MVS Magnet Virtual Summit 2025

Unlocking DFIR: Free Resources for Efficient Triage and Acquisition

Doug Metz,
Senior Security Forensics Specialist

MVS

Doug Metz, MCFE, GCFA, GCFE, GREM

- Joined Magnet in 2021
- Incident Response Manager
- HTCIA, Delaware Valley Chapter
- BakerStreetForensics.com

doug.metz@magnetforensics.com

Cyber Unpacked
Exploring enterprise DFIR

HTCIA
Delaware Valley - Philadelphia

BAKER STREET FORENSICS
D . F . I . R .

Triage in DFIR

- Incident Identification
- Impact Assessment
- Urgency Classification
- Containment and Mitigation
- Resource Allocation

The Triage Jump Kit

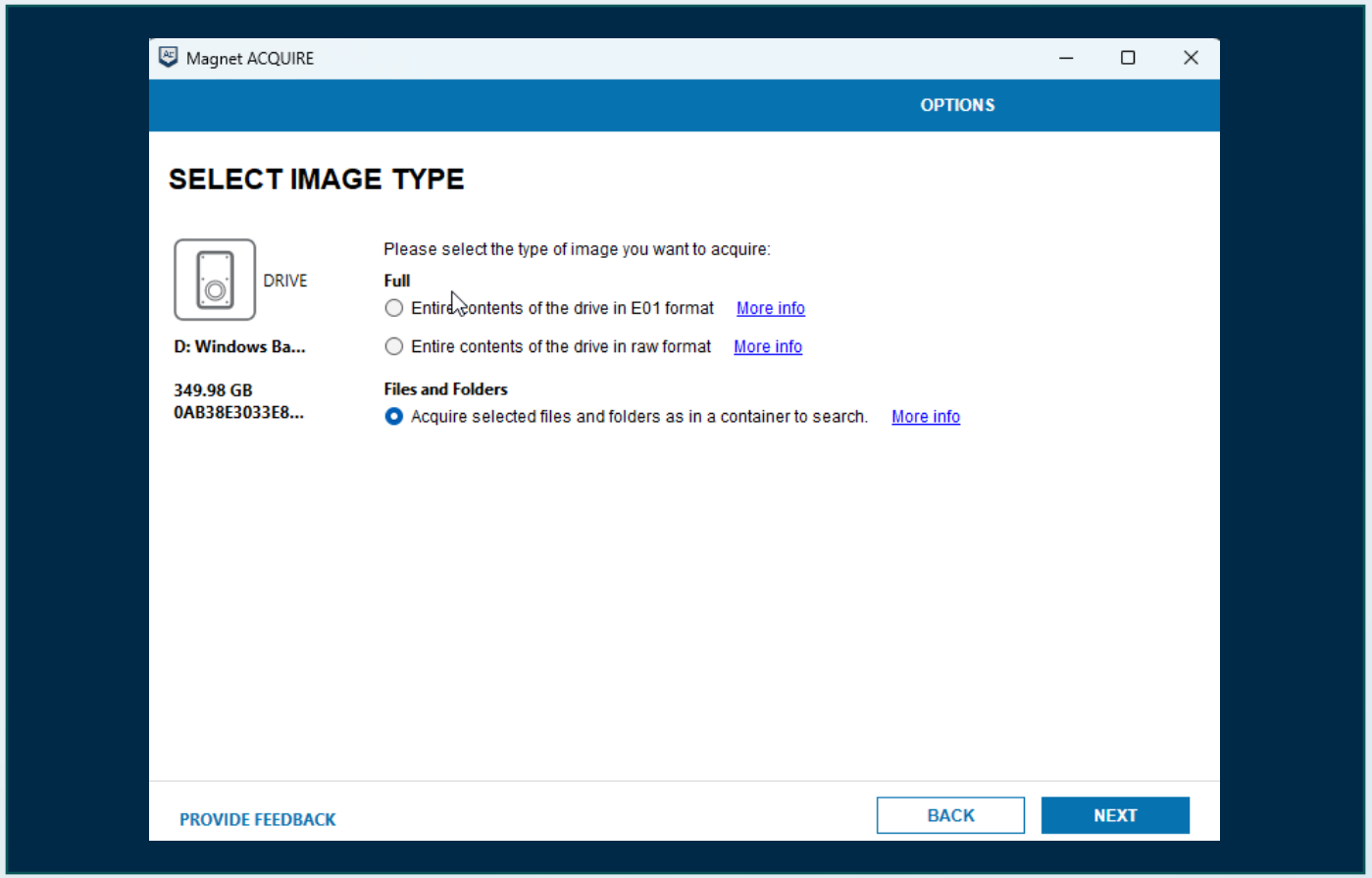
- Triage Collection
- Memory Acquisition
- Windows, Mac, Linux
- Scalable for ‘mass casualty incident’

Jump Kit Contents

Magnet Acquire	Magnet RAM Capture	DumpIt (Windows & Linux)	Magnet Response
Response PowerShell	Defender Response PowerShell	Encrypted Disk Detector	CyberPipe
CyLR	UAC	AVML	

```
jumpkit
├── Encrypted_Disk_Detection
│   └── EDD
├── Full_Disk_Acquistion
│   └── Magnet_Acquire
├── RAM_Capture
│   ├── Linux
│   │   ├── avml
│   │   └── dumpit-linux
│   │       ├── proc
│   │       ├── screenshots
│   │       ├── src
│   │       └── tests
│   └── Windows
│       ├── Comae-Toolkit
│       │   ├── ARM64
│       │   ├── x64
│       │   └── x86
│       └── Magnet_RAM_Capture
├── Scripts
└── Triage_Collection
    ├── Mac_&_Linux
    │   ├── CyLR
    │   │   ├── CyLR_Linux
    │   │   └── CyLR_OSX
    │   └── uac
    │       ├── artifacts
    │       ├── bin
    │       ├── config
    │       ├── lib
    │       ├── logo
    │       ├── profiles
    │       └── tools
    └── Windows
        ├── CyLR
        │   ├── CyLR_Win64
        │   └── CyLR_Win86
        └── Magnet_RESPONSE
```

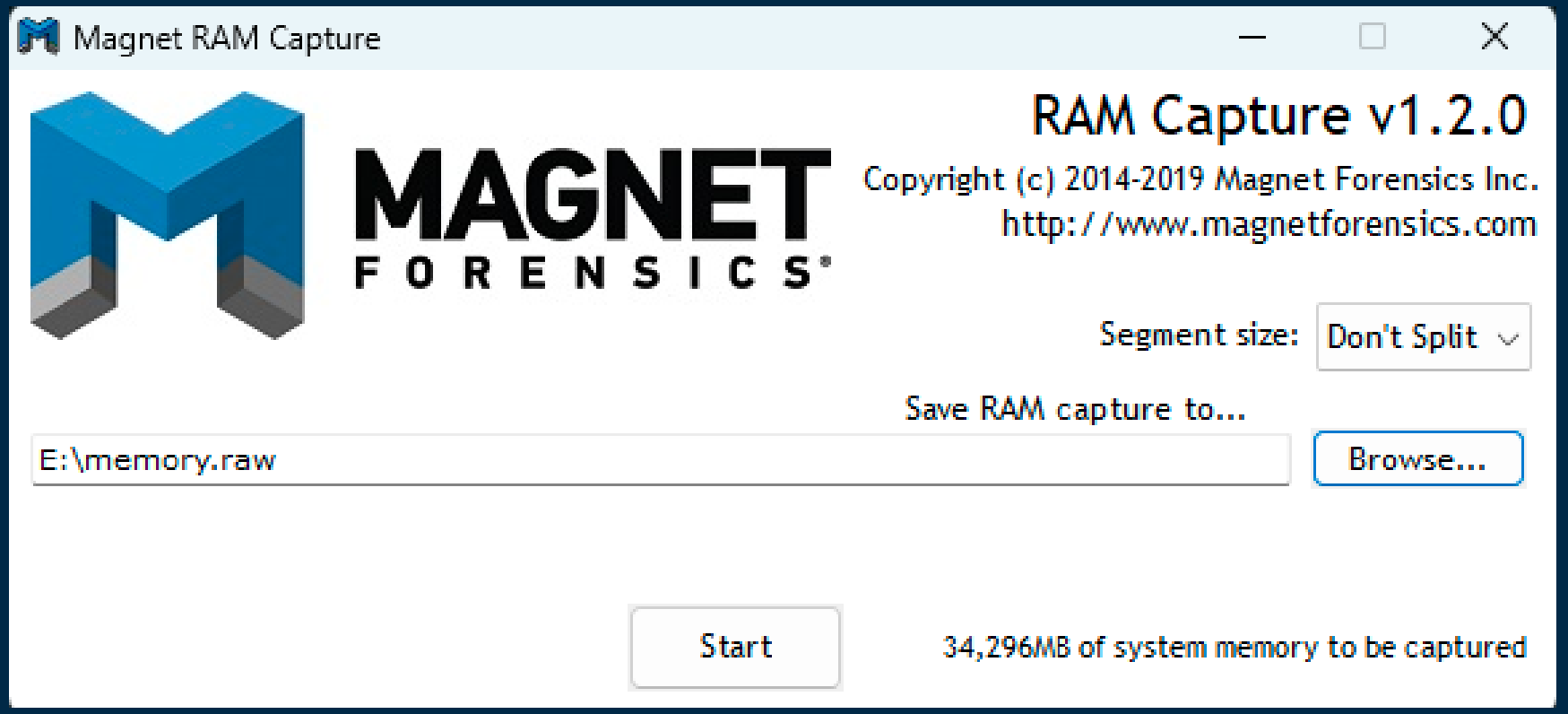
Magnet Acquire



- Dead box acquisition
- Hard drives and removable media
- Full Disk Image
- Patient 0
- iOS & Android acquisition

Magnet RAM Capture

- Windows Memory Acquisition
- GUI
- RAW Format
- Legacy to Modern Windows systems
- x86 & x64

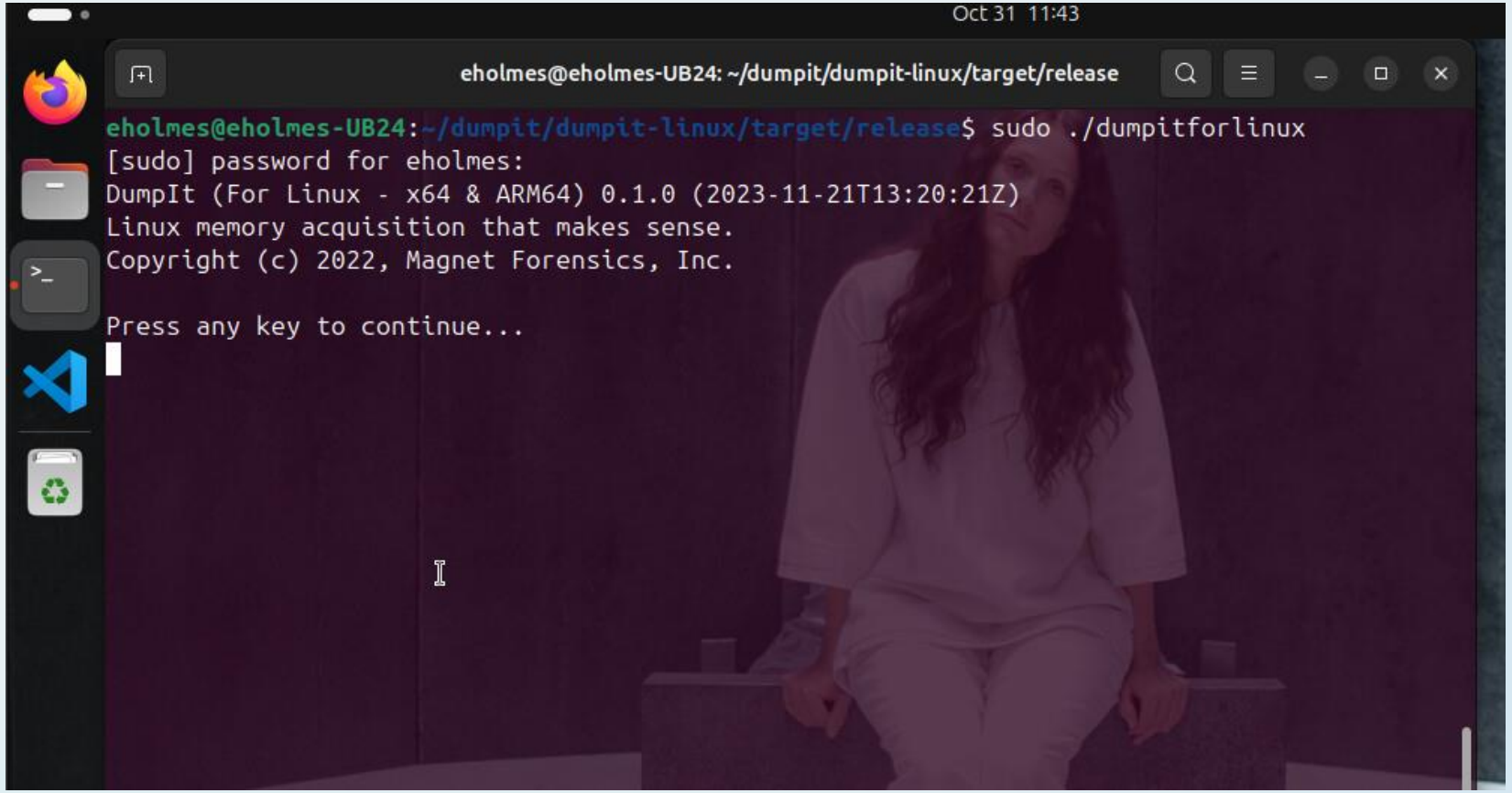


DumpIt for Windows

- Windows Memory Acquisition
- CLI
- DMP (default) or RAW Format
- Legacy to Modern Windows systems
- x86 & x64 and ARM

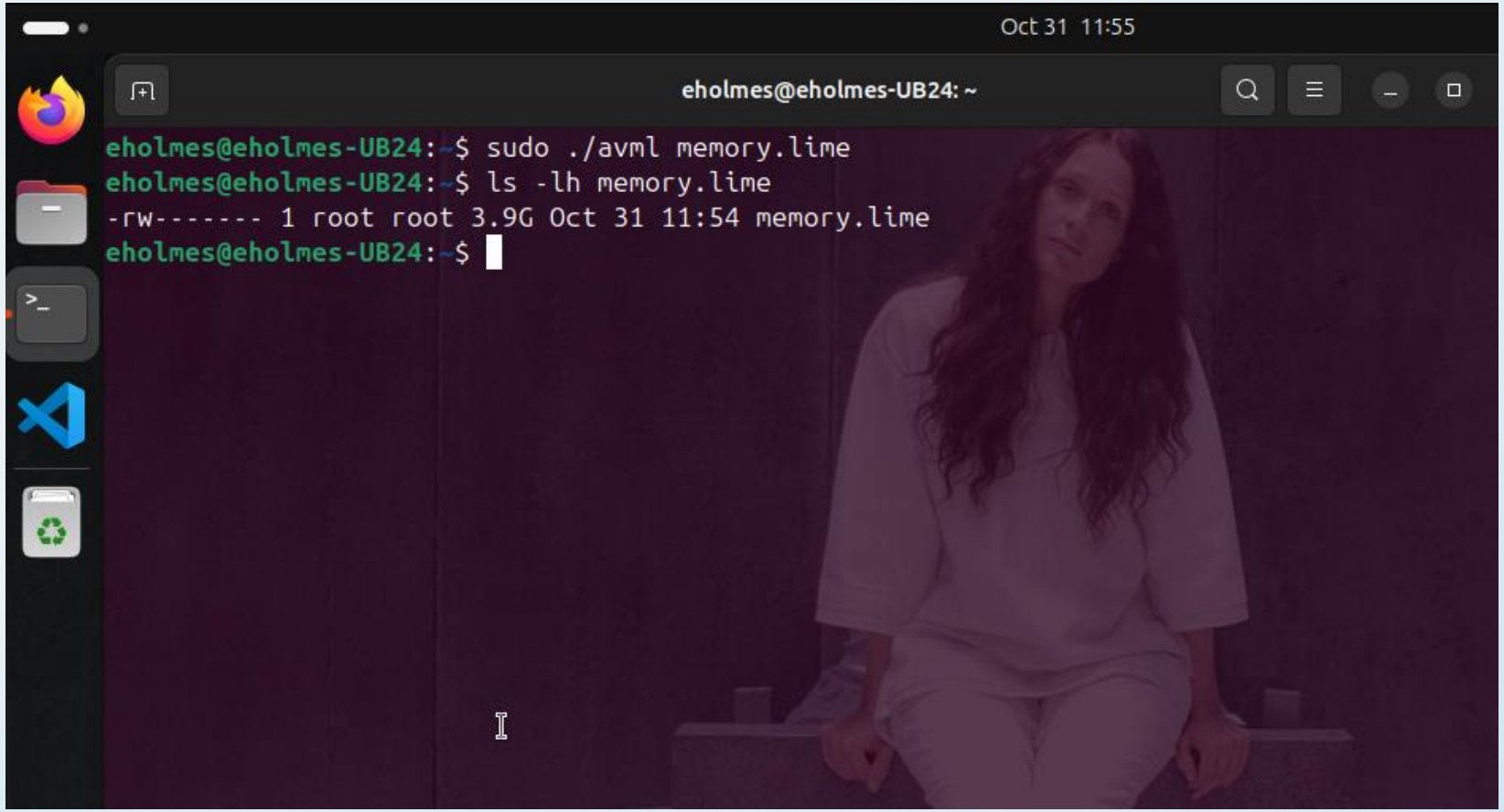
```
PS F:\jumpkit\RAM_Capture\Windows\Comae-Toolkit\x64> .\DumpIt.exe

  DumpIt 3.6.20230117 (X64) (Jan 17 2023)
  Copyright (C) 2007 - 2021, Matt Suiche (msuiche)
  Copyright (C) 2016 - 2021, Comae Technologies DMCC <https://www.comae.com>
  Copyright (c) 2022, Magnet Forensics, Inc. <https://www.magnetforensics.com/>
  All rights reserved.

  Thanks for using DumpIt! Always use Microsoft crash dumps!

    Destination path:           \??\F:\jumpkit\RAM_Capture\Windows\Comae-Toolkit\x64\WIN11-AXVM-20241031-152509.dmp

    Computer name:              WIN11-AXVM


    --> Proceed with the acquisition ? [y/n]
```

DumpIt for Linux



- Open-Source
- Magnet GitHub
- CLI
- Built in Rust
- Compile for specific kernel versions
- Ubuntu & Redhat
- Core dump

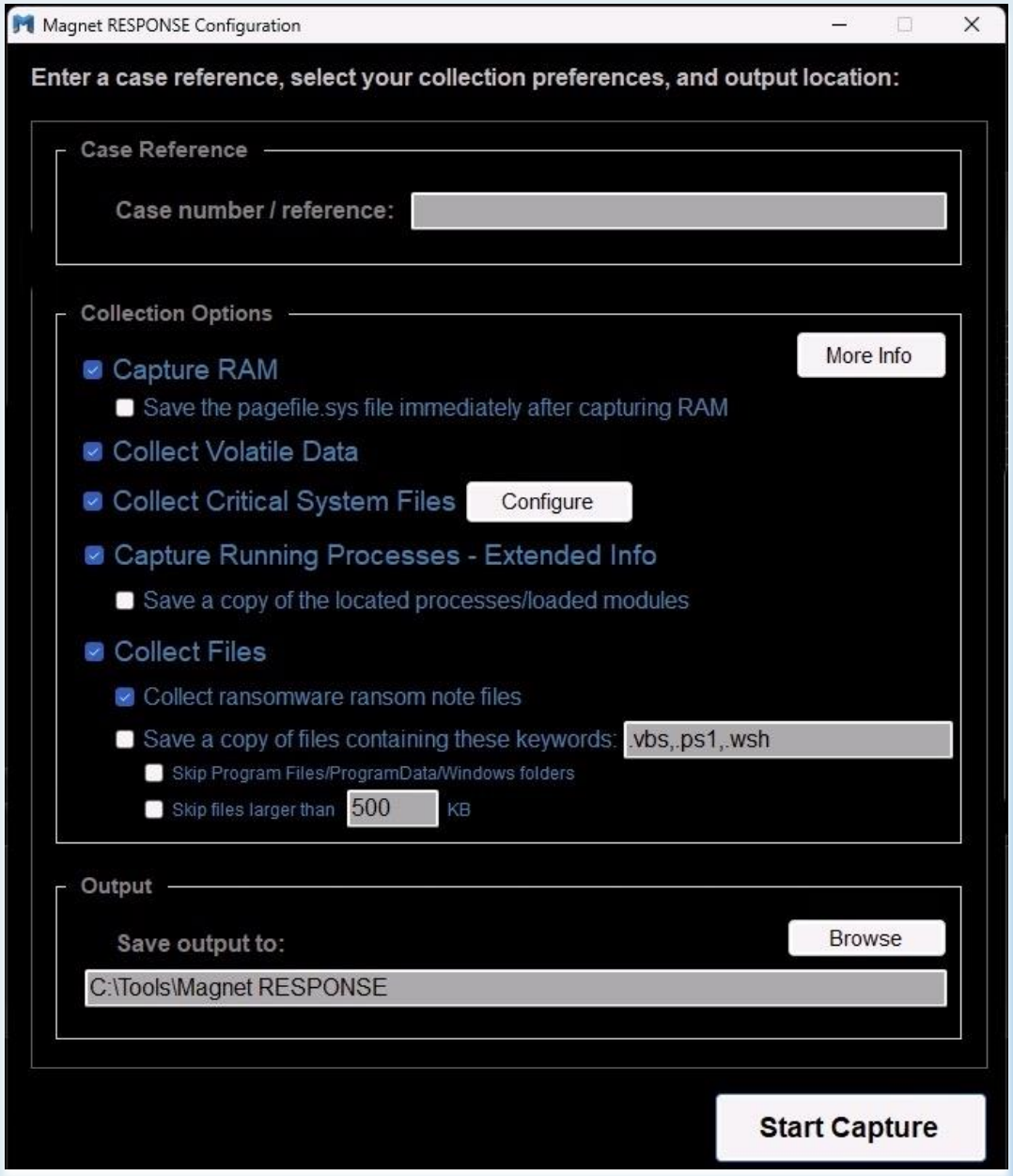
AVML (Acquire Volatile Memory for Linux)



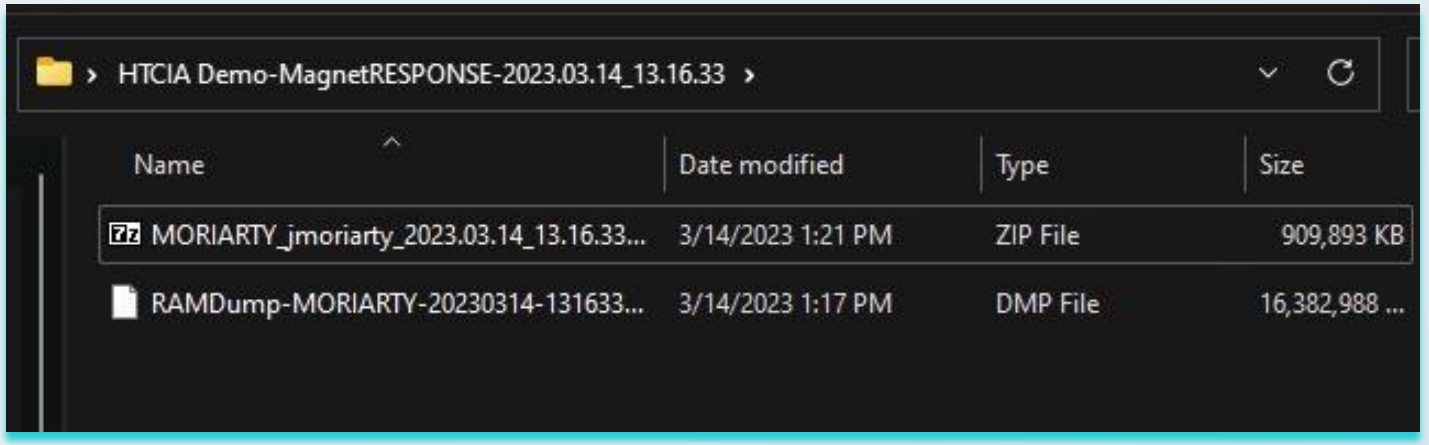
- Open-Source
- Developed by Microsoft
- CLI
- Built in Rust
- Run ready
- Ubuntu, Redhat, Debian, Oracle…
- LIME output

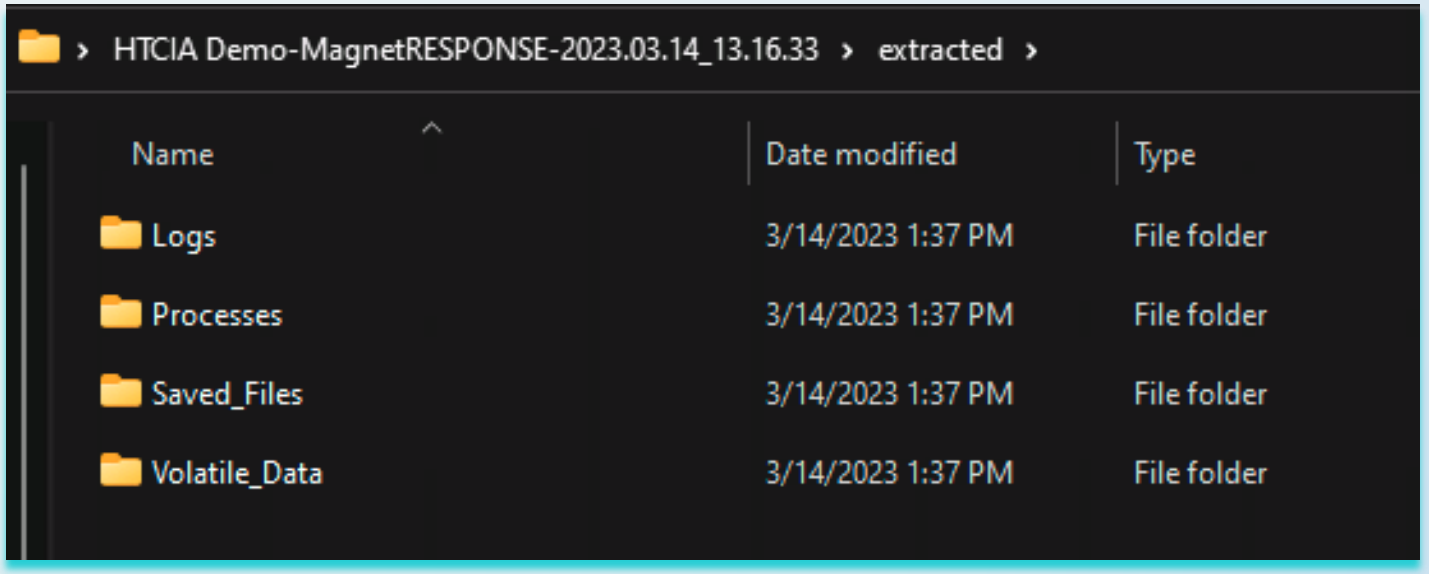
Magnet RESPONSE

- Free triage collection tool
- Intuitive interface
- Collects RAM, Volatile info and Operating System artifacts

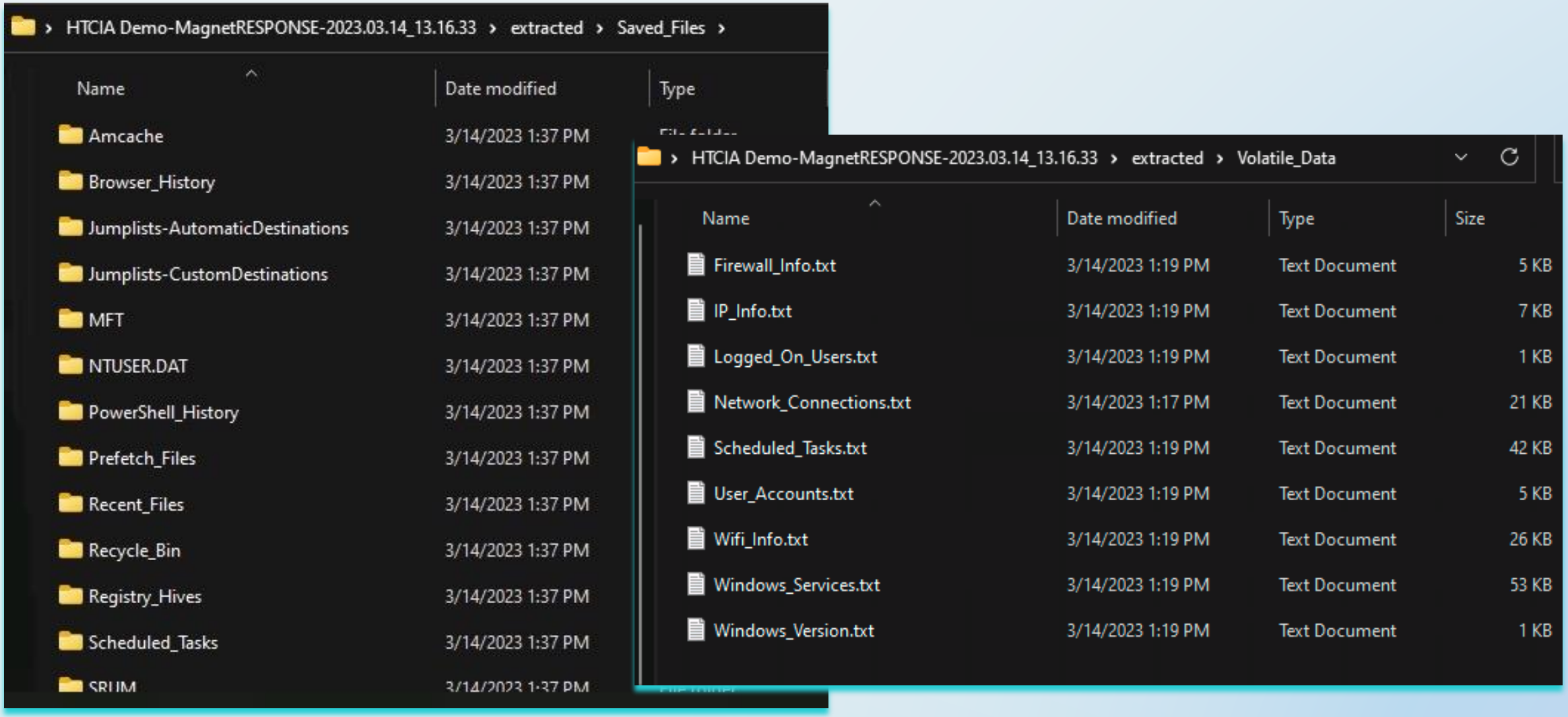


Magnet RESPONSE Output

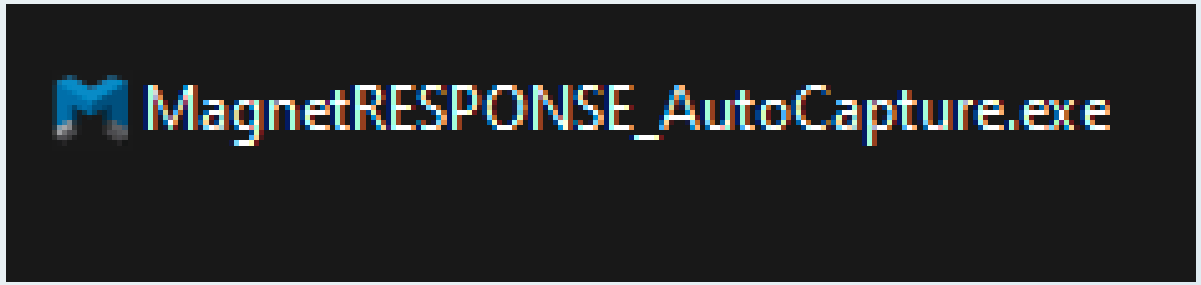


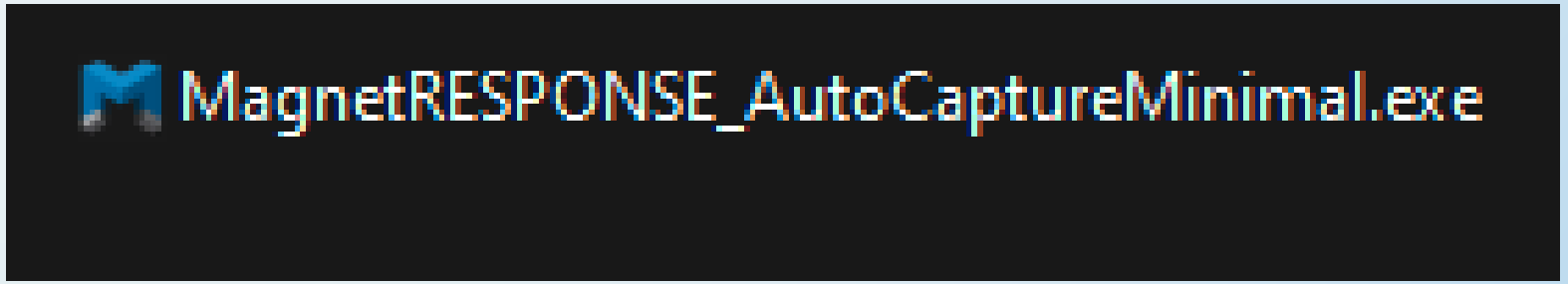


Magnet RESPONSE Output

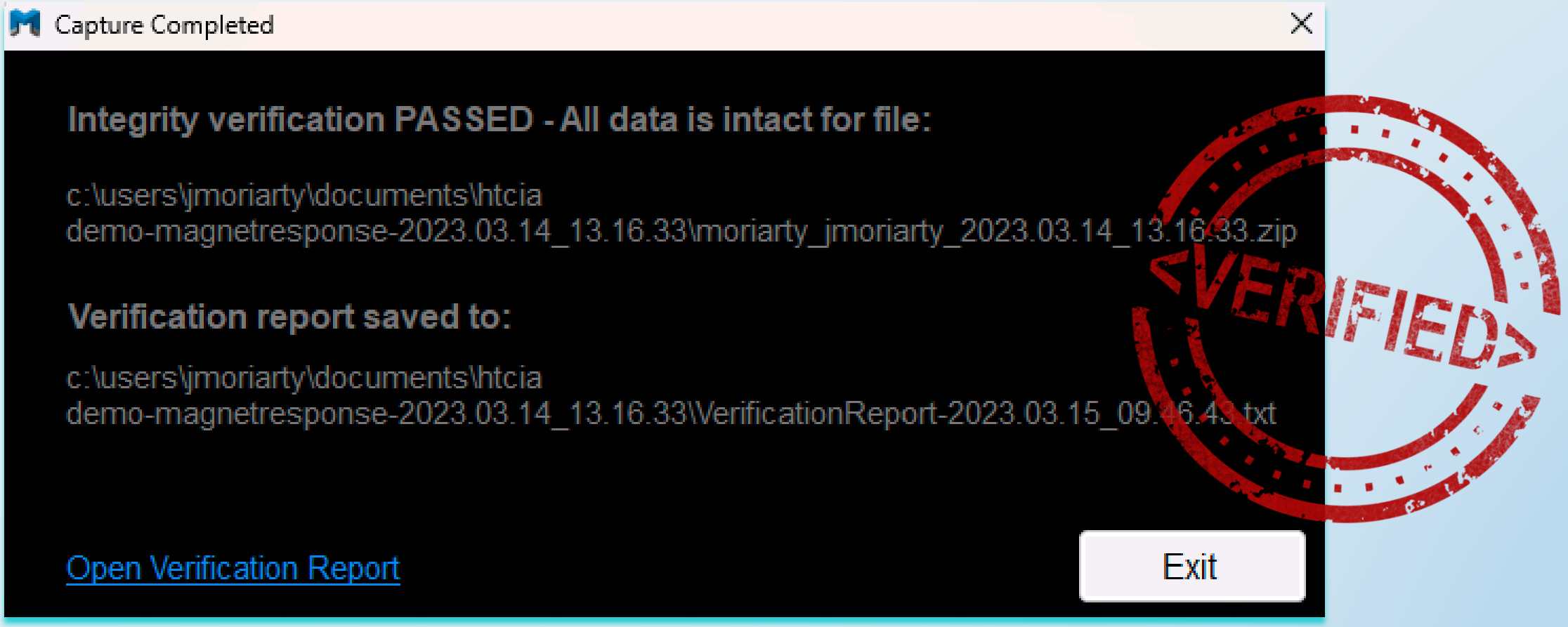


Auto Collect Options





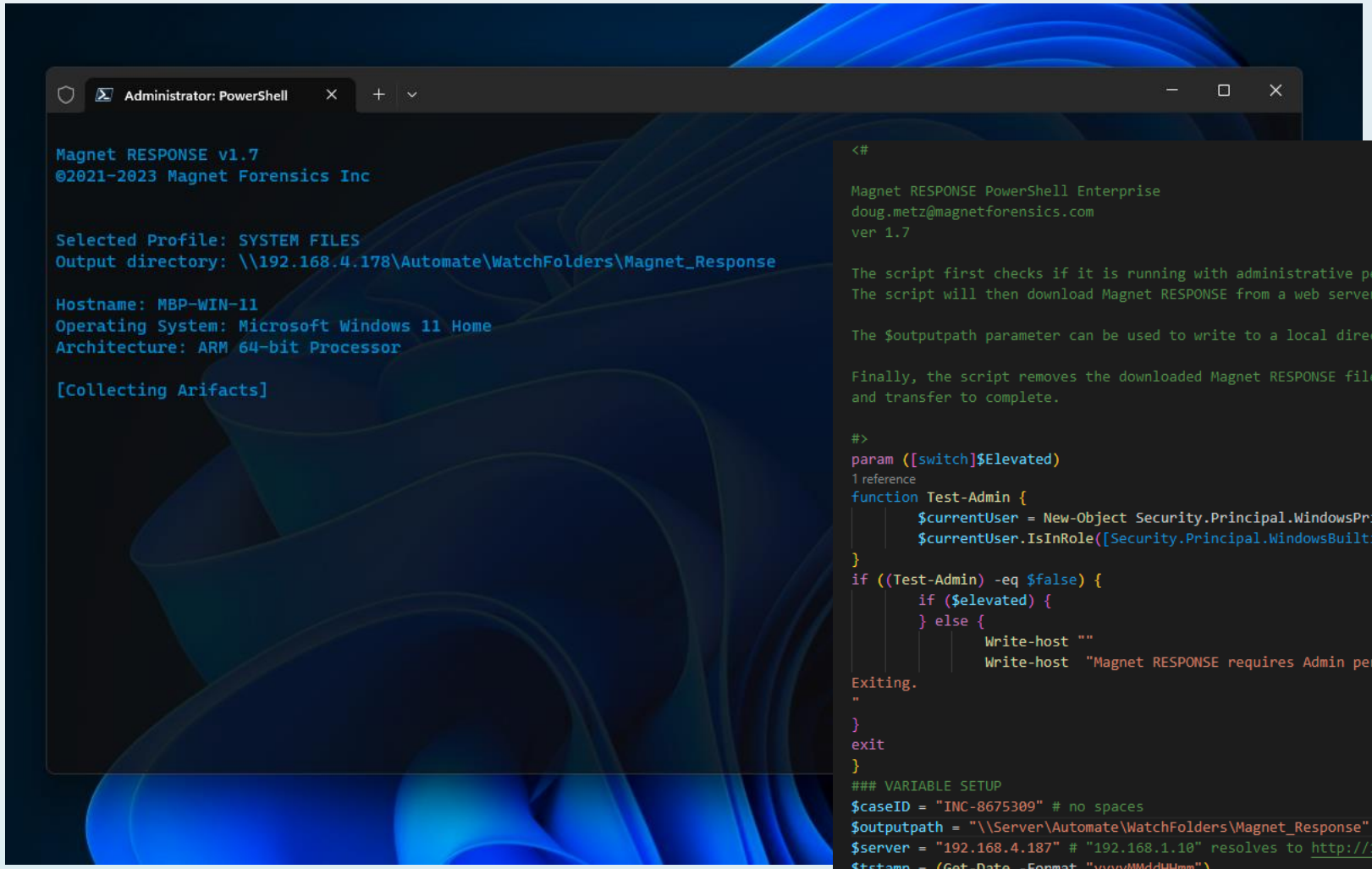
Verifying a Capture Package



Magnet RESPONSE CLI

- /captureram - Enables RAM capture
- /capturepagefile - Enables capture of pagefile.sys file
- /capturevolatile - Enables volatile data capture
- /capturesystemfiles - Enables critical system file collection
- /captureextendedprocessinfo - Enables extended info capture for running processes/loaded modules
- /saveprocfiles - Enables saving copies of running processes/loaded modules. Must be
- used with /captureextendedprocessinfo switch
- /capturefiles:<keyword.csv> - Enables scanning for files with filenames containing specified keywords
- e.g. /capturefiles:secret,badfile,.vbs,confidential
- /skipsystemfolders - Indicates that the Program Files/ProgramData/Windows folders should be skipped when searching for files based on filename keywords. Must be used with /capturefiles
- /maxsize:<file size in KB> - Indicates the maximum file size to collect from hits found using /capturefiles – any files above this size are skipped e.g. /maxsize:500
- /captureransomnotes - Enables the ransomware ransom note collection
- /silent - No GUI output to screen

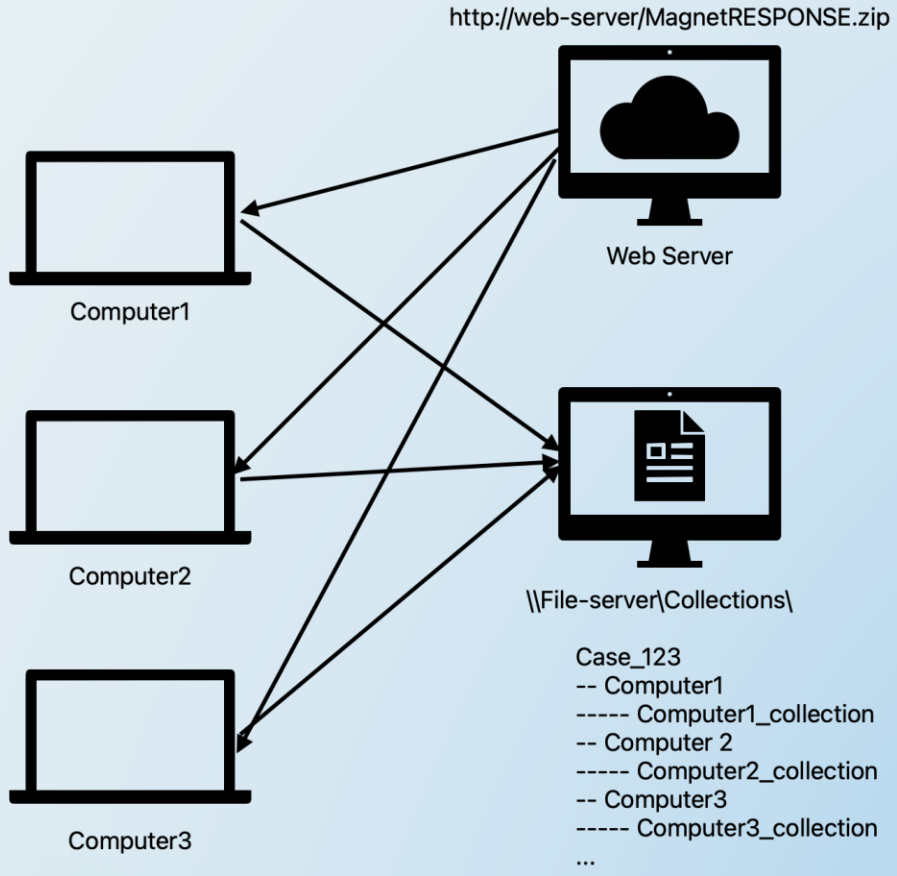
Magnet RESPONSE PowerShell




```powershell
<#

Magnet RESPONSE PowerShell Enterprise
doug.metz@magnetforensics.com
ver 1.7

The script first checks if it is running with administrative permissions and exits if not.
The script will then download Magnet RESPONSE from a web server, extract it, and run with the specified options.

The $outputpath parameter can be used to write to a local directory `C:Temp`, `D:\Output` or network `\\Server\Share`.

Finally, the script removes the downloaded Magnet RESPONSE files and prints the time taken for the collection
and transfer to complete.

#>
param ([switch]$Elevated)
1 reference
function Test-Admin {
        $currentUser = New-Object Security.Principal.WindowsPrincipal $([Security.Principal.WindowsIdentity]::GetCurrent())
        $currentUser.IsInRole([Security.Principal.WindowsBuiltinRole]::Administrator)
}
if ((Test-Admin) -eq $false) {
        if ($elevated) {
        } else {
                Write-host ""
                Write-host  "Magnet RESPONSE requires Admin permissions.
Exiting.
"
}
exit
}
### VARIABLE SETUP
$caseID = "INC-8675309" # no spaces
$outputpath = "\\Server\Automate\WatchFolders\Magnet_Response" # Update to reflect output destination. C:\Temp R:\Output \\Server\Share
$server = "192.168.4.187" # "192.168.1.10" resolves to http://192.168.1.10/MagnetRESPONSE.zip
$tstamp = (Get-Date -Format "yyyyMMddHHmm")
#######
```

Magnet RESPONSE PowerShell

- Web server hosting MagnetRESPONSE.zip
- File server with folder share for collections



Case Variables

```
### VARIABLE SETUP
$caseID = "demo-161" # no spaces
$outputpath = ”\\server\share" # Update to reflect output destination.
$server = "192.168.4.187" # "192.168.4.187" resolves to http://192.168.4.187/MagnetRESPONSE.zip
```

$caseID – Name of your case or incident. (no spaces)

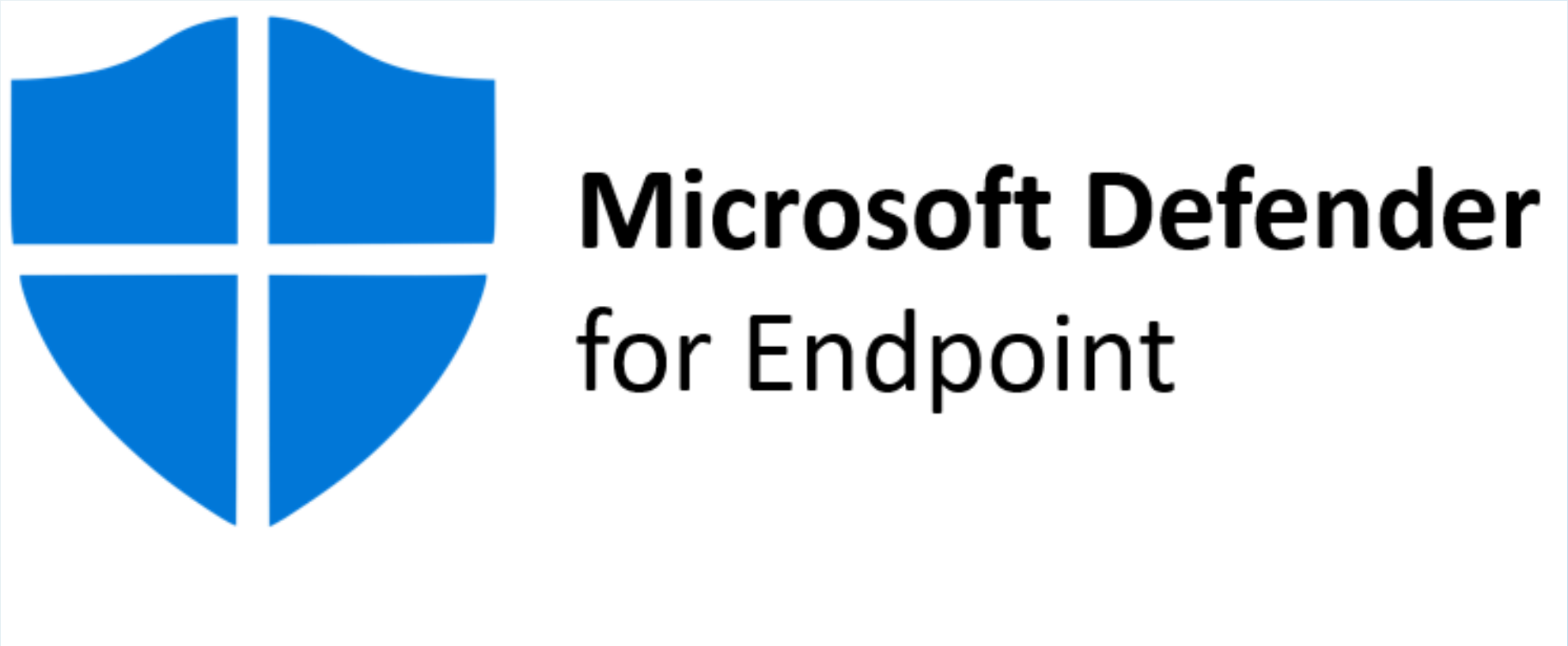
$outputpath – Where the collection output is sent

$server – Address for web server hosting MagnetRESPONSE.zip

Collection Profiles

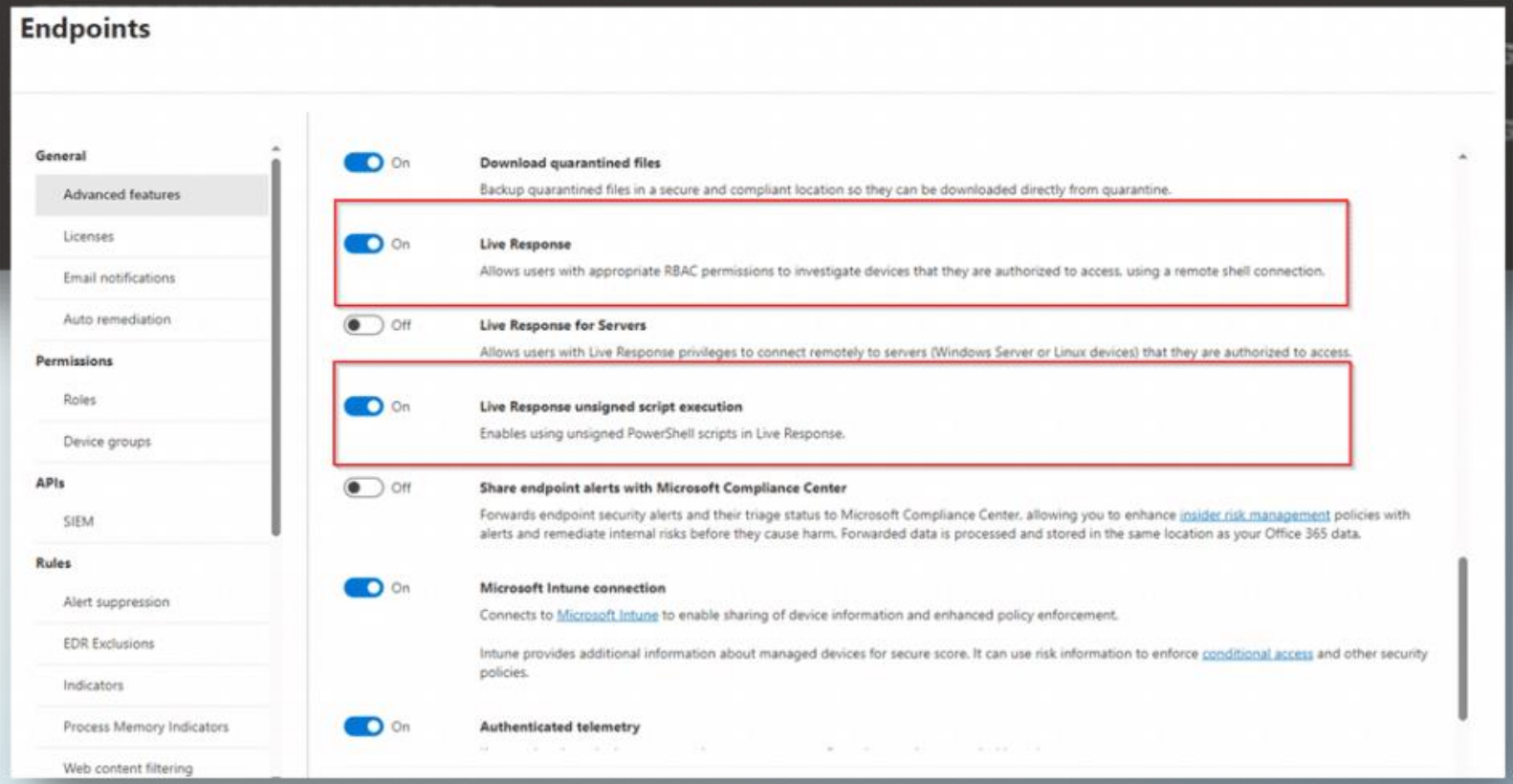
```
#### Extended Process Capture
<#
$profileName = "EXTENDED PROCESS CAPTURE"
$arguments = "/capturevolatile /captureextendedprocessinfo /saveprocfiles"
#>
#### Systen Files

$profileName = "SYSTEM FILES"
$arguments = "/capturesystemfiles"
#>
#### Just RAM
<#
$profileName = "CAPTURE RAM"
$arguments = "/captureram"
#>
```

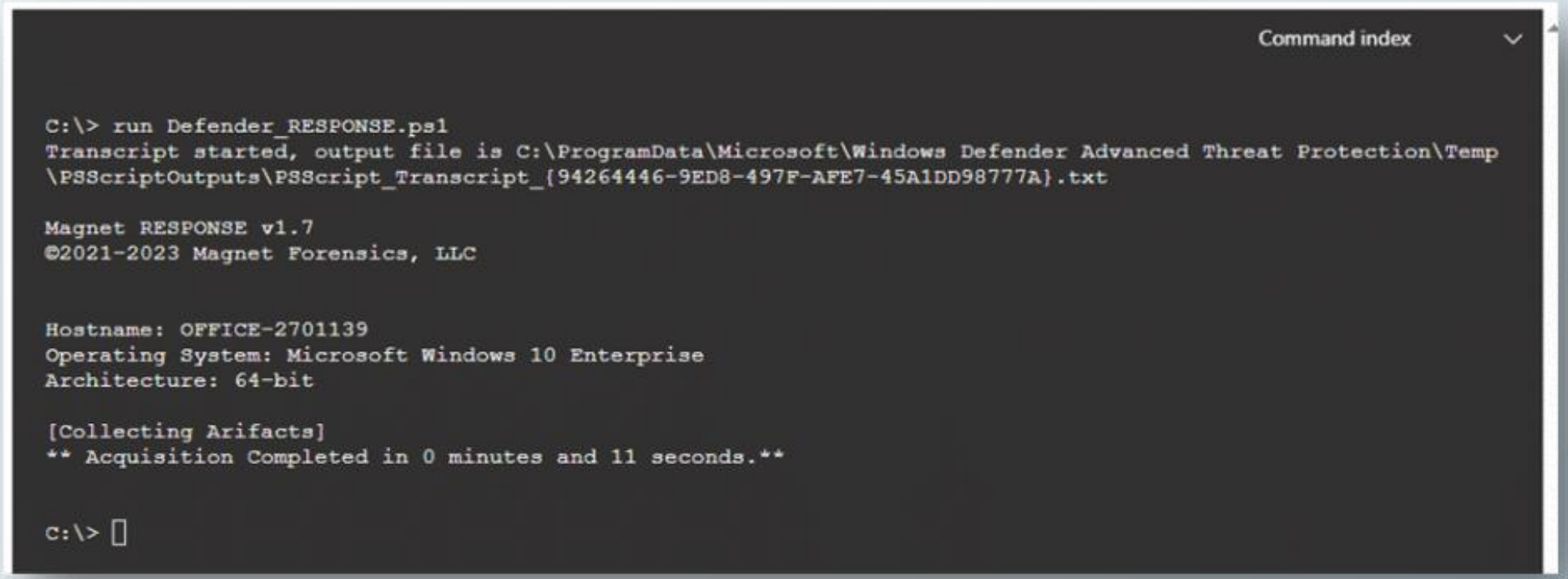
Magnet RESPONSE and



Defender_RESPONSE.ps1

```
C:\> library
File name                Description      Parameters      Parameters description  Uploaded on
                                  Uploaded by
=======================  ===========      ==========      ======================  ===========================
=======================================
Defender_RESPONSE.ps1                                                                          GMT
-0500 (Eastern Standard Time)
MagnetRESPONSE.exe                                                                             GMT
-0500 (Eastern Standard Time)
```





Retrieving the Data from the Defender console:

Once the script finishes, the zipped output will be saved to "C:\Temp\RESPONSE" on the remote machine.

- Navigate to the output folder using the command — cd c:\Temp\RESPONSE
- List files using the "dir" command
- Copy the zip filename
- Download <filename.zip>

Encrypted Disk Detector

```
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vailable at www.magnetforensics.com/legal. //

* Checking physical drives on system... *

Checking PhysicalDrive2 - USB  SanDisk 3.2Gen1 USB Device (123 GB) - Status: OK
Checking PhysicalDrive1 - VMware Virtual NVMe Disk (376 GB) - Status: OK
Checking PhysicalDrive0 - VMware Virtual NVMe Disk (107 GB) - Status: OK

* Completed checking physical drives on system. *

* Now checking logical volumes on system... *

Drive C: (PhysicalDrive0), Drive Type: Fixed, Filesystem: NTFS, Size: 106 GB, Free Space: 16 GB
Drive D: [Label: Data] (PhysicalDrive1), Drive Type: Fixed, Filesystem: NTFS, Size: 376 GB, Free Space: 63 GB
Drive E: [Label: <Error getting label: The device is not ready.>] (CD/DVDRom0), Drive Type: CDRom, Filesystem: Unknown,
Size: Unknown, Free Space: Unknown
Drive F: [Label: DUO] (PhysicalDrive2), Drive Type: Removable, Filesystem: exFAT, Size: 123 GB, Free Space: 122 GB

* Completed checking logical volumes on system. *

* Running Secondary Bitlocker Check... *
* Completed Secondary Bitlocker Check... *

* Checking for running processes... *

* Completed checking running processes. *
```

- CLI
- checks the physical drives for encrypted volumes
- Detects TrueCrypt, PGP, Bitlocker, and other full disk encryption products

Administrator: PowerShell

```
    .',;::cccccc:;.                        ...''''''..'.
   .;ccclllloooddxc.                   .';clooddoolcc:::;:.
   .:ccclllloooddxo.                .,coxxxxxdl:,'..
   'ccccclllooodddd'             .,,'lxkxxxo:'.
   'ccccclllooodddd'         .,:lxOkl,;oxo,.
   ':ccccllloooddo.       .:dkOOOOkkd;''.
   .:ccccllloooddo.   ..;lxkOOOOOkkkd;
   .;ccccllloooodddc:coxkkkkOOOOOOx:.
    'ccccllloooodddxxxxkkkkOOOOx:.
     ,ccclllooooddddxxxxxkkkxlc,.
      ':lllloooodddddxxxxxoc;.
       .';:cloodddddolc:,..
           ''''''''''
```

CyberPipe IR Collection Script v5.0
https://github.com/dwmetz/CyberPipe
@dwmetz | ©2024 bakerstreetforensics.com

Mapping network drive...
Drive is mapped.
Collections directory exists.
Host directory created.

Running MAGNET Response...

Magnet RESPONSE v1.7
©2021-2024 Magnet Forensics Inc

Hostname:	MORIARTY
Operating System:	Microsoft Windows 11 Pro
Architecture:	64-bit
Selected Profile:	Volatile (testing)
Output Directory:	\Collections\MORIARTY-202402131644

Collecting Artifacts...

CyberPipe

CyberPipe (v5)

Functions:

- 🐑 Capture a memory image with MAGNET DumpIt for Windows, (x32, x64, ARM64), or MAGNET RAM Capture on legacy systems;
- 💻 Create a Triage collection with MAGNET Response;
- 🔐 Check for encrypted disks with Encrypted Disk Detector;
- 🔑 Recover the active BitLocker Recovery key;
- 💾 Save all artifacts, output, and audit logs to USB or source network drive.

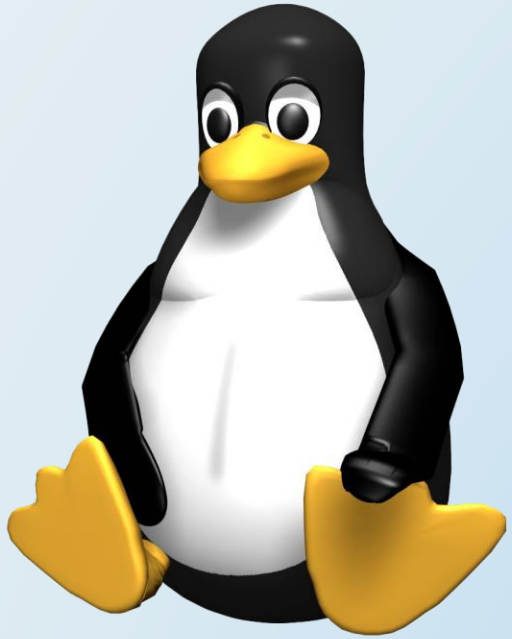
- Volatile Artifacts
- Triage Collection (Volatile, RAM, Pagefile, Triage artifacts)
- Just RAM
- RAM & Pagefile
- or build your own using the RESPONSE CLI options

Prerequisites:

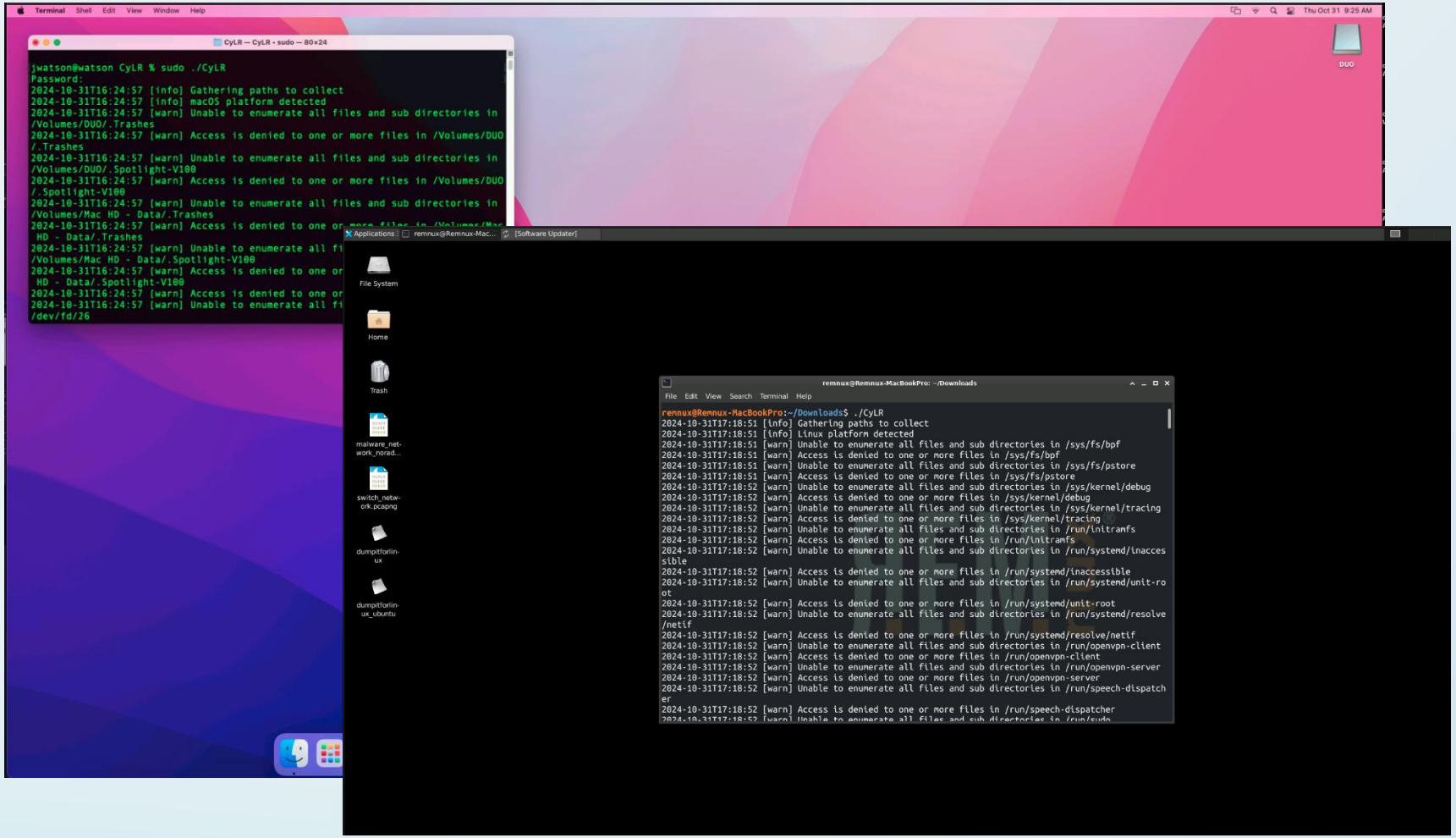
- MAGNET Response
- MAGNET Encrypted Disk Detector

Collection Profiles:

Triage Collection for Mac & ‘Nix



CyLR

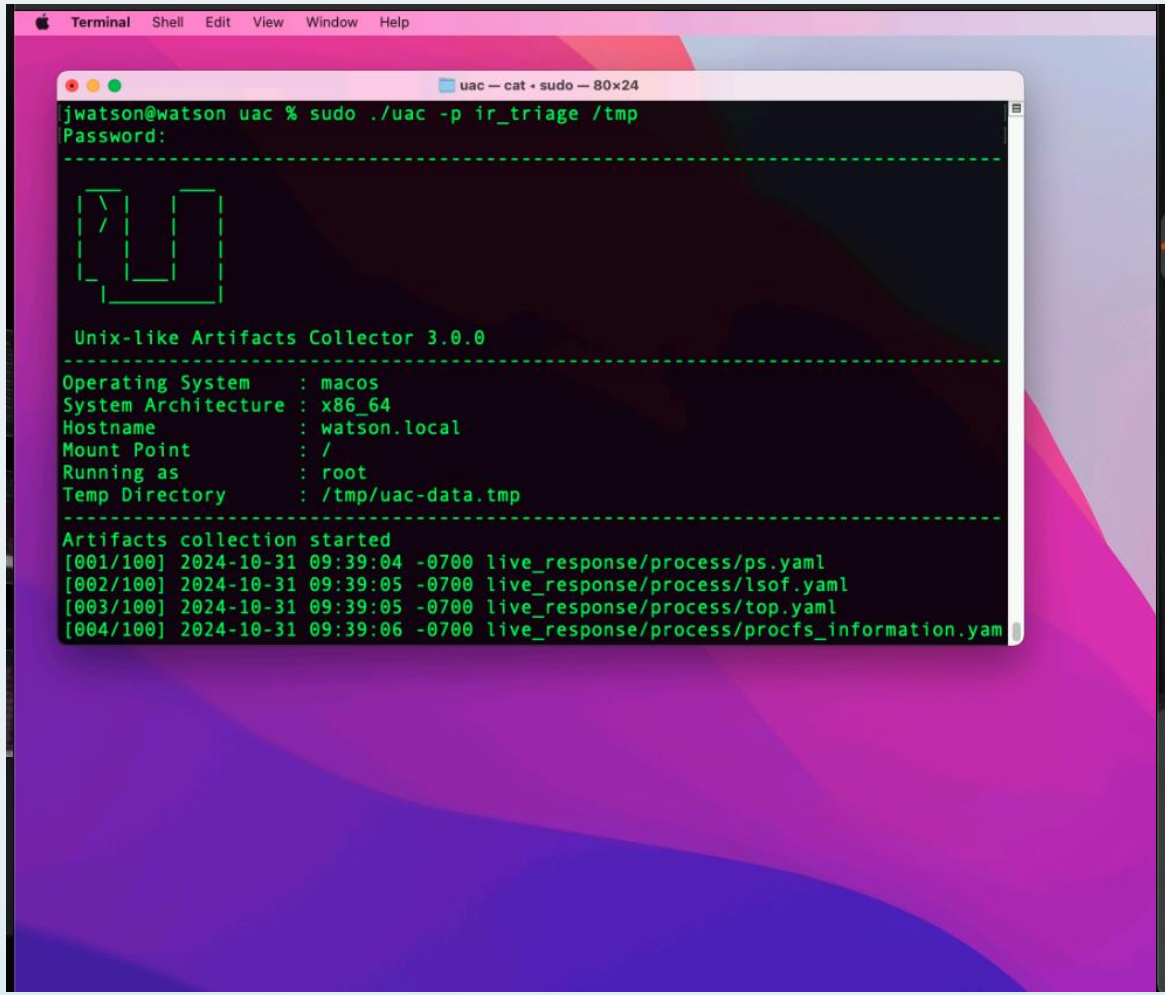


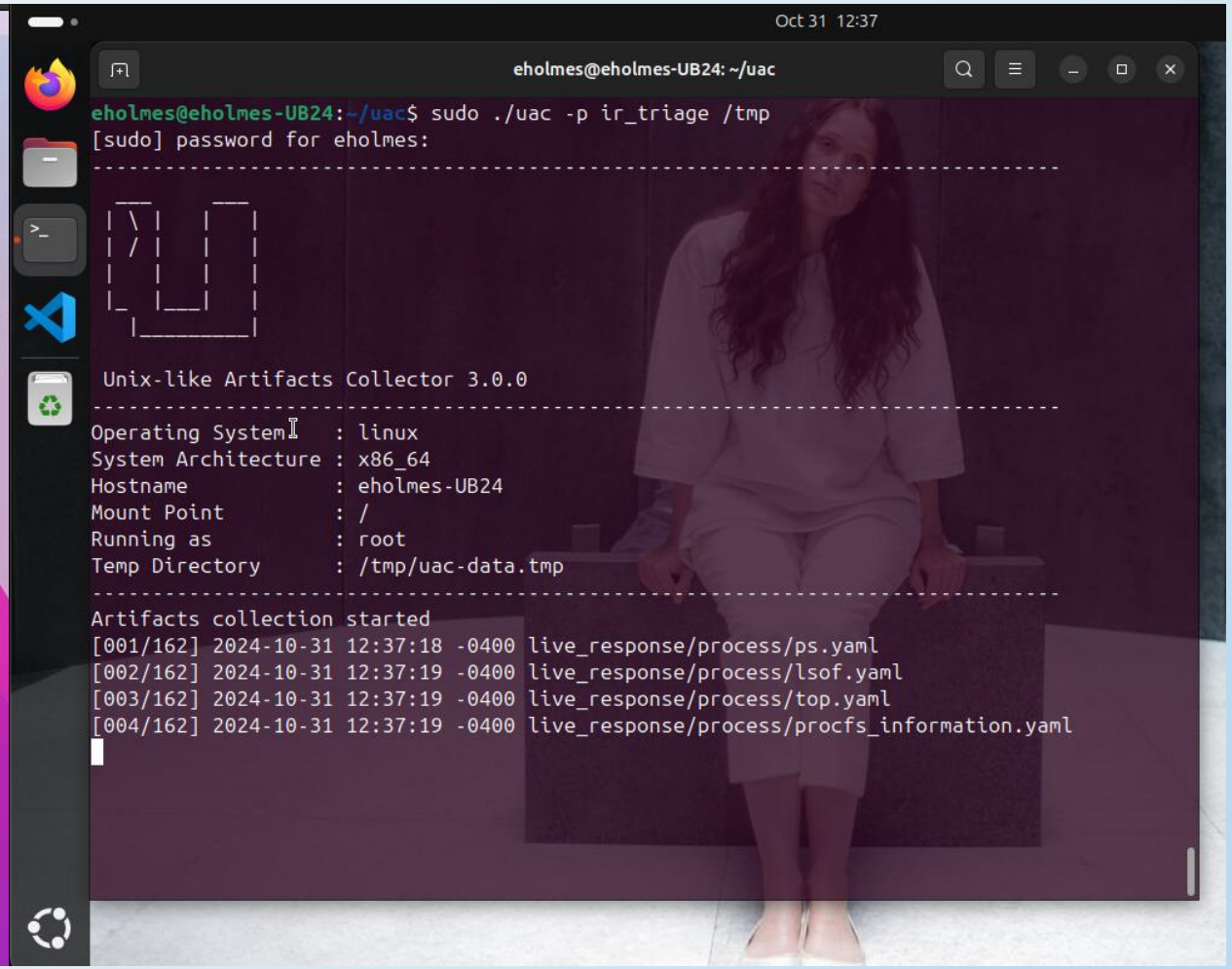
- Triage Collection
- Open-Source
- CLI
- Updated 2021 (v3)
- Windows, Linux, Mac
- Different executables for each
- Output zip file

UAC (Unix-like Artifacts Collector)

- Triage Collection
- CLI
- Open-Source
- Actively maintained
- Linux, Mac, ESXi, OpenBSD, Solaris…+
- Extensible via YAML files

UAC (Unix-like Artifacts Collector)





Continue with

MAGNET AXIOM CYBER™

Sources:

- Magnet Acquire Images (.e01, .raw)
- Magnet RAM Capture Images (.raw)
- Magnet DumpIt for Windows (.dmp, .raw)
- Magnet Response Triage (.zip)
- CyberPipe (.zip, .dmp, .raw)
- CyLR (.zip)
- UAC (.zip)

Enhance the Evidence:

- Magnet.AI
- YARA
- MITRE ATT&CK
- $MFT
- Remote Acquisition
- Cloud Sources
- Co-Pilot

UNLOCKING DFIR: FREE RESOURCES FOR EFFICIENT TRIAGE AND ACQUISITION

Resources:

Magnet Free Tools

Magnet Response: https://www.magnetforensics.com/resources/magnet-response/

Magnet DumpIt for Windows: https://www.magnetforensics.com/resources/magnet-dumpit-for-windows/

Magnet RAM Capture: https://www.magnetforensics.com/resources/magnet-ram-capture/

Magnet Acquire: https://www.magnetforensics.com/resources/magnet-acquire/

Magnet Encrypted Disk Detector: https://www.magnetforensics.com/resources/encrypted-disk-detector/

PowerShell

CyberPipe: https://github.com/dwmetz/CyberPipe

Defender Response PowerShell: https://github.com/MagnetForensics/Magnet-RESPONSE-PowerShell

Ginsu: https://github.com/dwmetz/ginsu

Magnet Response PowerShell: https://github.com/MagnetForensics/Magnet-RESPONSE-PowerShell

Open Source Tools

AVML (Acquire Volatile Memory for Linux): https://github.com/microsoft/avml

CyLR: https://github.com/orlikoski/CyLR

Uac (Unix-like Artifacts Collector): https://github.com/tclahr/uac

Magnet DumpIt for Linux: https://github.com/magnetforensics/dumpit-linux

Products

Magnet Axiom Cyber: https://www.magnetforensics.com/products/magnet-axiom-cyber/

References

Baker Street Forensics https://bakerstreetforensics.com

Cyber Unpacked: https://www.magnetforensics.com/cyber-unpacked/

HTCIA - High Tech Crime Investigators Association https://www.htcia.org

Magnet Response CLI Guide: https://github.com/MagnetForensics/Magnet-RESPONSE-PowerShell/blob/main/Magnet_RESPONSE_CLI_Guide.pdf

Thank You!

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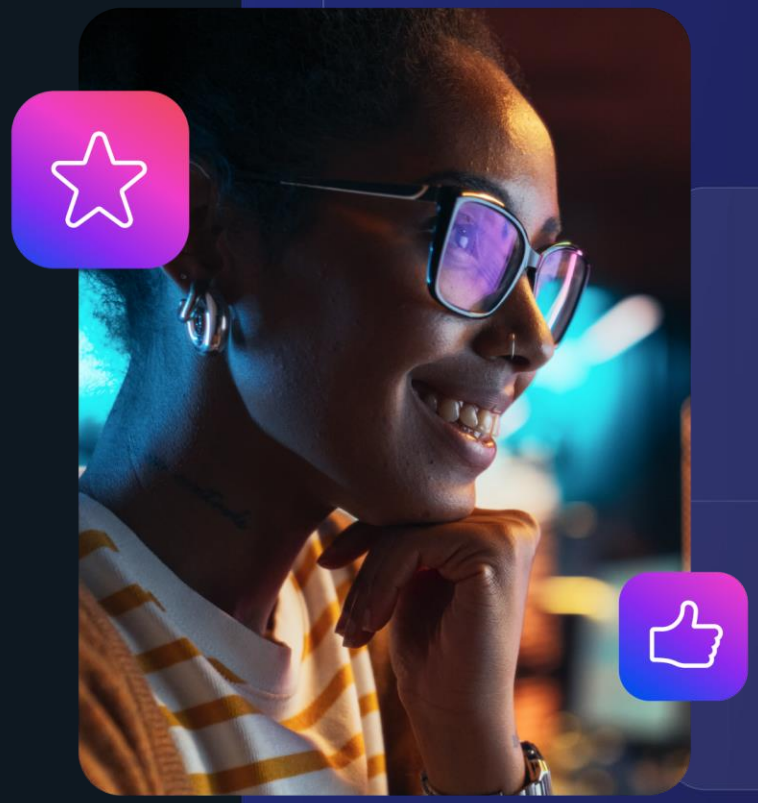
We Want Your Feedback!



Let us know what you thought of this Magnet Virtual Summit session by completing a quick survey. Plus you'll also be able to earn points towards potential prizes for each survey you complete.

Thank you!

MVS