

Network Security Monitoring

Wireshark	tcpdump
<div><div>Description:</div><div>A network protocol analyzer that captures and analyzes network traffic in real-time.</div></div> <div><div>Key Features:</div><div>Packet capture, protocol dissection, VoIP analysis, live data capture.</div></div> <div><div>Common Uses:</div><div>Troubleshooting network issues, analyzing network security, examining protocol implementations.</div></div> <div><div>Capture Filter:</div><div><code>tcp port 80</code> (HTTP traffic), <code>ip.addr == 192.168.1.1</code> (Specific IP address)</div></div> <div><div>Display Filter:</div><div><code>http.request.method == "POST"</code> (POST requests), <code>tcp.analysis.retransmission</code> (TCP Retransmissions)</div></div> <div><div>Command Line:</div><div><code>tshark -i eth0 -w capture.pcap</code> (Capture to file), <code>tshark -r capture.pcap</code> (Read from file)</div></div>	<div><div>Description:</div><div>A command-line packet analyzer that captures network traffic.</div></div> <div><div>Key Features:</div><div>Packet capture, filtering, analysis, and saving to file.</div></div> <div><div>Common Uses:</div><div>Network troubleshooting, security analysis, and packet inspection.</div></div> <div><div>Basic Syntax:</div><div><code>tcpdump -i eth0</code> (Capture on interface eth0)</div></div> <div><div>Filters:</div><div><code>tcpdump port 80</code> (HTTP traffic), <code>tcpdump src 192.168.1.1</code> (Source IP address)</div></div> <div><div>Saving Capture:</div><div><code>tcpdump -i eth0 -w capture.pcap</code> (Save to capture.pcap file)</div></div>

Vulnerability Scanning and Penetration Testing

Nmap	Nessus	Metasploit
<div><div>Description:</div><div>A network scanner used to discover hosts and services on a computer network by sending packets and analyzing the responses.</div></div> <div><div>Key Features:</div><div>Host discovery, port scanning, service version detection, OS detection.</div></div> <div><div>Common Uses:</div><div>Network inventory, security auditing, vulnerability detection.</div></div> <div><div>Basic Scan:</div><div><code>nmap target_ip</code> (Scan target IP address)</div></div> <div><div>Port Scan:</div><div><code>nmap -p 1-100 target_ip</code> (Scan ports 1-100)</div></div> <div><div>OS Detection:</div><div><code>nmap -O target_ip</code> (Detect operating system)</div></div> <div><div>Service Version Detection:</div><div><code>nmap -sV target_ip</code> (Detect service versions)</div></div>	<div><div>Description:</div><div>A comprehensive vulnerability scanner that identifies vulnerabilities, misconfigurations, and malware.</div></div> <div><div>Key Features:</div><div>Vulnerability scanning, compliance auditing, configuration auditing, malware detection.</div></div> <div><div>Common Uses:</div><div>Identifying and remediating vulnerabilities, ensuring compliance with security policies.</div></div> <div><div>Scan Types:</div><div>Basic Network Scan, Web Application Scan, Compliance Checks</div></div> <div><div>Reporting:</div><div>Generates detailed reports of vulnerabilities and their severity.</div></div>	<div><div>Description:</div><div>A penetration testing framework that provides tools for developing and executing exploit code against a remote target.</div></div> <div><div>Key Features:</div><div>Exploit development, payload generation, vulnerability exploitation, post-exploitation.</div></div> <div><div>Common Uses:</div><div>Penetration testing, vulnerability validation, security research.</div></div> <div><div>Basic Usage:</div><div><code>msfconsole</code> (Launch Metasploit console)</div></div> <div><div>Module Search:</div><div><code>search ms08_067</code> (Search for exploit modules)</div></div> <div><div>Exploit Usage:</div><div><code>use exploit/windows/smb/ms08_067_netapi</code> (Use specific exploit)</div></div>

SIEM and Log Analysis

Splunk	ELK Stack (Elasticsearch, Logstash, Kibana)
<div><div>Description:</div><div>A platform for collecting, indexing, searching, and analyzing machine-generated data.</div></div> <div><div>Key Features:</div><div>Log aggregation, indexing, searching, alerting, reporting, dashboarding.</div></div> <div><div>Common Uses:</div><div>Security monitoring, threat detection, compliance reporting, operational intelligence.</div></div> <div><div>Basic Search:</div><div><code>index=main sourcetype=access_combined</code> (Search access logs)</div></div> <div><div>Alerting:</div><div>Create alerts based on specific search criteria.</div></div> <div><div>Dashboards:</div><div>Visualize data using dashboards and charts.</div></div>	<div><div>Description:</div><div>A suite of open-source tools for log management and analysis.</div></div> <div><div>Key Features:</div><div>Log aggregation (Logstash), indexing and searching (Elasticsearch), visualization (Kibana).</div></div> <div><div>Common Uses:</div><div>Security information and event management (SIEM), log analysis, application monitoring.</div></div> <div><div>Elasticsearch Query:</div><div><code>GET /_search</code> (Basic search)</div></div> <div><div>Kibana Visualization:</div><div>Create visualizations and dashboards to analyze data.</div></div> <div><div>Logstash Configuration:</div><div>Configure Logstash to ingest and process logs from various sources.</div></div>

Incident Response Tools

Autopsy

Description:	A digital forensics platform used to investigate and analyze computer systems and storage devices.
Key Features:	Disk imaging, file system analysis, keyword searching, timeline analysis.
Common Uses:	Incident response, forensic investigation, data recovery.
Data Sources:	Supports various data sources like disk images, logical files, and unallocated space.
Modules:	Extensible through modules for additional functionality.

TheHive

Description:	A scalable, open-source and free Security Incident Response Platform (SIRP), tightly integrated with MISP.
Key Features:	Case management, collaboration, task management, alerting.
Common Uses:	Incident response, security operations, threat intelligence management.
Integration:	Integrates with various security tools for automated incident handling.
Collaboration:	Enables collaboration among incident response teams.