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Stronger Together

SESSION ID: LAB3-T01

Attack, Detect, and Respond with the C2 Matrix and Multiple C2 Frameworks

#RSAC

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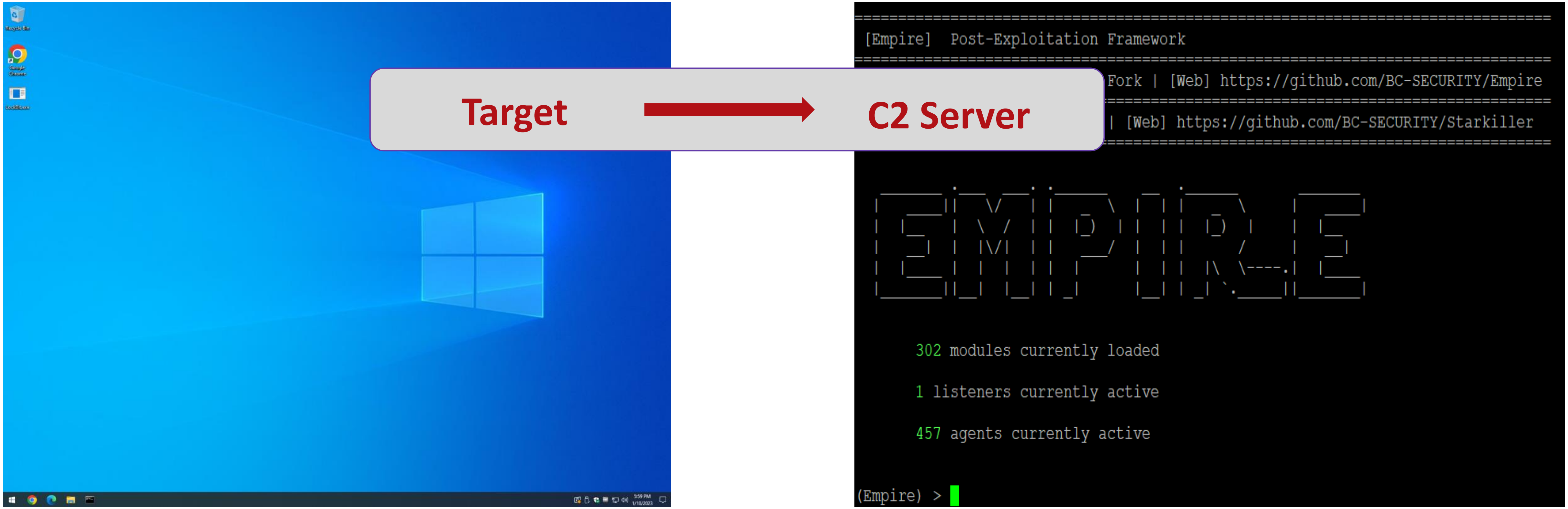
T1033 – User Discovery: Jorge Orchilles

- SANS Principal Instructor and Author of SEC565: Red Team Operations and Adversary Emulation
- Director – Vulnerability Management, Pen Test, Red Team, Breach and Attack Simulation, Purple Team, and Adversary Emulation
- Creator of Purple Team Exercise Framework and C2 Matrix
- Contributor to ATT&CK, Atomic Red Team, CVSSv3, and others
- ISSA Fellow, NSI Technologist Fellow
- Soccer/Football Fan: HALA MADRID

TA0011 – Command and Control (C2)

“techniques that adversaries may use to communicate with systems under their control within a victim network" - MITRE ATT&CK®



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================================================================================
 [Empire]  Post-Exploitation Framework
================================================================================
                                   Fork | [Web] https://github.com/BC-SECURITY/Empire
================================================================================
                                  | [Web] https://github.com/BC-SECURITY/Starkiller
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       302 modules currently loaded

       1 listeners currently active

       457 agents currently active


(Empire) >
```

Listeners

- A command and control (C2) server is an attacker-controlled system that is used to communicate with implants
- C2 servers "listen", serve tasks, and retrieve the results from the registered implants
- A variety of methods to establish network communications or "channels“
  - HTTP/S (network egress)
  - DNS (network egress)
  - TCP (peer-to-peer)
  - SMB (peer-to-peer)

C2 Client

- A listener needs a client to connect to it for command and control
- Depending on framework/tool they may be called stagers, payloads, implants, agents, and/or grunts
- This is the code that will run on the target system and communicate to the listener over the respective channel
- Many C2 frameworks will generate the client in a variety of different formats

C2 Frameworks

- There are so many C2 frameworks we created a C2 Matrix to compare them
- Google sheet of most C2 frameworks
- Documents capabilities and limitations of each framework
- www.thec2matrix.com

Demo of C2 Matrix

https://thec2matrix.com/

SANS Slingshot C2 Matrix Edition

- Free virtual machines from SANS with multiple pre-installed tools
- C2 Matrix Edition aims to aid learning of C2 frameworks and get straight to testing C2s in your organization
- Used in multiple SANS courses
- New release today for RSAC!
- https://www.sans.org/tools/slingshot/
- https://howto.thec2matrix.com/slingshot-c2-matrix-edition

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Hands On Time

“Apply” Slide

- Next week you should:
  - Ask what C2 frameworks the cyber security teams are tracking
- In the first three months following this presentation you should:
  - Run a Purple Team Exercise leveraging a C2 that is likely to be used against your organization
- Within six months you should:
  - Establish a Purple Team Program to test other C2 frameworks, adversary behaviors, and tactics, techniques, and procedures (TTPs)