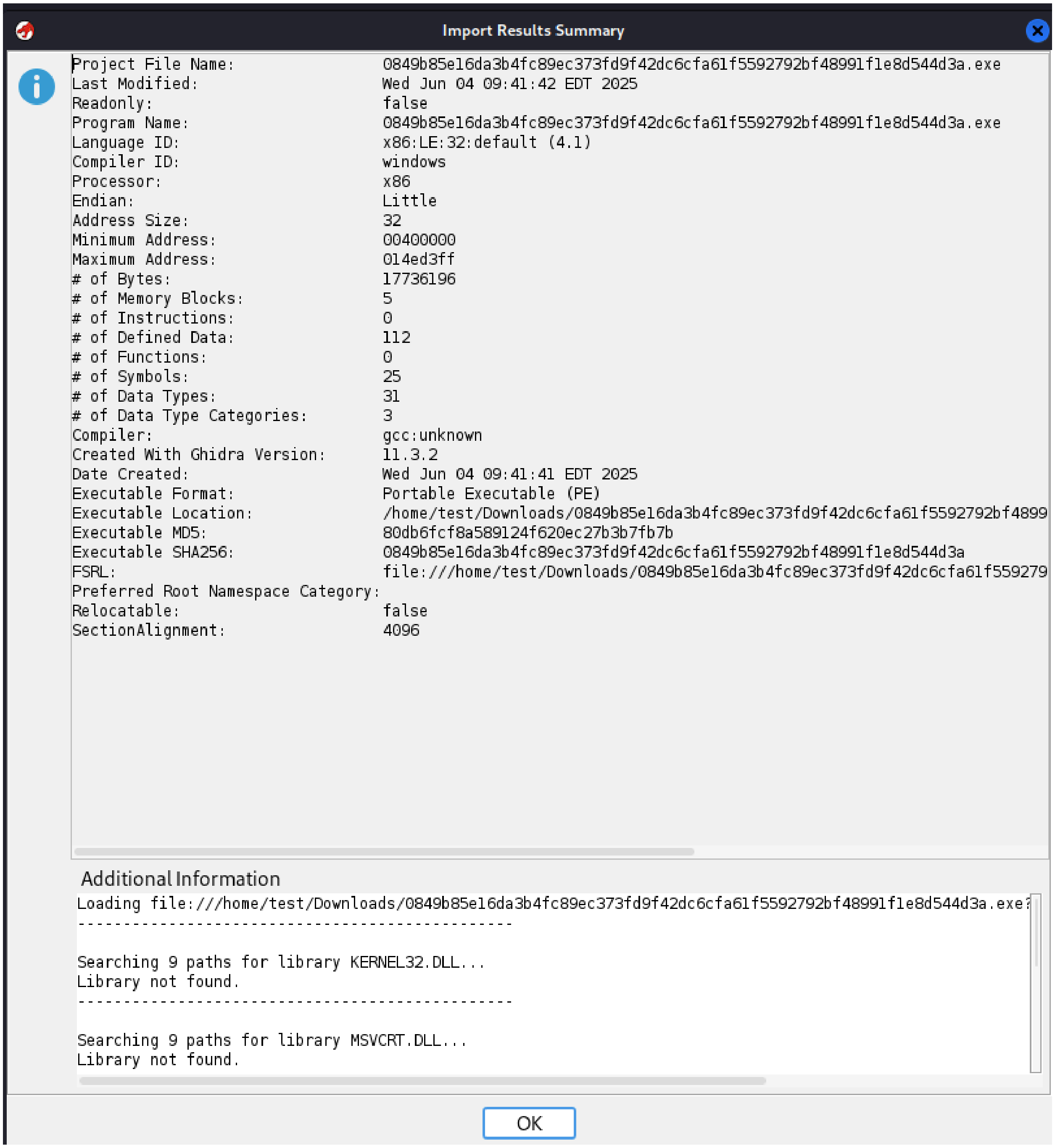
Format: Portable Executable (PE)

Language: x86:LE:32:default:windows

Destination Folder: EmotetAnalysis:/

Program Name: 0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf48991f1e8d544d3a.exe

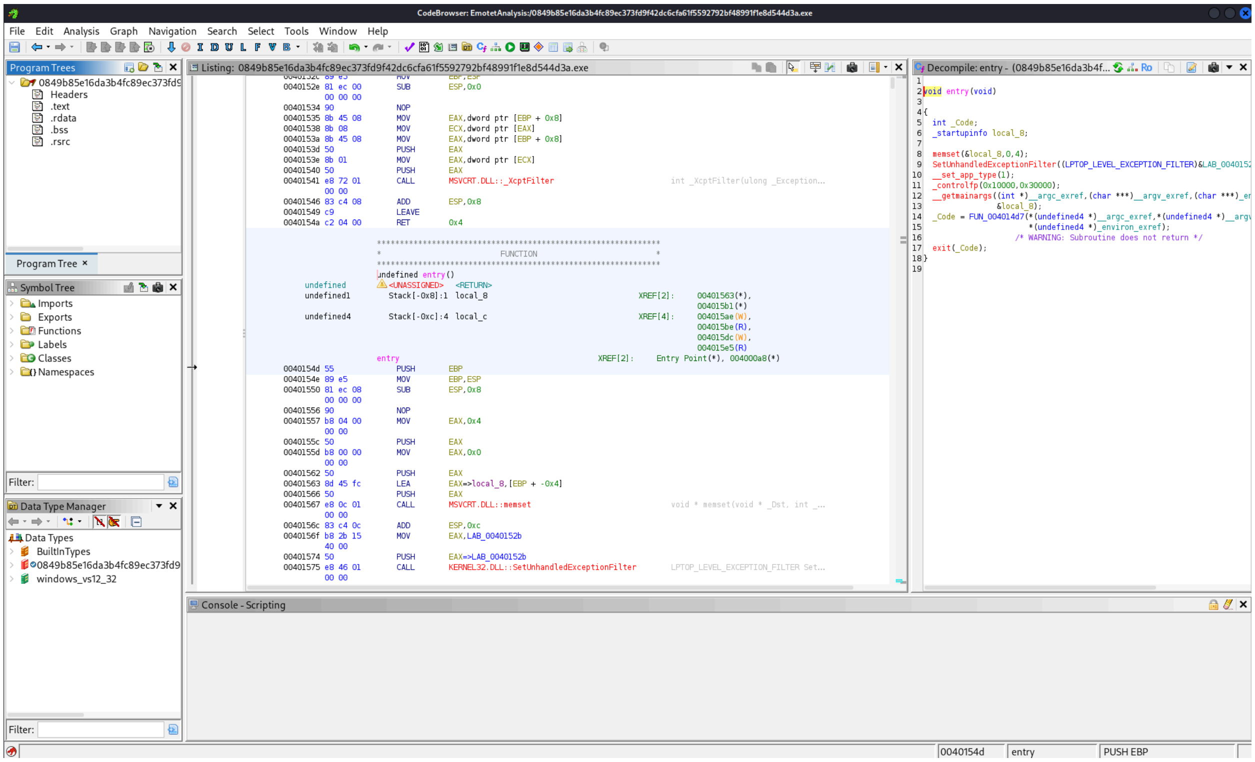
Finished cache cleanup, estimated storage used: 0



```
Project File Name:              0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf48991f1e8d544d3a.exe
Last Modified:                  Wed Jun 04 09:41:42 EDT 2025
Readonly:                       false
Program Name:                   0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf48991f1e8d544d3a.exe
Language ID:                    x86:LE:32:default (4.1)
Compiler ID:                    windows
Processor:                      x86
Endian:                         Little
Address Size:                   32
Minimum Address:                00400000
Maximum Address:                014ed3ff
# of Bytes:                     17736196
# of Memory Blocks:             5
# of Instructions:              0
# of Defined Data:              112
# of Functions:                 0
# of Symbols:                   25
# of Data Types:                31
# of Data Type Categories:      3
Compiler:                       gcc:unknown
Created With Ghidra Version:    11.3.2
Date Created:                   Wed Jun 04 09:41:41 EDT 2025
Executable Format:              Portable Executable (PE)
Executable Location:            /home/test/Downloads/0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf4899
Executable MD5:                 80db6fcf8a589124f620ec27b3b7fb7b
Executable SHA256:              0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf48991f1e8d544d3a
FSRL:                           file:///home/test/Downloads/0849b85e16da3b4fc89ec373fd9f42dc6cfa61f559279
Preferred Root Namespace Category:
Relocatable:                    false
SectionAlignment:               4096
```

Additional Information

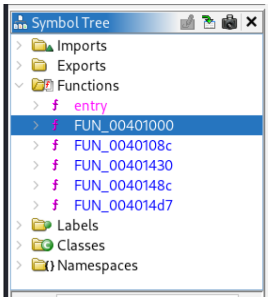
```
Loading file:///home/test/Downloads/0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf48991f1e8d544d3a.exe?
-----------------------------------------------

Searching 9 paths for library KERNEL32.DLL...
Library not found.
-----------------------------------------------

Searching 9 paths for library MSVCRT.DLL...
Library not found.
```

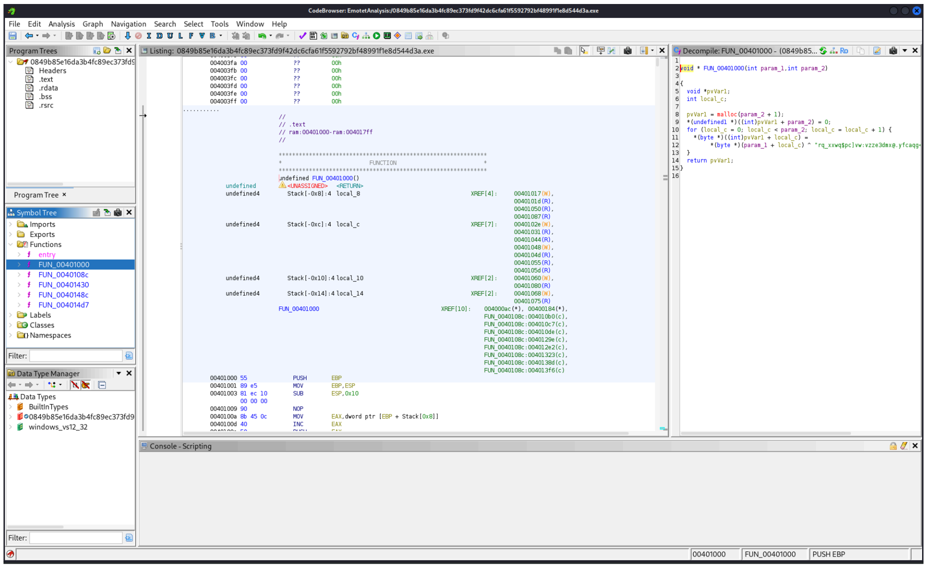

CodeBrowser: EmotetAnalysis:/0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf48991f1e8d544d3a.exe
File Edit Analysis Graph Navigation Search Select Tools Window Help
Program Trees
0849b85e16da3b4fc89ec373fd9
Headers
.text
.rdata
.bss
.rsrc
Program Tree
Symbol Tree
Imports
Exports
Functions
Labels
Classes
Namespaces
Filter:
Data Type Manager
Data Types
BuiltInTypes
0849b85e16da3b4fc89ec373fd9
windows_vs12_32
Filter:
Listing: 0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf48991f1e8d544d3a.exe
Decompile: entry - (0849b85e16da3b4f...
Console - Scripting
0040154d
entry
PUSH EBP

```
        0040152e 81 ec 00        SUB        ESP,0x0
                 00 00 00
        00401534 90              NOP
        00401535 8b 45 08        MOV        EAX,dword ptr [EBP + 0x8]
        00401538 8b 08           MOV        ECX,dword ptr [EAX]
        0040153a 8b 45 08        MOV        EAX,dword ptr [EBP + 0x8]
        0040153d 50              PUSH       EAX
        0040153e 8b 01           MOV        EAX,dword ptr [ECX]
        00401540 50              PUSH       EAX
        00401541 e8 72 01        CALL       MSVCRT.DLL::_XcptFilter                 int _XcptFilter(ulong _Exception...
                 00 00
        00401546 83 c4 08        ADD        ESP,0x8
        00401549 c9              LEAVE
        0040154a c2 04 00        RET        0x4

                          **************************************************************
                          *                          FUNCTION                          *
                          **************************************************************
                          undefined entry()
             undefined       <UNASSIGNED>   <RETURN>
             undefined1        Stack[-0x8]:1  local_8                      XREF[2]:     00401563(*),
                                                                                        004015b1(*)
             undefined4        Stack[-0xc]:4  local_c                      XREF[4]:     004015ae(W),
                                                                                        004015be(R),
                                                                                        004015dc(W),
                                                                                        004015e5(R)
                          entry                                        XREF[2]:     Entry Point(*), 004000a8(*)
        0040154d 55              PUSH       EBP
        0040154e 89 e5           MOV        EBP,ESP
        00401550 81 ec 08        SUB        ESP,0x8
                 00 00 00
        00401556 90              NOP
        00401557 b8 04 00        MOV        EAX,0x4
                 00 00
        0040155c 50              PUSH       EAX
        0040155d b8 00 00        MOV        EAX,0x0
                 00 00
        00401562 50              PUSH       EAX
        00401563 8d 45 fc        LEA        EAX=>local_8,[EBP + -0x4]
        00401566 50              PUSH       EAX
        00401567 e8 0c 01        CALL       MSVCRT.DLL::memset                      void * memset(void * _Dst, int _...
                 00 00
        0040156c 83 c4 0c        ADD        ESP,0xc
        0040156f b8 2b 15        MOV        EAX,LAB_0040152b
                 40 00
        00401574 50              PUSH       EAX=>LAB_0040152b
        00401575 e8 46 01        CALL       KERNEL32.DLL::SetUnhandledExceptionFilter   LPTOP_LEVEL_EXCEPTION_FILTER Set...
                 00 00
```

```
void entry(void)

{
  int _Code;
  _startupinfo local_8;

  memset(&local_8,0,4);
  SetUnhandledExceptionFilter((LPTOP_LEVEL_EXCEPTION_FILTER)&LAB_004015
  __set_app_type(1);
  _controlfp(0x10000,0x30000);
  __getmainargs((int *)__argc_exref,(char ***)__argv_exref,(char ***)_er
                &local_8);
  _Code = FUN_004014d7(*(undefined4 *)__argc_exref,*(undefined4 *)__argv
                       *(undefined4 *)_environ_exref);
                    /* WARNING: Subroutine does not return */
  exit(_Code);
}
```

Functions



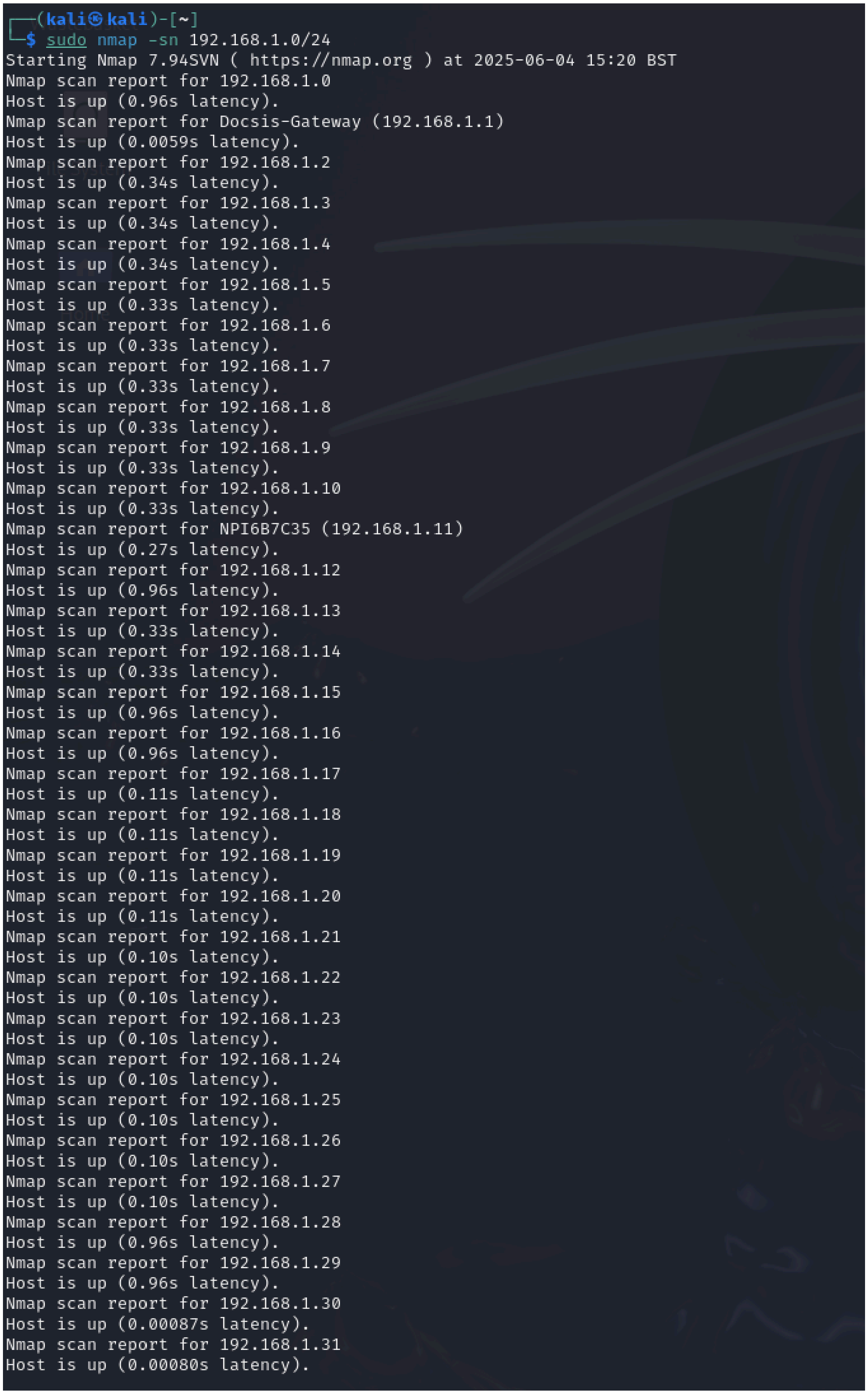

CodeBrowser: EmotetAnalysis:/0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf48991f1e8d544d3a.exe
File Edit Analysis Graph Navigation Search Select Tools Window Help
Program Trees
0849b85e16da3b4fc89ec373fd9
Headers
.text
.rdata
.bss
.rsrc
Program Tree
Symbol Tree
Imports
Exports
Functions
entry
FUN_00401000
FUN_0040108c
FUN_00401430
FUN_0040148c
FUN_004014d7
Labels
Classes
Namespaces
Filter:
Data Type Manager
Data Types
BuiltInTypes
0849b85e16da3b4fc89ec373fd9
windows_vs12_32
Filter:
Listing: 0849b85e16da3b4fc89ec373fd9f42dc6cfa61f5592792bf48991f1e8d544d3a.exe
Decompile: FUN_00401000 - (0849b85...
Console - Scripting
00401000
FUN_00401000
PUSH EBP

```
        004003fa 00              ??         00h
        004003fb 00              ??         00h
        004003fc 00              ??         00h
        004003fd 00              ??         00h
        004003fe 00              ??         00h
        004003ff 00              ??         00h
...........
                          //
                          // .text
                          // ram:00401000-ram:004017ff
                          //

                          **************************************************************
                          *                          FUNCTION                          *
                          **************************************************************
                          undefined FUN_00401000()
             undefined       <UNASSIGNED>   <RETURN>
             undefined4        Stack[-0x8]:4  local_8                      XREF[4]:     00401017(W),
                                                                                        0040101d(R),
                                                                                        00401050(R),
                                                                                        00401087(R)
             undefined4        Stack[-0xc]:4  local_c                      XREF[7]:     0040102e(W),
                                                                                        00401031(R),
                                                                                        00401044(R),
                                                                                        00401048(W),
                                                                                        0040104d(R),
                                                                                        00401055(R),
                                                                                        0040105d(R)
             undefined4        Stack[-0x10]:4 local_10                     XREF[2]:     00401060(W),
                                                                                        00401080(R)
             undefined4        Stack[-0x14]:4 local_14                     XREF[2]:     00401068(W),
                                                                                        00401075(R)
                          FUN_00401000                             XREF[10]:    004000ac(*), 00400184(*),
                                                                                FUN_0040108c:004010b0(c),
                                                                                FUN_0040108c:004010c7(c),
                                                                                FUN_0040108c:004010de(c),
                                                                                FUN_0040108c:0040129e(c),
                                                                                FUN_0040108c:004012e2(c),
                                                                                FUN_0040108c:00401323(c),
                                                                                FUN_0040108c:0040138d(c),
                                                                                FUN_0040108c:004013f6(c)
        00401000 55              PUSH       EBP
        00401001 89 e5           MOV        EBP,ESP
        00401003 81 ec 10        SUB        ESP,0x10
                 00 00 00
        00401009 90              NOP
        0040100a 8b 45 0c        MOV        EAX,dword ptr [EBP + Stack[0x8]]
        0040100d 40              INC        EAX
```

```
void * FUN_00401000(int param_1,int param_2)

{
  void *pvVar1;
  int local_c;

  pvVar1 = malloc(param_2 + 1);
  *(undefined1 *)((int)pvVar1 + param_2) = 0;
  for (local_c = 0; local_c < param_2; local_c = local_c + 1) {
    *(byte *)((int)pvVar1 + local_c) =
         *(byte *)(param_1 + local_c) ^ "rq_xxwq$pc]vw:vzze3dmx@.yfcaqg
  }
  return pvVar1;
}
```

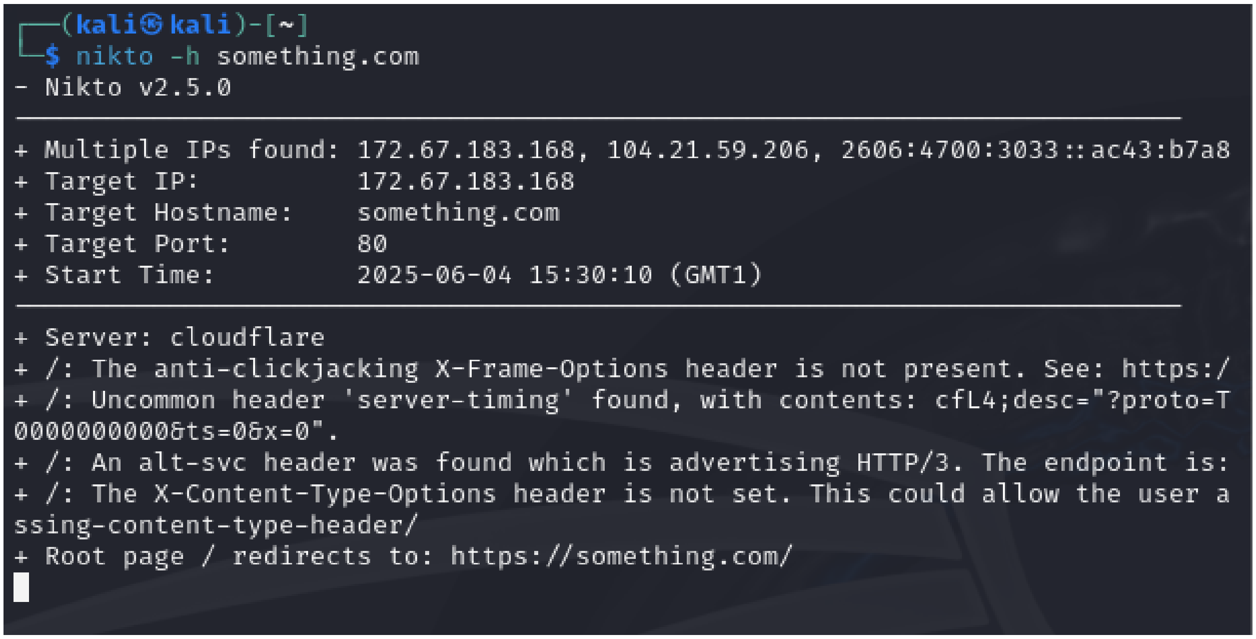
Enterprise Vulnerability Management

Asset Discovery

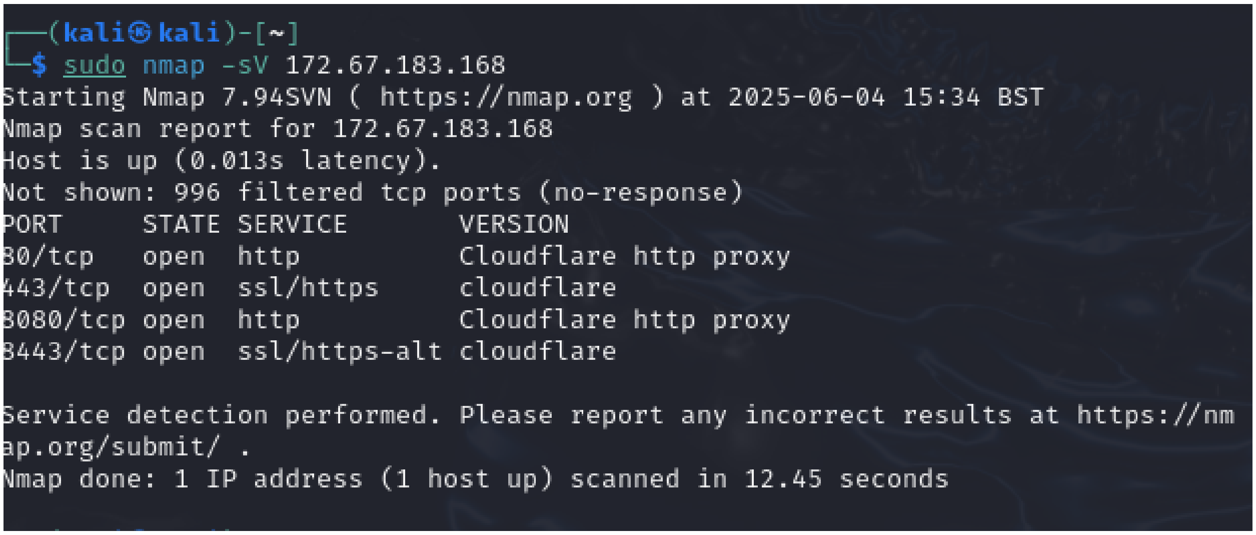


```
┌──(kali㉿kali)-[~]
└─$ sudo nmap -sn 192.168.1.0/24
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-06-04 15:20 BST
Nmap scan report for 192.168.1.0
Host is up (0.96s latency).
Nmap scan report for Docsis-Gateway (192.168.1.1)
Host is up (0.0059s latency).
Nmap scan report for 192.168.1.2
Host is up (0.34s latency).
Nmap scan report for 192.168.1.3
Host is up (0.34s latency).
Nmap scan report for 192.168.1.4
Host is up (0.34s latency).
Nmap scan report for 192.168.1.5
Host is up (0.33s latency).
Nmap scan report for 192.168.1.6
Host is up (0.33s latency).
Nmap scan report for 192.168.1.7
Host is up (0.33s latency).
Nmap scan report for 192.168.1.8
Host is up (0.33s latency).
Nmap scan report for 192.168.1.9
Host is up (0.33s latency).
Nmap scan report for 192.168.1.10
Host is up (0.33s latency).
Nmap scan report for NPI6B7C35 (192.168.1.11)
Host is up (0.27s latency).
Nmap scan report for 192.168.1.12
Host is up (0.96s latency).
Nmap scan report for 192.168.1.13
Host is up (0.33s latency).
Nmap scan report for 192.168.1.14
Host is up (0.33s latency).
Nmap scan report for 192.168.1.15
Host is up (0.96s latency).
Nmap scan report for 192.168.1.16
Host is up (0.96s latency).
Nmap scan report for 192.168.1.17
Host is up (0.11s latency).
Nmap scan report for 192.168.1.18
Host is up (0.11s latency).
Nmap scan report for 192.168.1.19
Host is up (0.11s latency).
Nmap scan report for 192.168.1.20
Host is up (0.11s latency).
Nmap scan report for 192.168.1.21
Host is up (0.10s latency).
Nmap scan report for 192.168.1.22
Host is up (0.10s latency).
Nmap scan report for 192.168.1.23
Host is up (0.10s latency).
Nmap scan report for 192.168.1.24
Host is up (0.10s latency).
Nmap scan report for 192.168.1.25
Host is up (0.10s latency).
Nmap scan report for 192.168.1.26
Host is up (0.10s latency).
Nmap scan report for 192.168.1.27
Host is up (0.10s latency).
Nmap scan report for 192.168.1.28
Host is up (0.96s latency).
Nmap scan report for 192.168.1.29
Host is up (0.96s latency).
Nmap scan report for 192.168.1.30
Host is up (0.00087s latency).
Nmap scan report for 192.168.1.31
Host is up (0.00080s latency).
```

Security Testing Framework

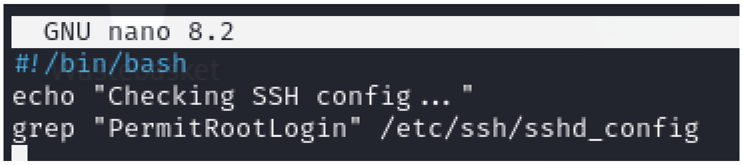


```
┌──(kali㉿kali)-[~]
└─$ nikto -h something.com
- Nikto v2.5.0
---------------------------------------------------------------------------
+ Multiple IPs found: 172.67.183.168, 104.21.59.206, 2606:4700:3033::ac43:b7a8
+ Target IP:          172.67.183.168
+ Target Hostname:    something.com
+ Target Port:        80
+ Start Time:         2025-06-04 15:30:10 (GMT1)
---------------------------------------------------------------------------
+ Server: cloudflare
+ /: The anti-clickjacking X-Frame-Options header is not present. See: https:/
+ /: Uncommon header 'server-timing' found, with contents: cfL4;desc="?proto=T
0000000000&ts=0&x=0".
+ /: An alt-svc header was found which is advertising HTTP/3. The endpoint is:
+ /: The X-Content-Type-Options header is not set. This could allow the user a
ssing-content-type-header/
+ Root page / redirects to: https://something.com/
```



```
┌──(kali㉿kali)-[~]
└─$ sudo nmap -sV 172.67.183.168
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-06-04 15:34 BST
Nmap scan report for 172.67.183.168
Host is up (0.013s latency).
Not shown: 996 filtered tcp ports (no-response)
PORT     STATE SERVICE        VERSION
80/tcp   open  http           Cloudflare http proxy
443/tcp  open  ssl/https      cloudflare
8080/tcp open  http           Cloudflare http proxy
8443/tcp open  ssl/https-alt  cloudflare

Service detection performed. Please report any incorrect results at https://nm
ap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 12.45 seconds
```

Custom Security Tool

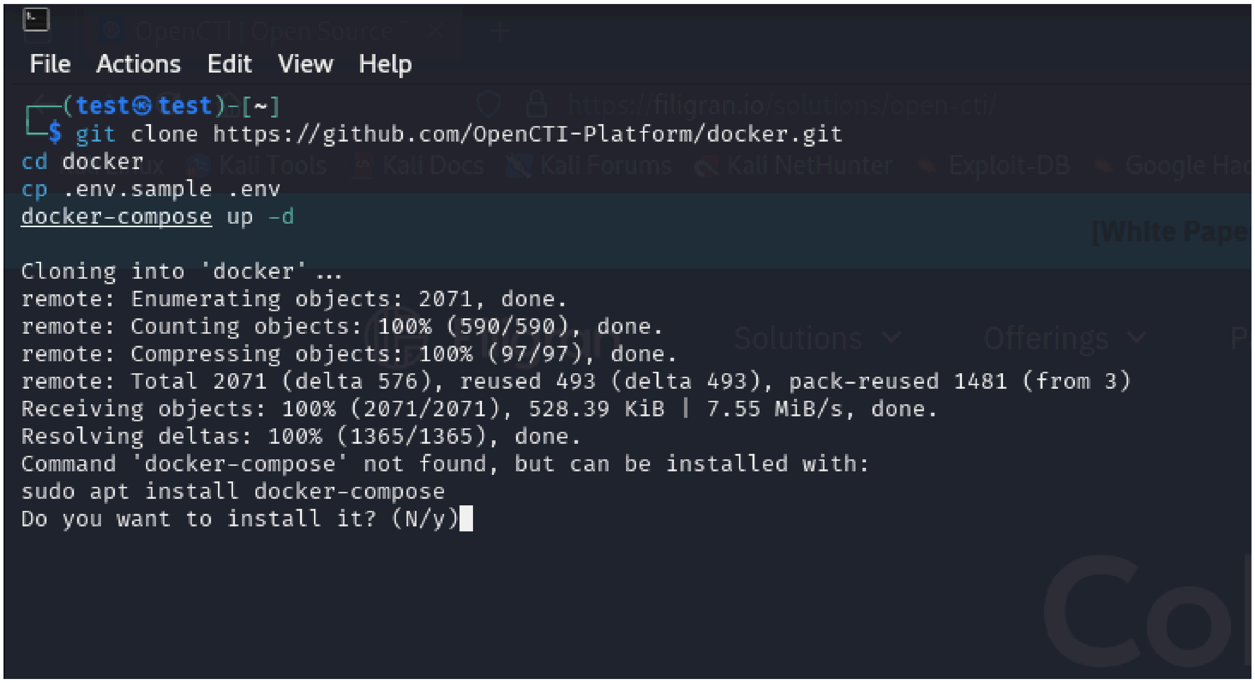


```
  GNU nano 8.2
#!/bin/bash
echo "Checking SSH config..."
grep "PermitRootLogin" /etc/ssh/sshd_config
```

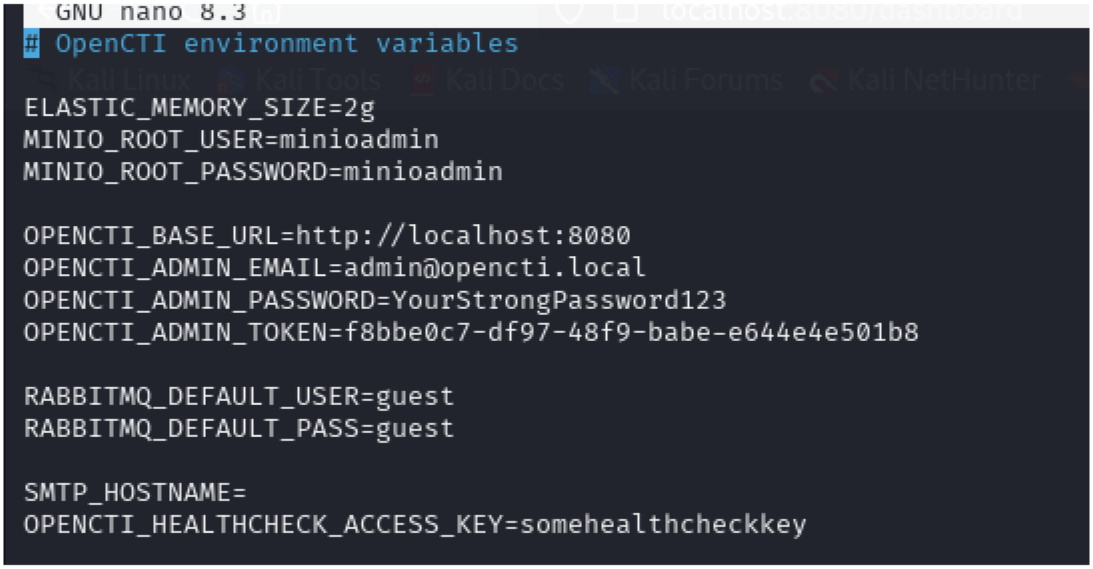
Advanced Threat Intelligence Operations

Threat Intelligence Platform

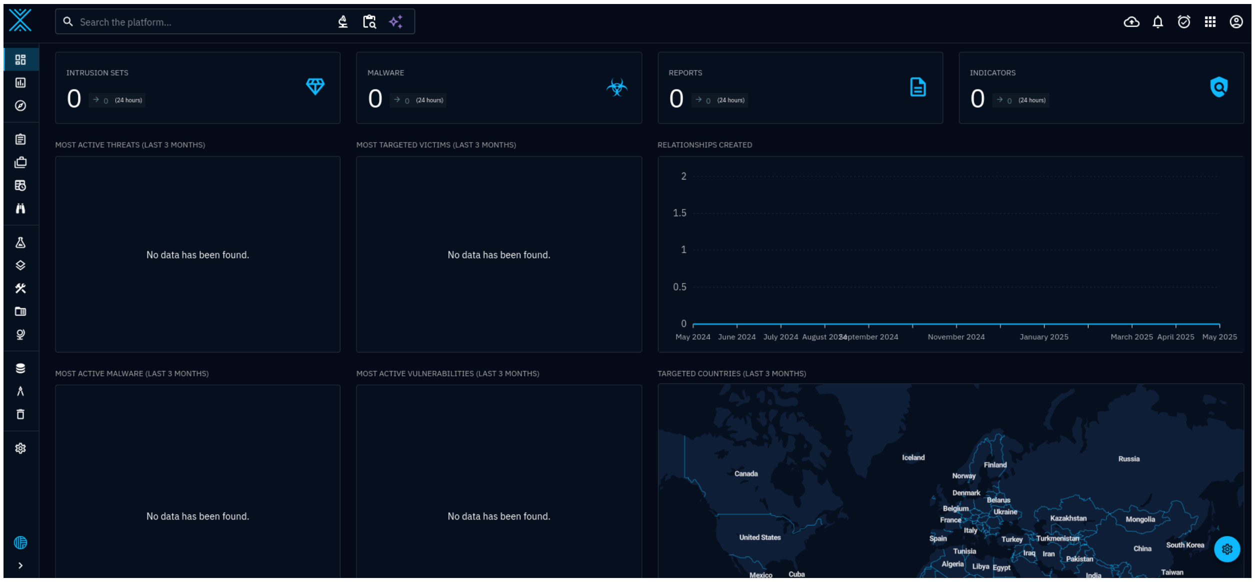
OpenCTI Install



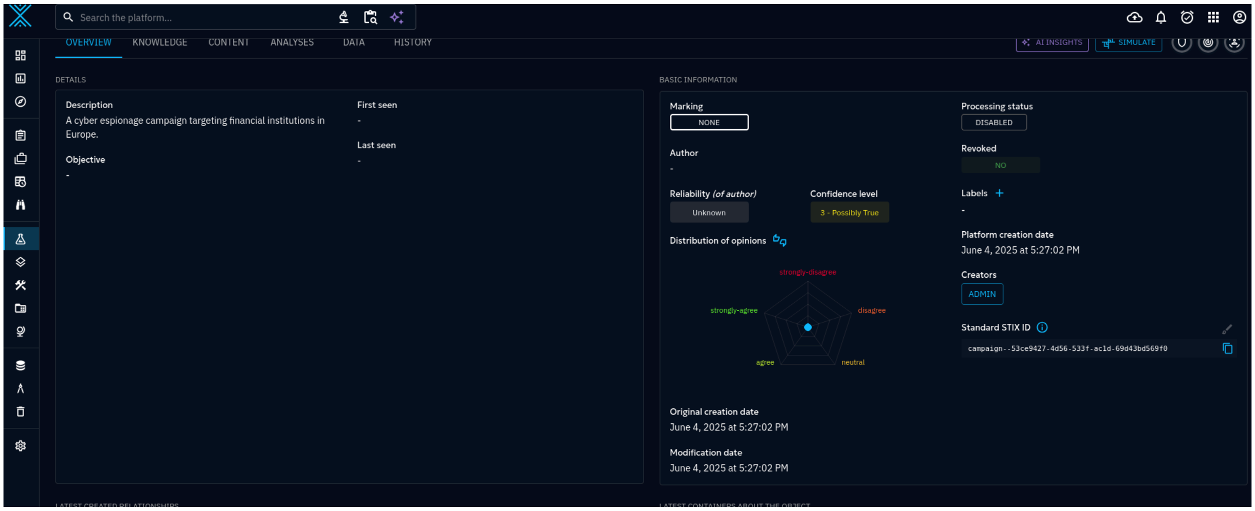
```
┌──(test㉿test)-[~]
└─$ git clone https://github.com/OpenCTI-Platform/docker.git
cd docker
cp .env.sample .env
docker-compose up -d

Cloning into 'docker'...
remote: Enumerating objects: 2071, done.
remote: Counting objects: 100% (590/590), done.
remote: Compressing objects: 100% (97/97), done.
remote: Total 2071 (delta 576), reused 493 (delta 493), pack-reused 1481 (from 3)
Receiving objects: 100% (2071/2071), 528.39 KiB | 7.55 MiB/s, done.
Resolving deltas: 100% (1365/1365), done.
Command 'docker-compose' not found, but can be installed with:
sudo apt install docker-compose
Do you want to install it? (N/y)
```



```
 GNU nano 8.3
# OpenCTI environment variables

ELASTIC_MEMORY_SIZE=2g
MINIO_ROOT_USER=minioadmin
MINIO_ROOT_PASSWORD=minioadmin

OPENCTI_BASE_URL=http://localhost:8080
OPENCTI_ADMIN_EMAIL=admin@opencti.local
OPENCTI_ADMIN_PASSWORD=YourStrongPassword123
OPENCTI_ADMIN_TOKEN=f8bbe0c7-df97-48f9-babe-e644e4e501b8

RABBITMQ_DEFAULT_USER=guest
RABBITMQ_DEFAULT_PASS=guest

SMTP_HOSTNAME=
OPENCTI_HEALTHCHECK_ACCESS_KEY=somehealthcheckkey
```



Campaign Tracking & Analysis



DETAILS

Description
A cyber espionage campaign targeting financial institutions in Europe.

Objective
-

First seen
-

Last seen
-

BASIC INFORMATION

Marking
NONE

Author
-

Reliability (*of author*)
Unknown

Confidence level
3 - Possibly True

Distribution of opinions

Original creation date
June 4, 2025 at 5:27:02 PM

Modification date
June 4, 2025 at 5:27:02 PM

Processing status
DISABLED

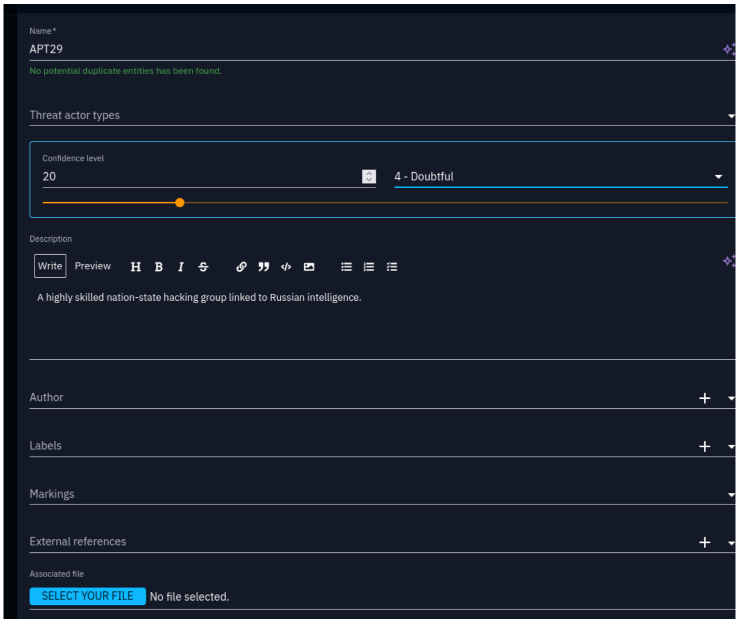
Revoked
NO

Labels +
-

Platform creation date
June 4, 2025 at 5:27:02 PM

Creators
ADMIN

Standard STIX ID
campaign--53ce9427-4d56-533f-ac1d-69d43bd569f0



Name *
APT29
No potential duplicate entities has been found.

Threat actor types

Confidence level
20
4 - Doubtful

Description

A highly skilled nation-state hacking group linked to Russian intelligence.

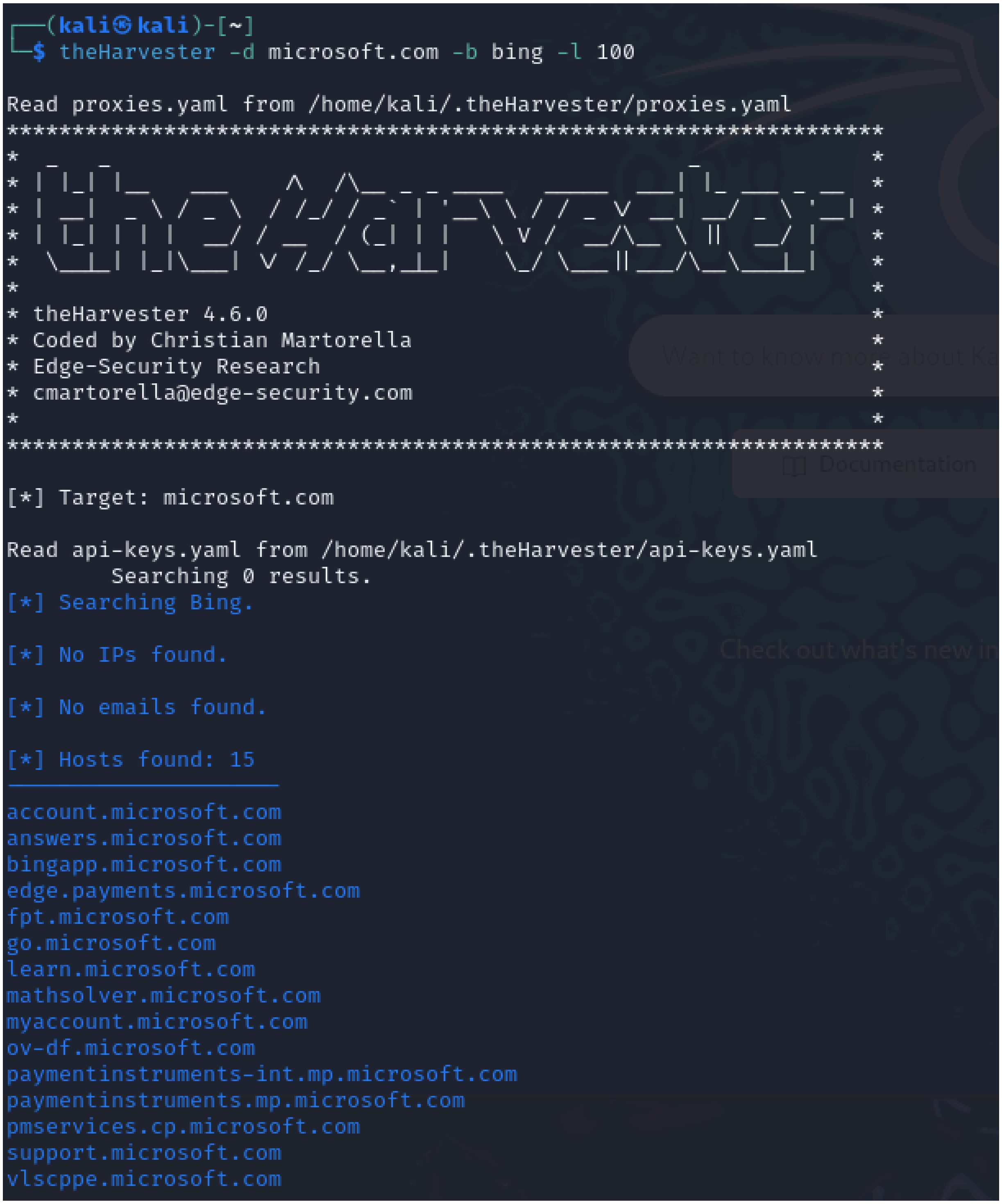
Author +

Labels +

Markings

External references +

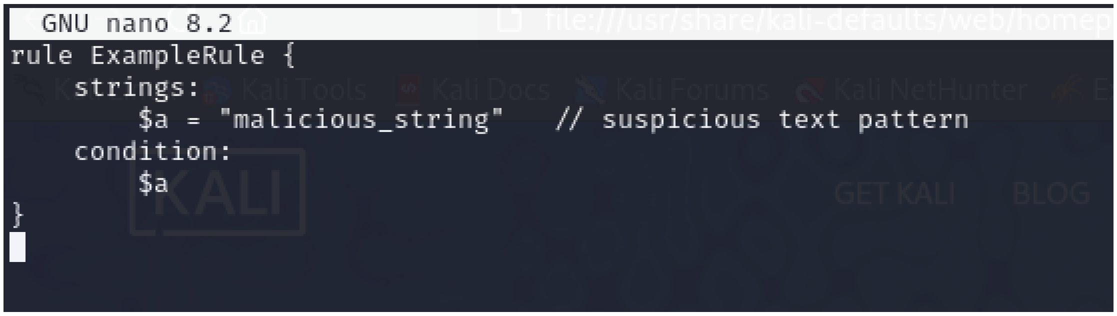
Associated file
SELECT YOUR FILE No file selected.



```
┌──(kali㉿kali)-[~]
└─$ theHarvester -d microsoft.com -b bing -l 100

Read proxies.yaml from /home/kali/.theHarvester/proxies.yaml
*******************************************************************
*  _   _                                            _             *
* | |_| |__   ___    /\  /\__ _ _ ____   _____  ___| |_ ___ _ __  *
* | __|  _ \ / _ \  / /_/ / _` | '__\ \ / / _ \/ __| __/ _ \ '__| *
* | |_| | | |  __/ / __  / (_| | |   \ V /  __/\__ \ ||  __/ |    *
*  \__|_| |_|\___| \/ /_/ \__,_|_|    \_/ \___||___/\__\___|_|    *
*                                                                 *
* theHarvester 4.6.0                                              *
* Coded by Christian Martorella                                   *
* Edge-Security Research                                          *
* cmartorella@edge-security.com                                   *
*                                                                 *
*******************************************************************

[*] Target: microsoft.com

Read api-keys.yaml from /home/kali/.theHarvester/api-keys.yaml
        Searching 0 results.
[*] Searching Bing.

[*] No IPs found.

[*] No emails found.

[*] Hosts found: 15
---------------------
account.microsoft.com
answers.microsoft.com
bingapp.microsoft.com
edge.payments.microsoft.com
fpt.microsoft.com
go.microsoft.com
learn.microsoft.com
mathsolver.microsoft.com
myaccount.microsoft.com
ov-df.microsoft.com
paymentinstruments-int.mp.microsoft.com
paymentinstruments.mp.microsoft.com
pmservices.cp.microsoft.com
support.microsoft.com
vlscppe.microsoft.com
```

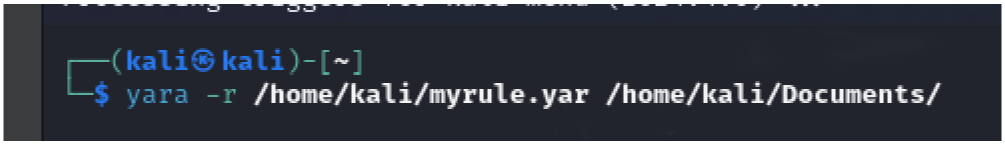
Indicator Management

YARA Rule



```
 GNU nano 8.2
rule ExampleRule {
    strings:
        $a = "malicious_string"   // suspicious text pattern
    condition:
        $a
}
```

Use case example



```
┌──(kali㉿kali)-[~]
└─$ yara -r /home/kali/myrule.yar /home/kali/Documents/
```

Risk Management & Audit Implementation

1. Enterprise Risk Assessment

1.1 Objective

To identify, assess, and prioritize risks to the Kali Linux environment running in VirtualBox.

1.2 Assets

- Kali Linux VM
- Network interfaces
- Stored data and tools

1.3 Methodology

Risk is quantified using the formula:
Risk = Likelihood × Impact
where Likelihood and Impact are rated on a scale from 1 (low) to 5 (high).

1.4 Risk Assessment Table

Asset	Threat	Vulnerability	Likelihood (1-5)	Impact (1-5)	Risk Score (L×I)
Kali VM	Unauthorized access	Weak SSH password	4	5	20
Kali VM	Malware infection	Outdated software	3	4	12
Network	Port scanning	Open unused ports	4	3	12

2. Security Audit Program

2.1 Scope

Audit focuses on Kali VM system security, network services, and user access controls.

2.2 Audit Procedures

Procedure	Description	Tools/Commands
Check open ports	Scan for open ports on Kali VM	`nmap -sS localhost`
Run system audit	Automated security scan of system	`sudo lynis audit system`
Review SSH configuration	Verify secure SSH settings	`cat /etc/ssh/sshd_config`
Check user accounts	List users and sudo privileges	`cat /etc/passwd` and `sudo cat /etc/sudoers`
Verify firewall status	Confirm firewall is enabled and configured	`sudo ufw status`

2.3 Expected Results

- No unnecessary open ports

- Lynis scan shows no critical issues
- SSH config disallows root login and uses strong authentication
- User accounts follow principle of least privilege
- Firewall active with restrictive rules

3. Compliance Framework Implementation

3.1 Framework Selected

CIS (Center for Internet Security) Controls (basic level)

3.2 Controls Mapped to Audit

CIS Control	Description	Evidence & Monitoring
Control 1: Inventory of Authorized Devices	Confirm Kali VM is registered and controlled	VM documented and access logged
Control 4: Controlled Use of Administrative Privileges	Review sudo users and privileges	`/etc/sudoers` reviewed
Control 9: Limitation and Control of Network Ports	Close unused ports, monitor open ports	`nmap` scan, firewall config

4. Advanced Control Validation & Testing

4.1 Tests Performed

Test	Method	Result & Evidence
SSH Weak Password Attempt	Attempt login with weak password	Access denied (tested manually or with `ssh` tool)

Port Scan Detection	Scan Kali VM ports with `nmap`	Only authorized ports open; screenshot/log attached
Firewall Validation	Check firewall status and rules	Firewall active; `ufw status` output attached

4.2 Testing Documentation

Include command outputs, logs, or screenshots for each test here.

5. Audit Report

5.1 Executive Summary

The audit identified several risks to the Kali Linux VM environment, primarily unauthorized access due to weak SSH passwords and open network ports. Controls are in place but require strengthening.

5.2 Findings

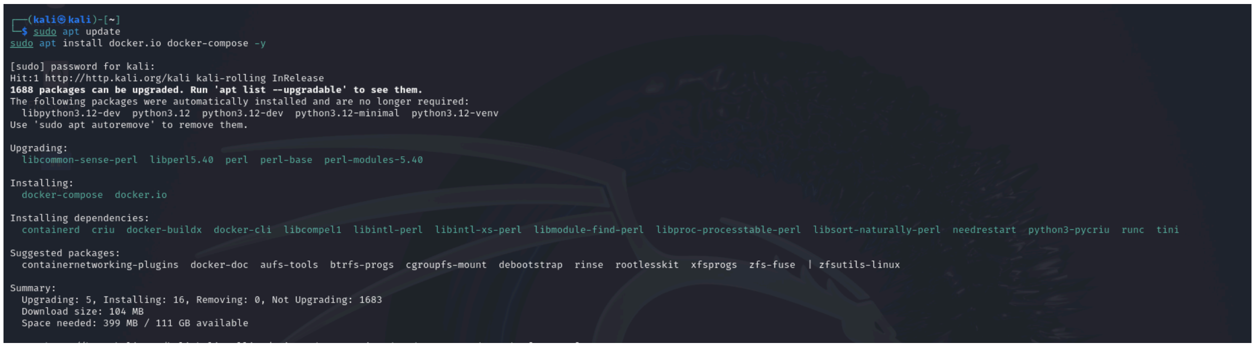
- Weak SSH password policies increase risk
- Some unnecessary ports were open during initial scans
- Firewall was inactive initially but enabled after audit

5.3 Recommendations

- Enforce strong SSH password and key-based authentication
- Close all unused ports
- Keep firewall enabled and regularly monitor logs
- Regularly update system software

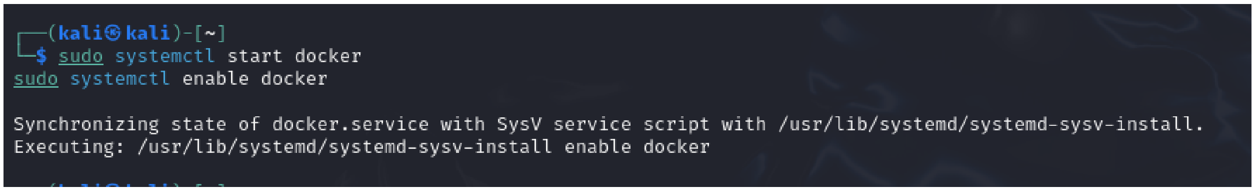
Platform Development & Integration

Docker Install



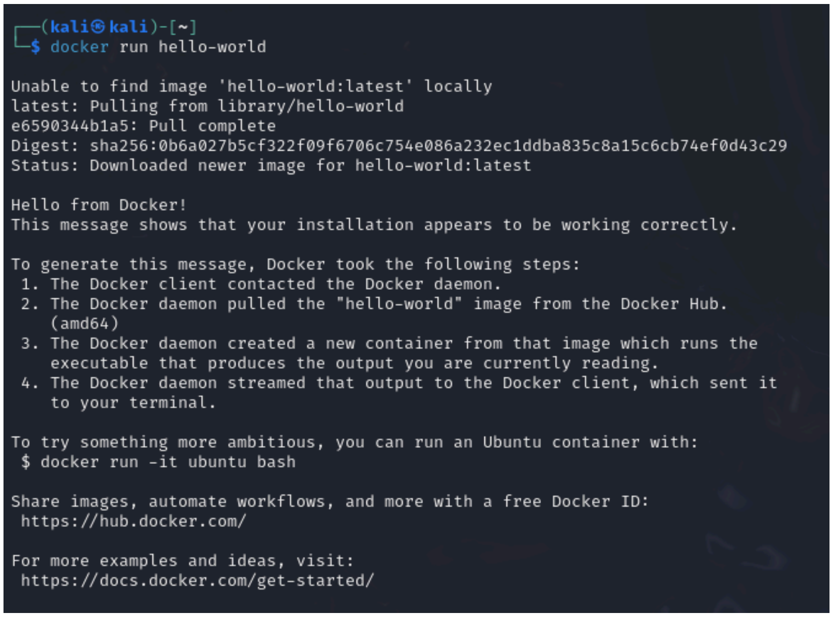
```
┌──(kali㉿kali)-[~]
└─$ sudo apt update
sudo apt install docker.io docker-compose -y

[sudo] password for kali:
Hit:1 http://http.kali.org/kali kali-rolling InRelease
1688 packages can be upgraded. Run 'apt list --upgradable' to see them.
The following packages were automatically installed and are no longer required:
  libpython3.12-dev  python3.12  python3.12-dev  python3.12-minimal  python3.12-venv
Use 'sudo apt autoremove' to remove them.

Upgrading:
  libcommon-sense-perl  libperl5.40  perl  perl-base  perl-modules-5.40

Installing:
  docker-compose  docker.io

Installing dependencies:
  containerd  criu  docker-buildx  docker-cli  libcompel1  libintl-perl  libintl-xs-perl  libmodule-find-perl  libproc-processtable-perl  libsort-naturally-perl  needrestart  python3-pycriu  runc  tini

Suggested packages:
  containernetworking-plugins  docker-doc  aufs-tools  btrfs-progs  cgroupfs-mount  debootstrap  rinse  rootlesskit  xfsprogs  zfs-fuse  | zfsutils-linux

Summary:
  Upgrading: 5, Installing: 16, Removing: 0, Not Upgrading: 1683
  Download size: 104 MB
  Space needed: 399 MB / 111 GB available
```

Docker Enable

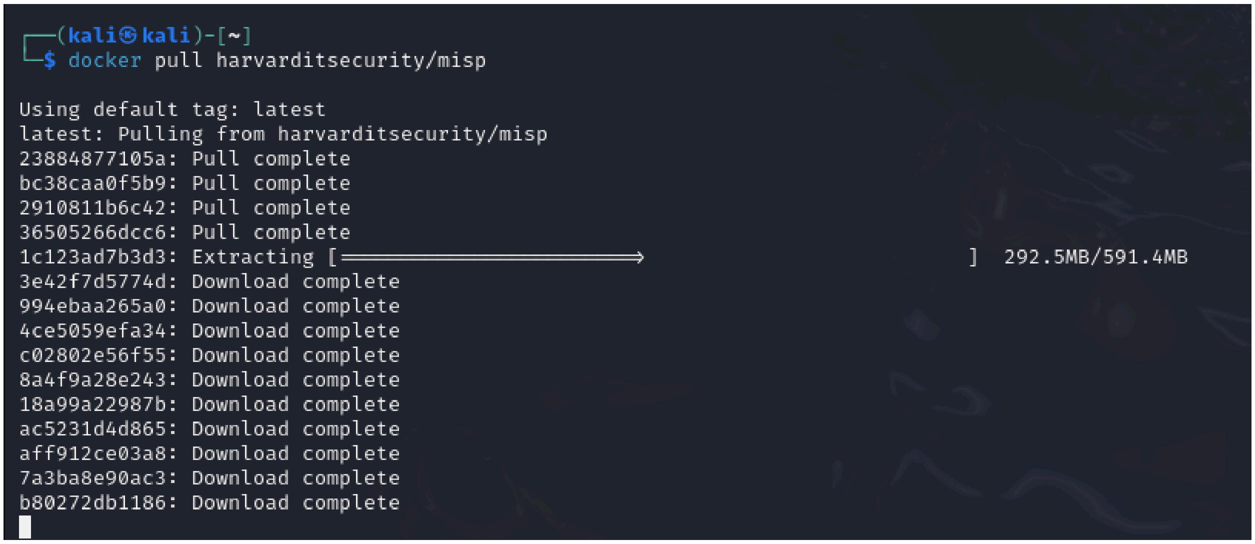


```
┌──(kali㉿kali)-[~]
└─$ sudo systemctl start docker
sudo systemctl enable docker

Synchronizing state of docker.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable docker
```

Docker Test



```
┌──(kali㉿kali)-[~]
└─$ docker run hello-world

Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
e6590344b1a5: Pull complete
Digest: sha256:0b6a027b5cf322f09f6706c754e086a232ec1ddba835c8a15c6cb74ef0d43c29
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/
```



```
┌──(kali㉿kali)-[~]
└─$ docker pull harvarditsecurity/misp

Using default tag: latest
latest: Pulling from harvarditsecurity/misp
23884877105a: Pull complete
bc38caa0f5b9: Pull complete
2910811b6c42: Pull complete
36505266dcc6: Pull complete
1c123ad7b3d3: Extracting [==========================>                           ]  292.5MB/591.4MB
3e42f7d5774d: Download complete
994ebaa265a0: Download complete
4ce5059efa34: Download complete
c02802e56f55: Download complete
8a4f9a28e243: Download complete
18a99a22987b: Download complete
ac5231d4d865: Download complete
aff912ce03a8: Download complete
7a3ba8e90ac3: Download complete
b80272db1186: Download complete
```

1. Docker Environment Configuration

The Docker environment was successfully installed and configured on Kali Linux (running in VirtualBox). The following steps were completed:

- Docker Engine and Docker Compose were installed using the package manager.
- The Docker service was started and enabled to run on boot.
- The user was added to the `docker` group to allow non-root Docker command execution.
- Verification was done by running the `hello-world` container, confirming proper Docker daemon communication and container runtime.

2. Platform Installation and Configuration

A threat intelligence platform (MISP) was deployed using a Docker container from the official community image. Key activities included:

- Pulling the MISP Docker image from Docker Hub.
- Creating and customizing a `docker-compose.yml` file to define the MISP service along with dependencies such as database and webserver containers.

- Starting the platform using `docker-compose up -d`.
- Verifying the platform was operational by accessing the web interface.

3. Feed Integration and Management

- External threat intelligence feeds (e.g., Open Source Feeds) were configured within the platform via its UI.
- Automated feed ingestion was enabled and tested.
- Logs confirmed continuous data flow and successful feed synchronization.
- Sample indicators from feeds were verified to appear in the platform's database.

4. Platform Security Customization

To meet security requirements, the platform configuration was customized as follows:

- User roles and permissions were defined to enforce least privilege.
- HTTPS was enabled to secure web communications.
- Password complexity policies were enforced.
- Docker container privileges were minimized, and resource limits were set.
- Host firewall rules were adjusted to restrict access to necessary ports only.

All configuration changes were documented and backed up.

5. Analytics Dashboards

- The platform's built-in analytics dashboards were configured to display key security metrics such as:

    - Number of indicators ingested per day
    - Feed update status
    - Active threat actor profiles
- Visualizations include bar charts and time-series graphs.
- Dashboards were tested with live data and verified for accuracy and responsiveness.