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Practical No: 10

Date Of Performance: 01/10/2025

Aim: To Set up Snort Tool and study the logs.

Lab Outcome: To develop comprehensive theoretical understanding of keyloggers, their deployment mechanisms, data capture techniques, and implement best practices for detection, removal, and prevention.

Theory:

Introduction to Snort

Snort is a powerful open-source Intrusion Detection and Prevention System (IDS/IPS). It performs real-time traffic analysis, packet logging, and can be configured to detect a wide range of attacks, such as buffer overflows, stealth port scans, and malware. It operates by matching network traffic against a set of user-defined rules.

Core Components:

- Packet Decoder: Captures and prepares network packets from various interfaces (Ethernet, Wi-Fi) for processing.
- Pre-processors: Normalize and analyse traffic for anomalies that complex attacks might use to evade detection (e.g., packet fragmentation, TCP stream reassembly).

- Detection Engine: The core of Snort. It analyses decoded packets using a set of predefined rules to identify malicious activity.
- Logging and Alerting System: Generates alerts and logs packet data based on the detection engine's findings. Logs can be stored in various formats (e.g., unified2, ASCII).

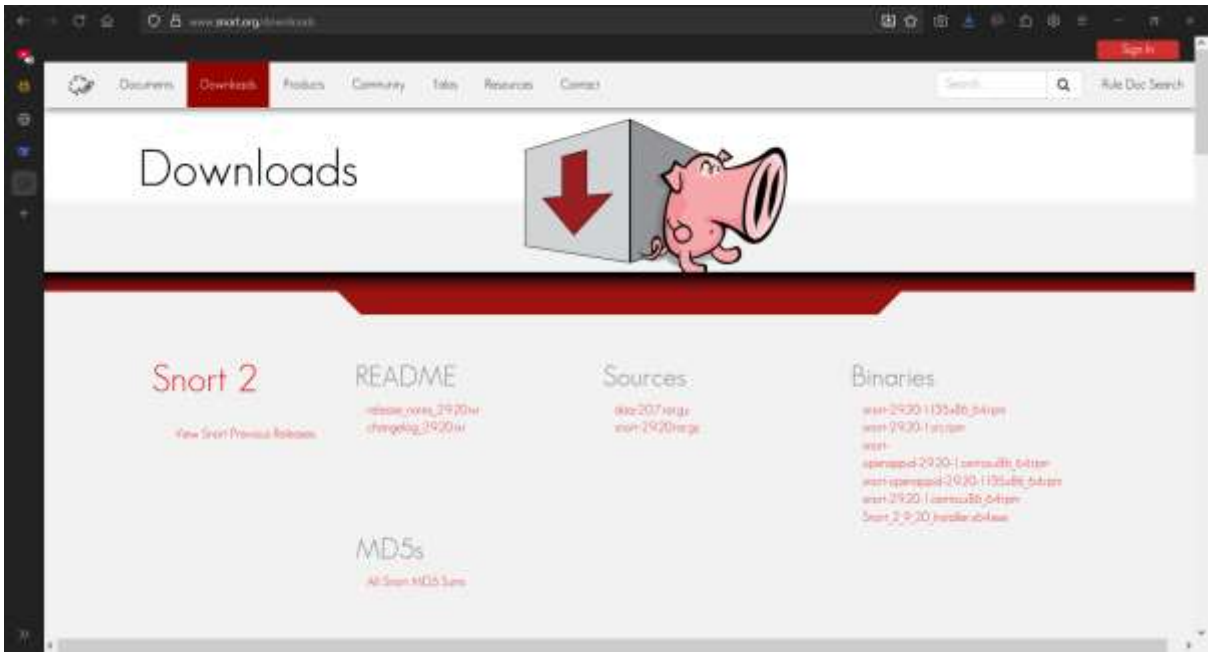
Key Operational Modes:

- Sniffer Mode: Reads and displays network packets to the console. Useful for basic traffic inspection.
- Packet Logger Mode: Captures and logs packets to disk for later analysis.
- Network Intrusion Detection System (NIDS) Mode: The primary mode. Analyses traffic against a rule set and generates alerts and logs for suspicious activity.

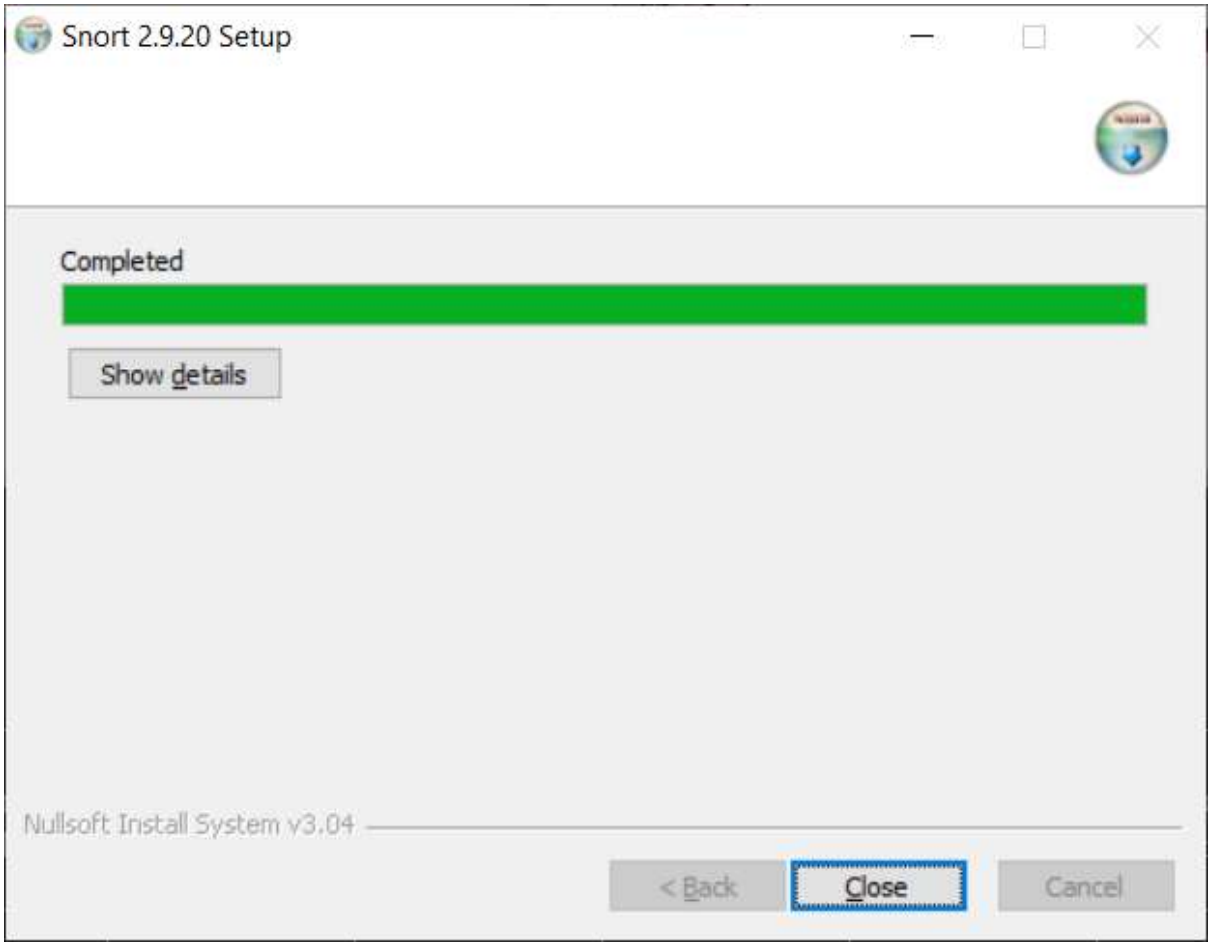
Studying Snort Logs

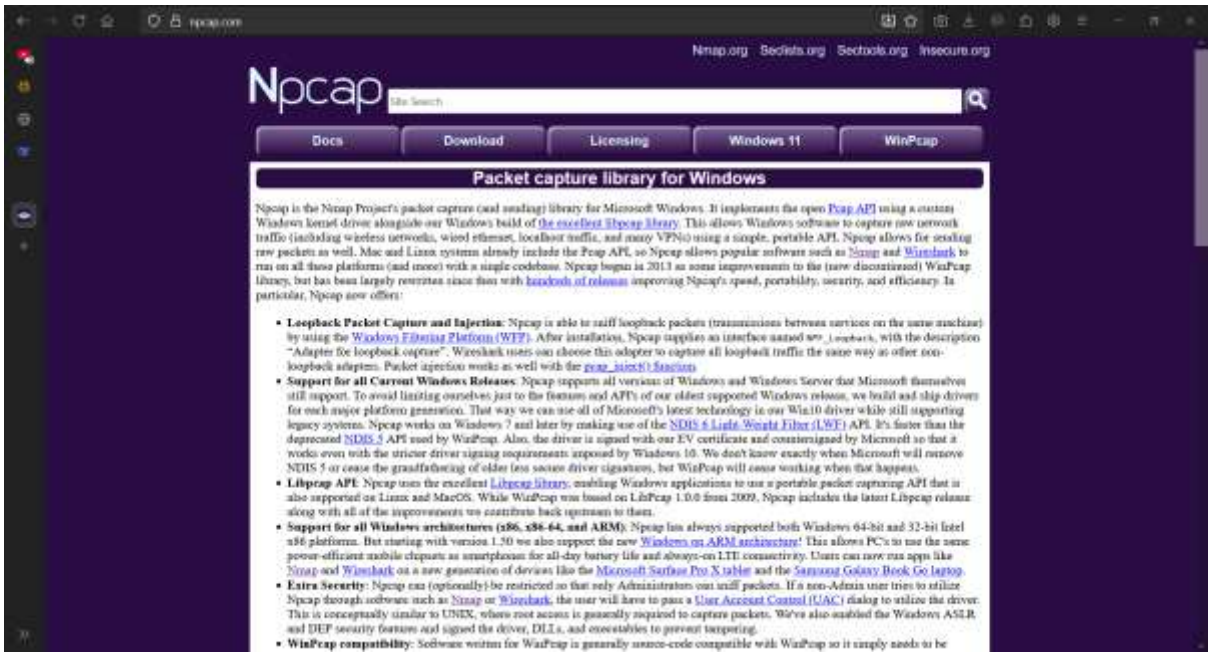
After running Snort in NIDS mode, you must analyse the output to identify threats.
Default Log Location: /var/log/snort/
Log Formats:

- Alert File (alert): Contains a summary of triggered alerts, including timestamp, source/destination IPs, and the alert message.
- Unified2 Binary Logs: Efficient, binary format logs that require tools like barnyard2 or u2spewfoo for reading.
- PCAP Logs: Full packet capture data, which can be analysed in-depth using tools like Wireshark.



Downloading Snort





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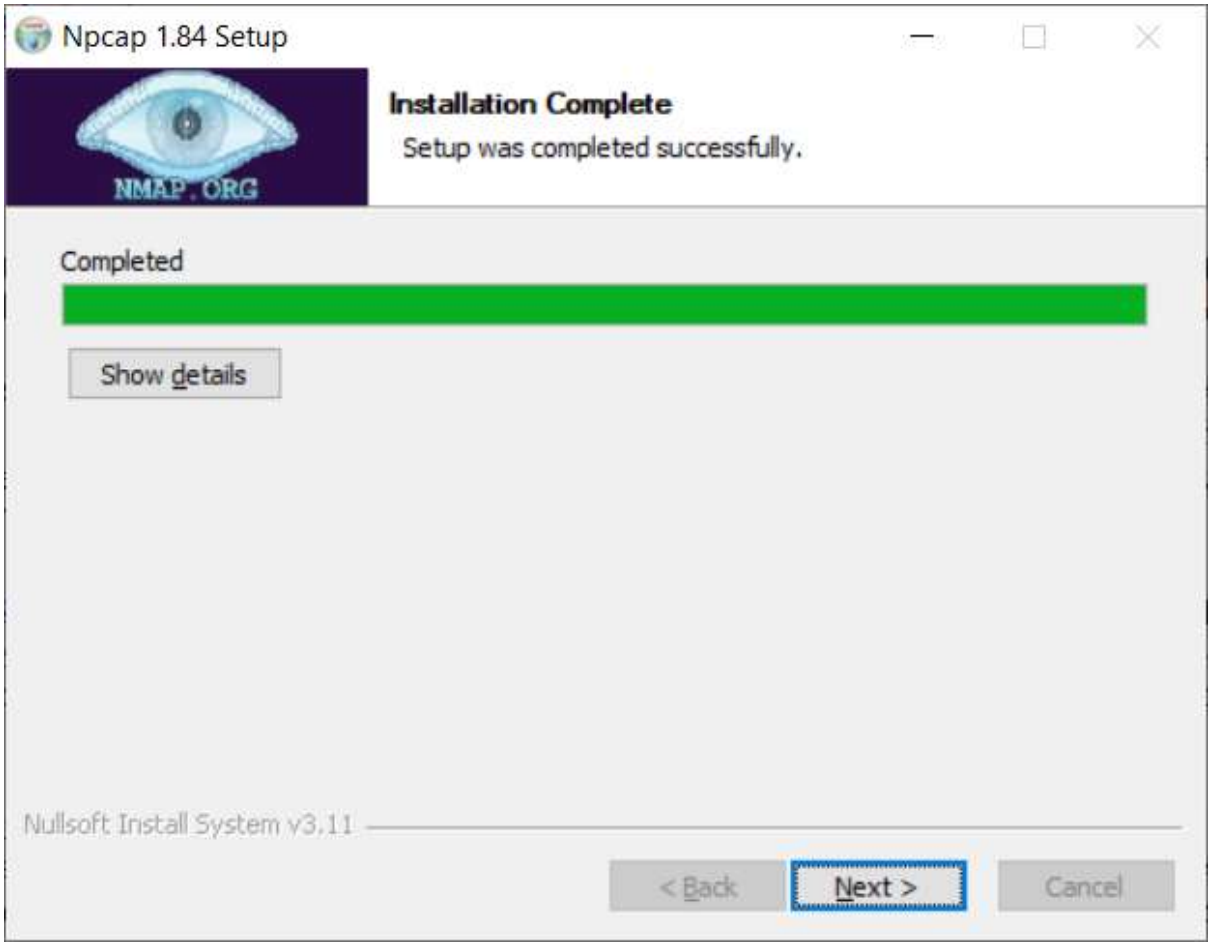
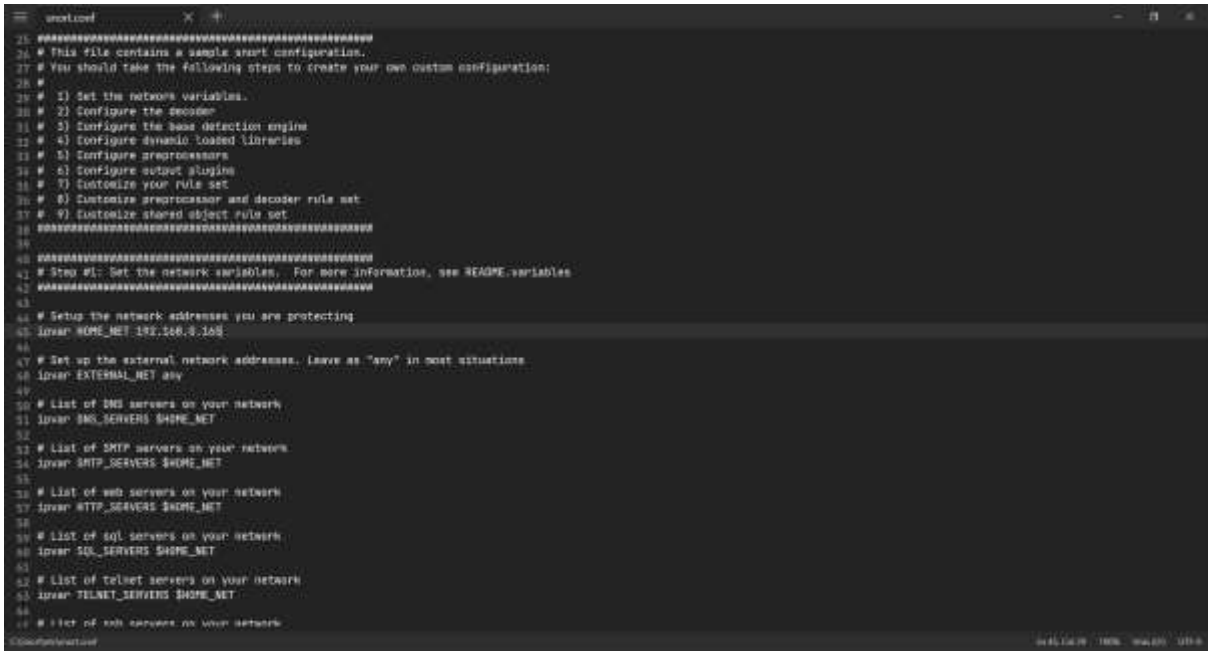
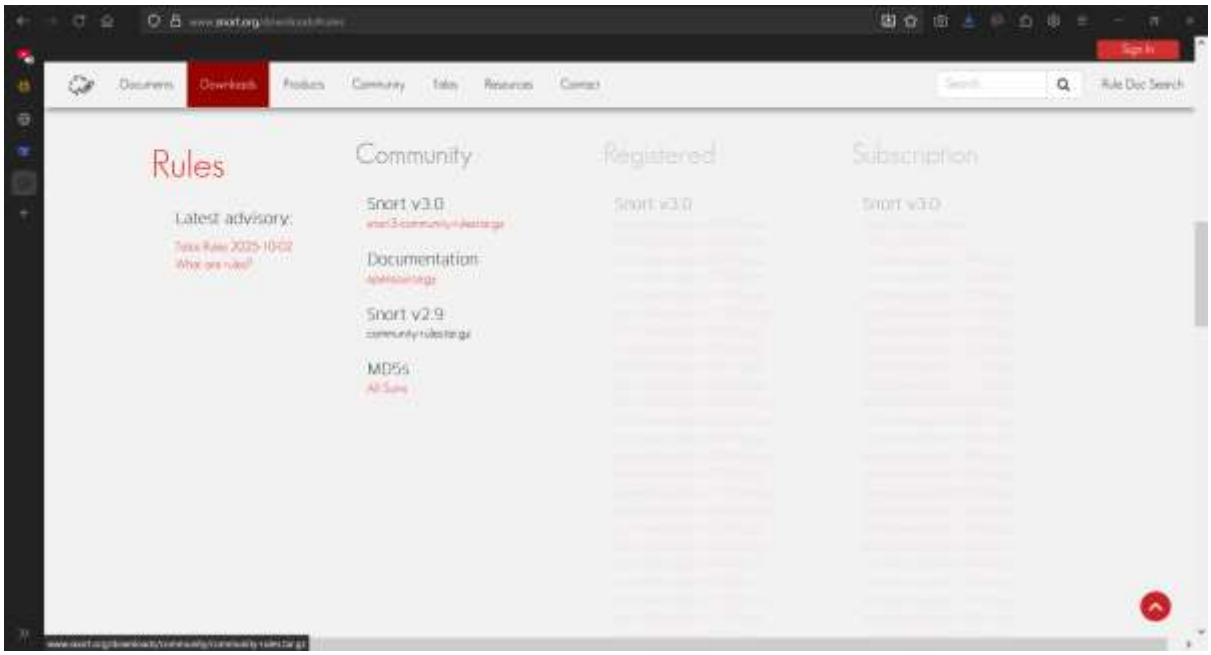
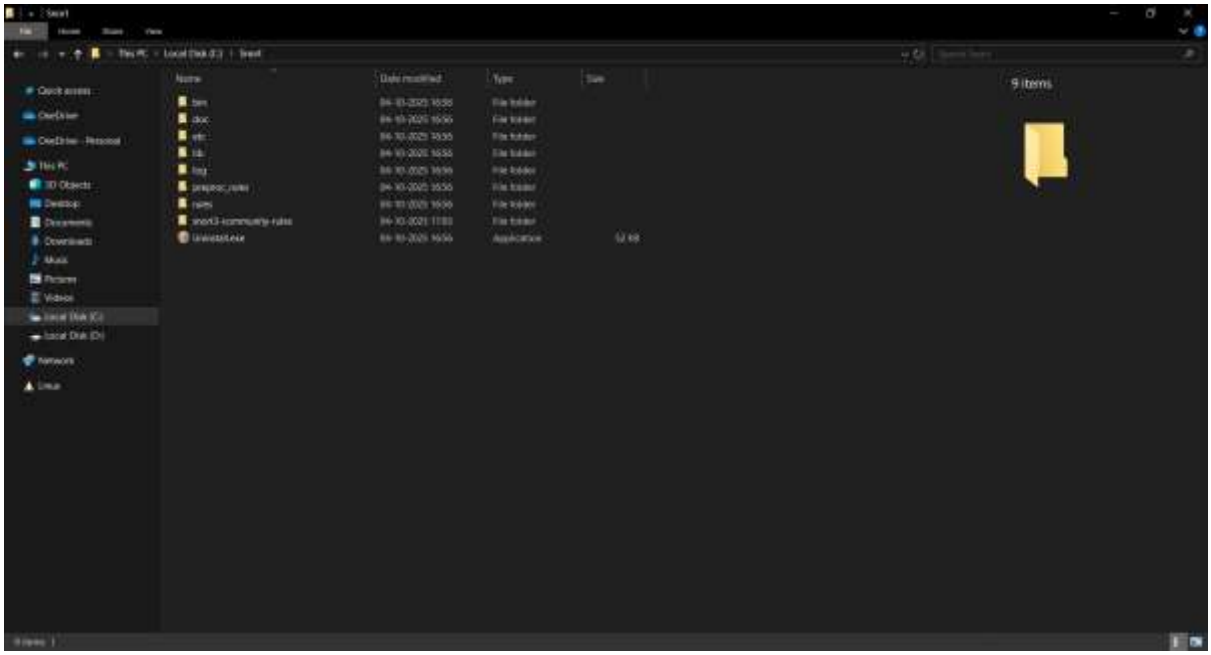




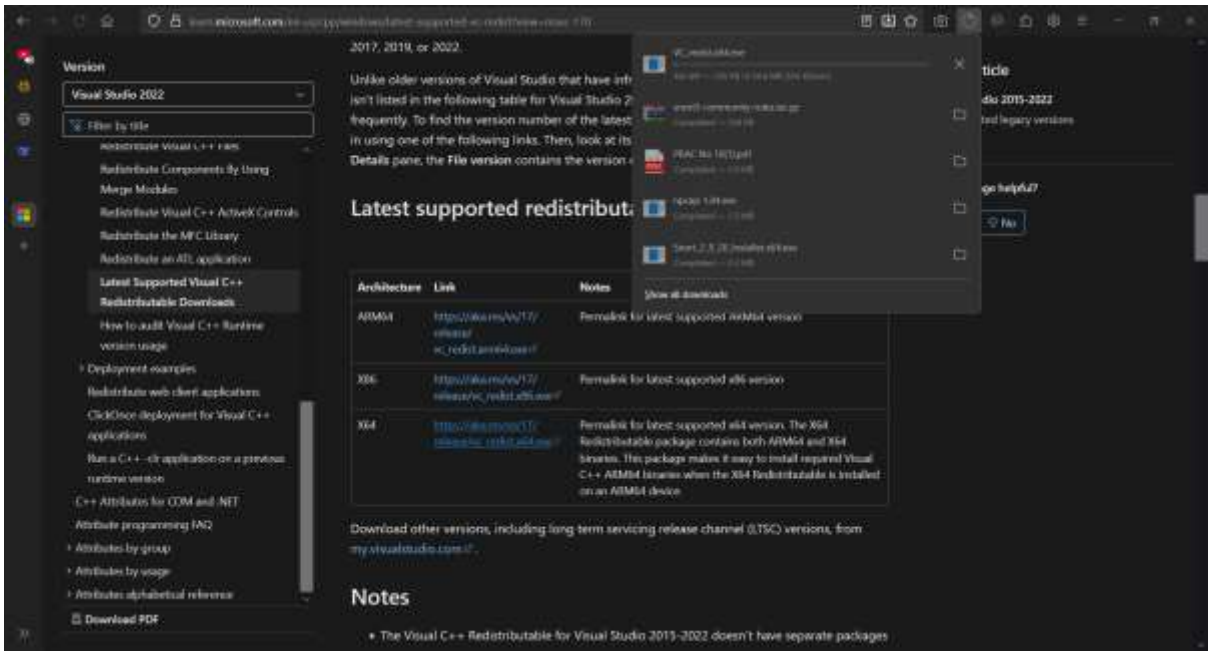
Configuring snort.conf



Downloading Snort Rules



Extracted and pasted rules



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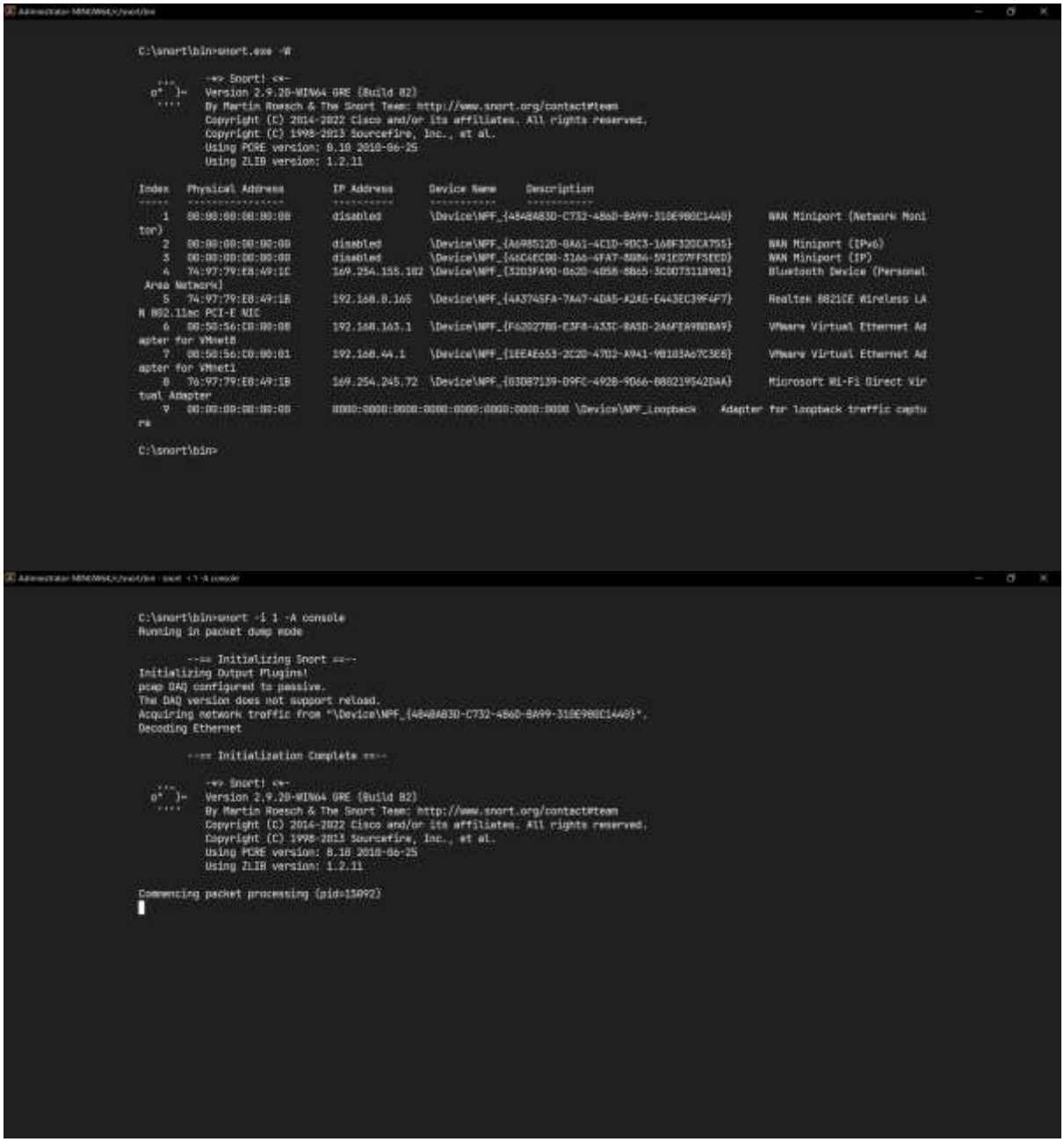

Executing Snort.exe

Performance (7M)	Journal (3M)	Lab Ethics (2M)	Attendance (3M)	Total (15M)	Faculty Signature