

Future-Ready SOC Analyst with AI

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WHO SHOULD ENROLL IN THIS PROGRAM?

Cybersecurity is not learned by theory alone. Real-world SOC roles require practical exposure, incident investigation skills, and hands-on experience with industry tools. Our SOC Analyst Training Program is designed to transform learners into job-ready security professionals by combining security fundamentals, SIEM operations, threat detection techniques, and real incident scenarios.

Suitable For:



Fresh Graduates & Final-Year Students

Students who want to start their career in cybersecurity and build a strong foundation for SOC Analyst roles in leading organizations.



IT Professionals Planning a Career Transition

System administrators, network engineers, IT support professionals, and professionals from other domains who want to move into cybersecurity.



Aspiring SOC Analysts & Security Enthusiasts

Individuals who want to learn security monitoring, incident response, SIEM platforms, threat analysis, and the skills required to work in a Security Operations Center.



Working Cybersecurity Professionals

Security professionals looking to enhance their expertise in SOC operations, SIEM technologies, threat hunting, detection engineering, and real-world incident handling.

THIS TRAINING PROGRAM HELPS YOU GAIN PRACTICAL CYBERSECURITY SKILLS, UNDERSTAND REAL SOC WORKFLOWS, AND DEVELOP THE CONFIDENCE REQUIRED TO ANALYZE THREATS, INVESTIGATE INCIDENTS, AND PERFORM EFFECTIVELY IN AN ENTERPRISE SECURITY ENVIRONMENT.

WHAT WILL YOU MASTER THROUGH THIS PROGRAM?

- **Build a strong foundation in Networking & Cybersecurity** — Understand networking concepts, common attack techniques, security controls, authentication, firewalls, IDS/IPS, endpoint security, and the fundamentals required to work in a SOC environment.
- **Learn how a real SOC operates** — Understand SOC architecture, analyst responsibilities, security monitoring, alert triage, escalation procedures, incident handling, ticketing, documentation, and day-to-day SOC workflows.
- **Gain hands-on experience with SIEM technologies** — Work with Splunk Enterprise, Splunk Enterprise Security, to collect, search, analyze, correlate, and visualize security events.
- **Develop practical threat detection & investigation skills** — Investigate suspicious activities such as brute-force attacks, malware, phishing, account compromise, abnormal network behavior, and other common security incidents using real-world scenarios.
- **Learn Endpoint Detection & Response (EDR)** — Understand endpoint telemetry, process activity, suspicious behavior, detection alerts, investigation techniques, and response workflows.
- **Apply Threat Intelligence & MITRE ATT&CK** — Learn how IOCs, IOAs, threat intelligence, attacker techniques, and MITRE ATT&CK can be used to improve detection, investigation, and threat-hunting activities.
- **Practice real-world incident response** — Work through simulated security incidents from initial alert detection to investigation, evidence analysis, containment, escalation, and closure.
- **Prepare for SOC Analyst interviews & real-world roles** — Develop the ability to explain your investigations, demonstrate practical knowledge, troubleshoot security alerts, and confidently discuss SOC scenarios during interviews.
- **Learn from industry-oriented training material** — Receive customized learning resources, practical documents, investigation references, and exercises designed around the skills expected from modern SOC professionals.

FROM UNDERSTANDING A SECURITY ALERT TO INVESTIGATING AND RESPONDING TO IT, THIS PROGRAM TAKES YOU THROUGH THE COMPLETE SOC JOURNEY — GIVING YOU THE PRACTICAL KNOWLEDGE AND CONFIDENCE TO STEP INTO A CYBERSECURITY ROLE.

3 KEY OBJECTIVES OF THIS TRAINING PROGRAM

1. Become Job-Ready for SOC Analyst Roles

- Preparation with frequently asked SOC Analyst interview questions and industry-based scenarios.
- Practice real-time security incident situations that analysts face in enterprise environments.
- Understand the complete responsibilities and daily workflow of a SOC Analyst.
- Build strong knowledge of networking, cybersecurity concepts, SIEM, EDR, threat intelligence, and incident response.
- Develop the ability to explain security investigations confidently during technical interviews.

2. Gain Practical Experience Through Real SOC Environment Training

- Hands-on learning with industry-relevant security platforms including Splunk, Splunk Enterprise Security, EDR solutions.
- Perform practical exercises on alert monitoring, investigation, threat detection, and incident handling.
- Experience real SOC workflows including ticket management, escalation process, documentation, and reporting.
- Work on simulated enterprise security incidents to understand how security teams operate.

3. Build Your Career & Increase Job Opportunities

- Guidance on creating a professional SOC Analyst resume aligned with industry expectations.
- Support in optimizing LinkedIn profiles and professional cybersecurity presence.
- Learn effective job search strategies for SOC Analyst and cybersecurity roles.
- Understand how recruiters evaluate cybersecurity candidates and what skills companies look for.
- Become part of a professional learning community with continuous career guidance and opportunities.

OUR GOAL IS NOT JUST TO TEACH CYBERSECURITY CONCEPTS, BUT TO TRANSFORM LEARNERS INTO CONFIDENT SOC PROFESSIONALS WHO CAN HANDLE REAL-WORLD SECURITY CHALLENGES AND BUILD SUCCESSFUL CAREERS IN CYBERSECURITY.

Course Curriculum

- 1* COURSE INTRODUCTION**
- 2* NETWORKING CONCEPTS FOR SOC ANALYSTS**
- 3* CYBERSECURITY CONCEPTS**
- 4* SPLUNK SIEM & SOC OPERATIONS**
- 5* SPLUNK SECURITY DASHBOARDS & ALERTS**
- 6* SIEM USE CASES & INCIDENT HANDLING**
- 7* THREAT HUNTING USING CORRELATION SEARCHES AND NOTABLE EVENTS**
- 8* END POINT DETECTION & RESPONSE (EDR)**
- 9* AI FOR SOC ANALYSTS**
- 10* REAL-TIME OPERATIONS AND DISCUSSIONS**

Course Modules

01

COURSE INTRODUCTION

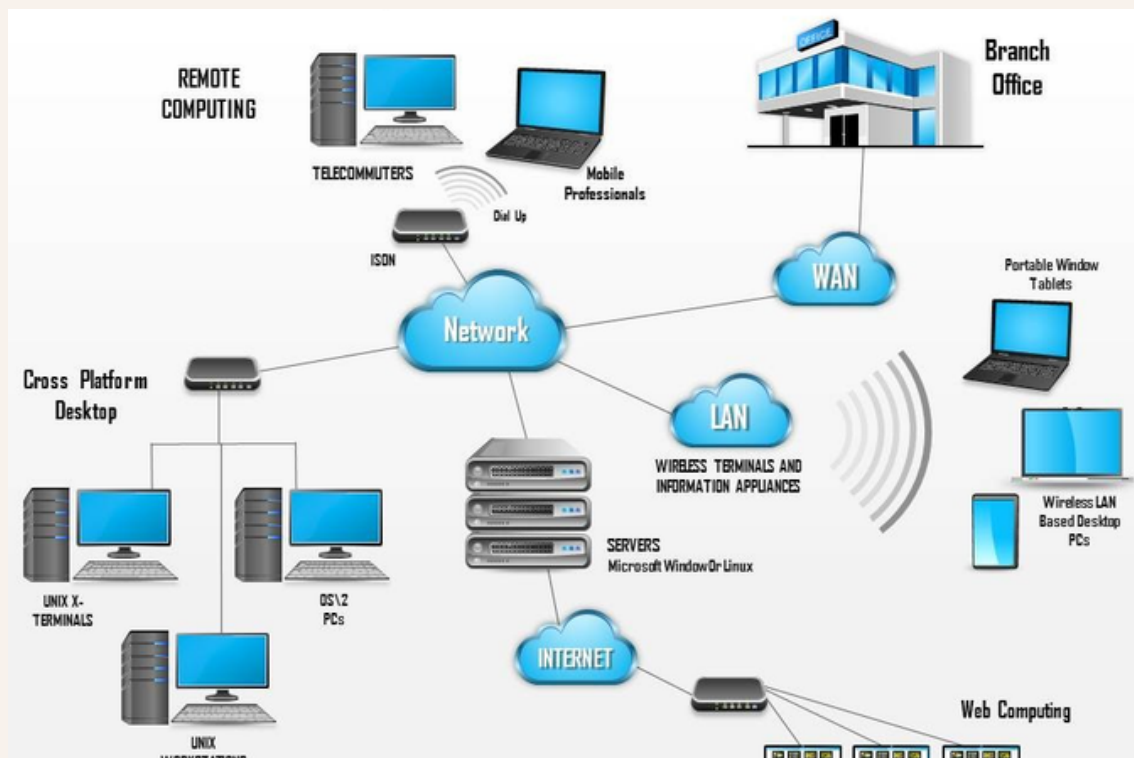
- Overview & Objectives
- Course Structure & Learning Path
- Understanding SOC Analyst Role
- High-Level Overview of Splunk ES

02

NETWORKING CONCEPTS FOR SOC ANALYSTS

2.1 Introduction to Organizational Networks

- Network Fundamentals: LAN, WAN, VPN
- Network Devices: Routers, Switches, Firewalls
- Importance of Network Security Monitoring



Course Modules

01

COURSE INTRODUCTION

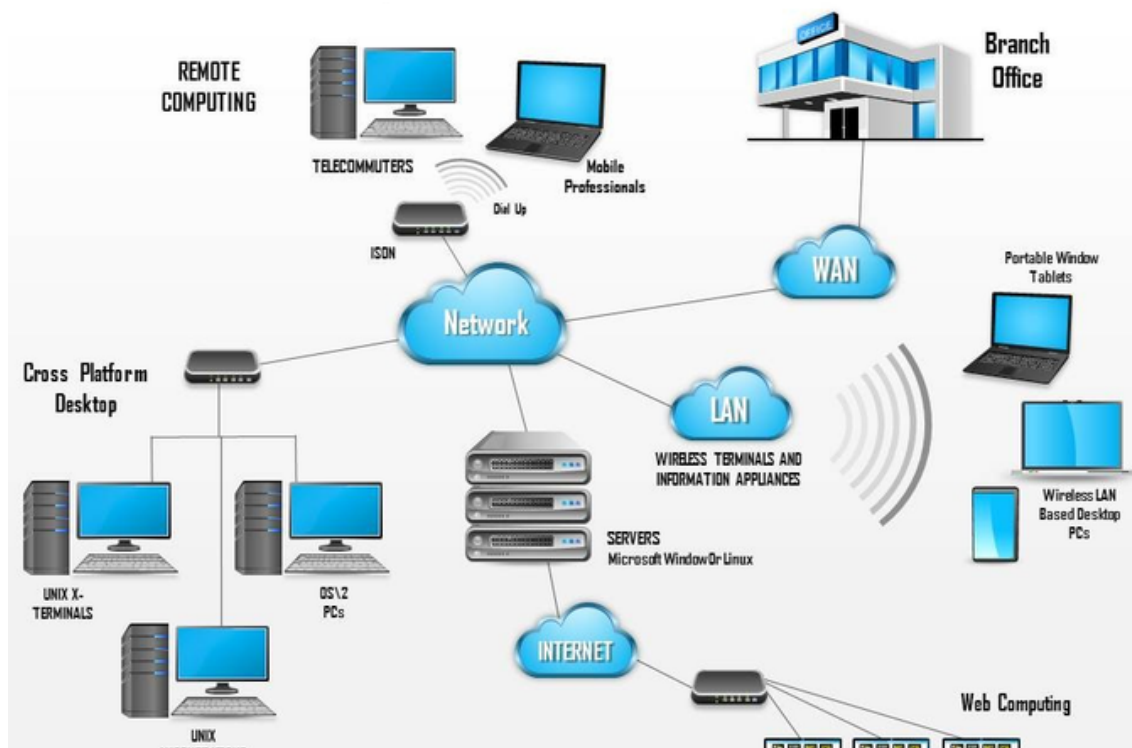
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NETWORKING CONCEPTS FOR SOC ANALYSTS

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Course Modules

2.2 ISO/OSI Model – Key Layers & Security Implications

- Application & Presentation Layers (L7 & L6)
- HTTP/HTTPS, DNS, SMTP, FTP
- Data Encryption (SSL/TLS) & Encoding
- Session, Transport, Network & Data Link Layers (L5-L2)
- TCP vs. UDP (Reliability vs. Speed)
- IP Addressing, Subnetting, ARP Spoofing
- MAC Addressing

2.3 Public vs. Private IP Address Ranges

- IPv4 vs. IPv6
- NAT (Network Address Translation) & PAT
- Identifying Suspicious IP Traffic

2.4 Introduction to Web Technology

- Web Protocols (HTTP/HTTPS, WebSockets)
- Client-Server Architecture
- Common Web Vulnerabilities (SQLi, XSS, CSRF)



Course Modules

2.5 Understanding HTTP Protocol

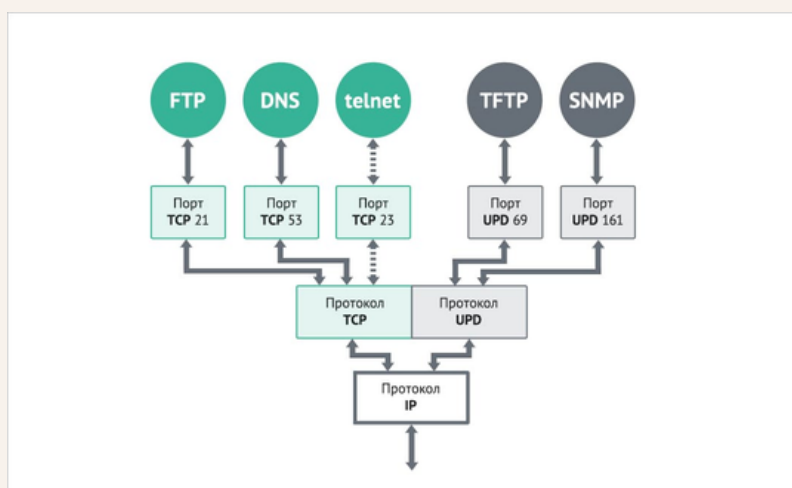
- HTTP Methods (GET, POST, PUT, DELETE)
- Status Codes & Headers
- Analyzing HTTP Logs for Anomalies

2.6 Understanding Service Ports

- Well-Known vs. Ephemeral Ports
- Common Ports & Associated Services (21-FTP, 22-SSH, 80-HTTP, 443-HTTPS)
- Detecting Unauthorized Port Scans

2.7 Key Protocols & Services

- SMB (445) – File Sharing & Exploits (EternalBlue)
- SMTP (25) – Email Spoofing & Phishing
- Telnet (23) – Risks of Unencrypted Communication
- SSH (22) – Secure Remote Access & Key-Based Auth
- FTP (20/21) – Secure Alternatives (SFTP/FTPS)
- MySQL (3306) – Database Security Best Practices



Course Modules

2.8 Windows OS for SOC Analysts

- Windows OS Types (Client vs. Server Editions)
- User & File Permissions (NTFS, Share Permissions)
- Windows Event Logs (Security, System, Application)

Key Utilities:

- Event Viewer – Log Analysis
- Task Manager & Resource Monitor – Process Tracking
- PowerShell – Security Auditing

2.9 In-Depth on Port Numbers

- Malicious Port Usage
- Port Scanning Techniques using Nmap
- Defending Against Port-Based Attacks

```
[→ ~ nmap scanme.nmap.org
Starting Nmap 7.92 ( https://nmap.org ) at 2022-11-16 11:55 EST
Stats: 0:00:00 elapsed; 0 hosts completed (0 up), 1 undergoing Ping Scan
Ping Scan Timing: About 100.00% done; ETC: 11:55 (0:00:00 remaining)
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.071s latency).
Not shown: 991 closed tcp ports (conn-refused)
PORT      STATE SERVICE
22/tcp    open  ssh
53/tcp    open  domain
80/tcp    open  http
135/tcp   filtered msrpc
139/tcp   filtered netbios-ssn
445/tcp   filtered microsoft-ds
593/tcp   filtered http-rpc-epmap
9929/tcp  open  nping-echo
31337/tcp open  Elite

Nmap done: 1 IP address (1 host up) scanned in 29.13 seconds
```

Course Modules

03

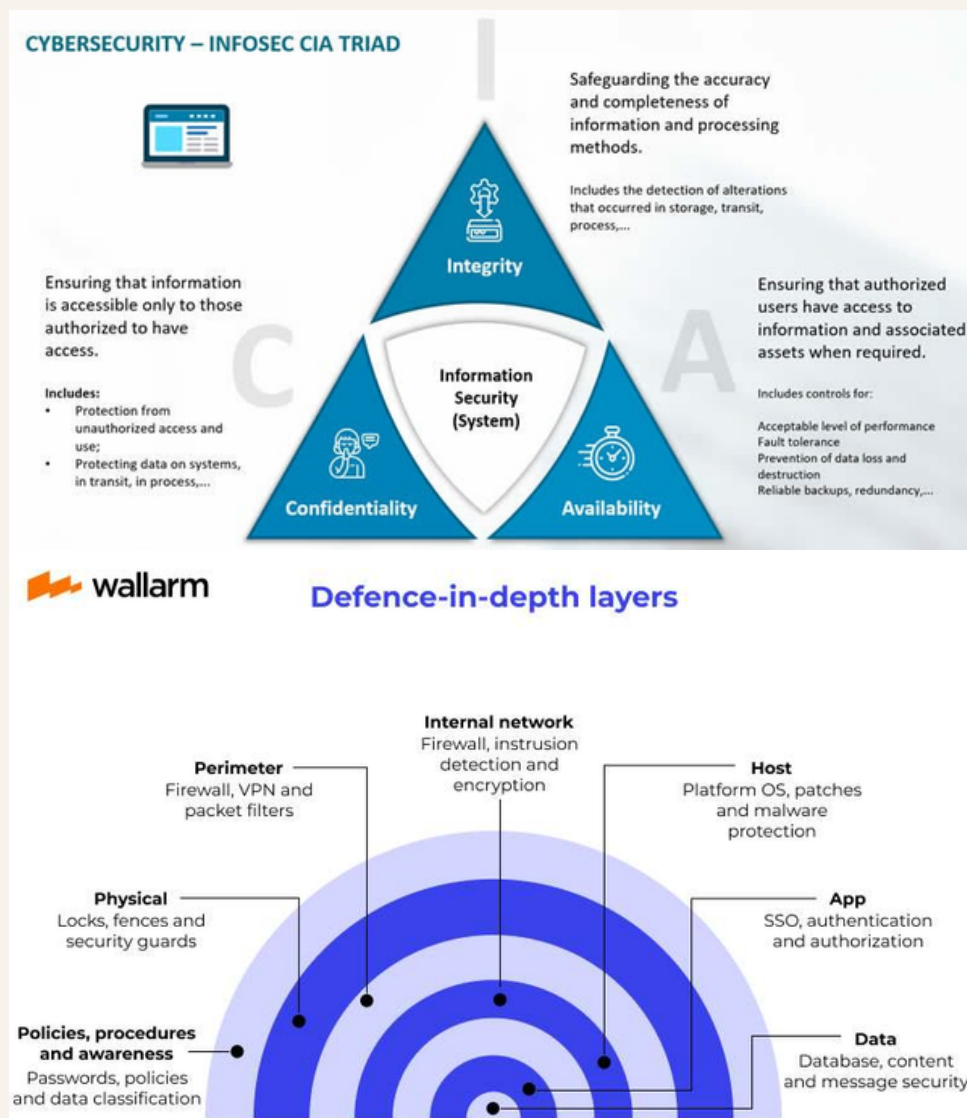
CYBERSECURITY CONCEPTS

3.1 Introduction to Security: CIA Triad, Encryption & Hashing

- Confidentiality, Integrity, Availability (CIA)
- Symmetric vs. Asymmetric Encryption (AES, RSA)
- Hashing Algorithms (MD5, SHA-1, SHA-256)

3.2 Defense-in-Depth Approach

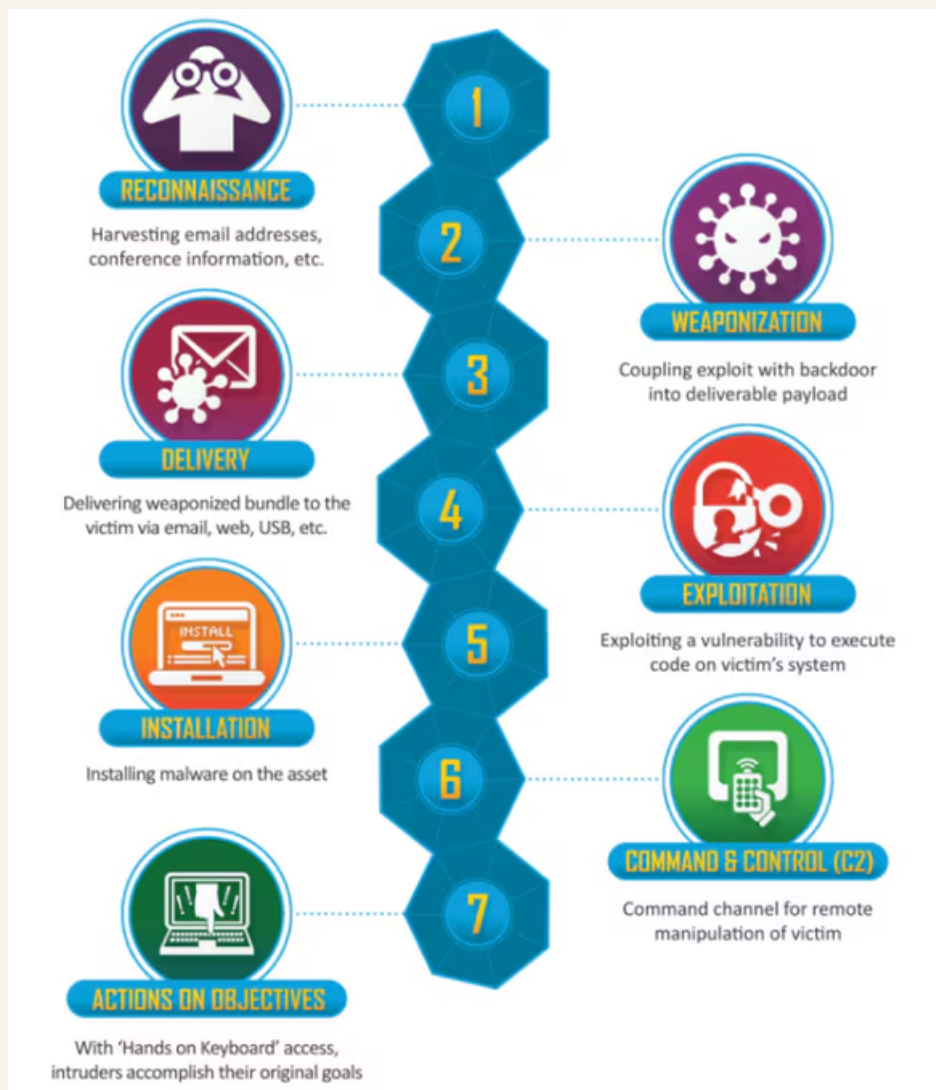
- Layered Security Controls (Firewalls, IDS/IPS, EDR)
- Zero Trust Architecture



Course Modules

3.3 Cyber Kill Chain / Phases of Attack

- Reconnaissance
- Weaponization
- Delivery
- Exploitation
- Installation
- Command & Control (C2)
- Actions on Objectives



Course Modules

3.4 Brute Force Attacks & Types

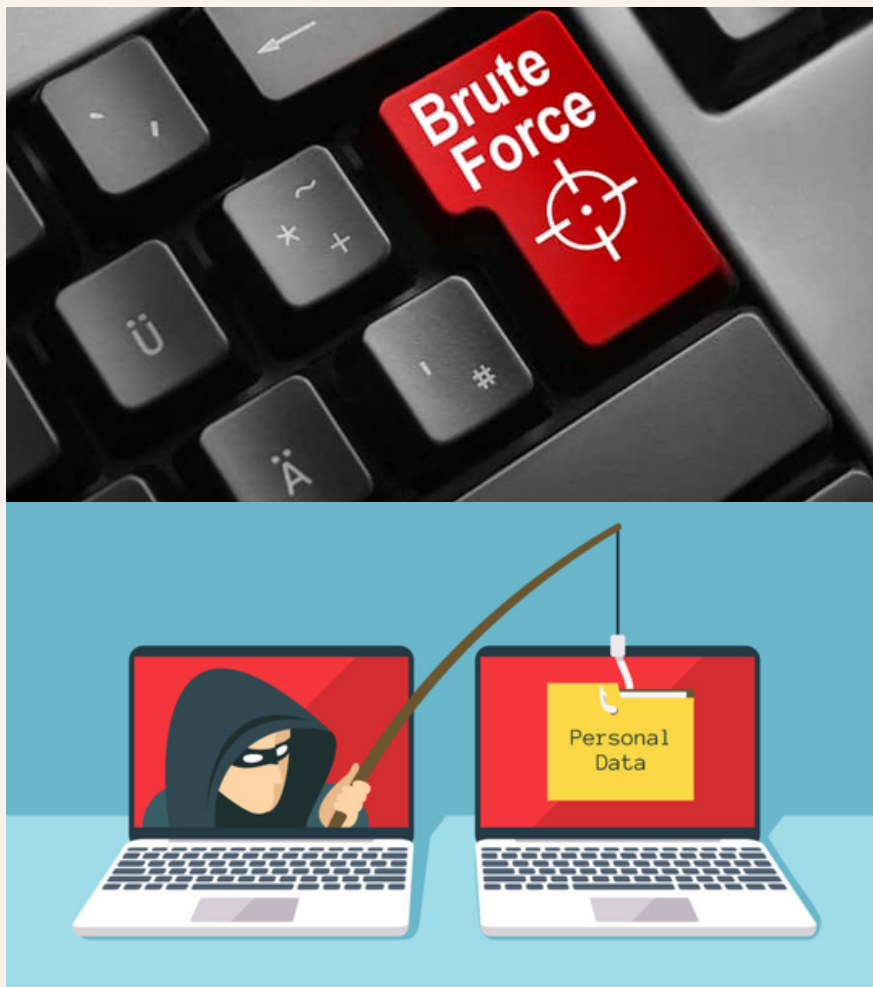
- Credential Stuffing vs. Dictionary Attacks
- Mitigation: Account Lockout Policies, CAPTCHA, MFA

3.5 Phishing & Spoofing Attacks

- Email Spoofing, CEO Fraud, Spear Phishing
- Detecting Phishing Attempts (SPF, DKIM, DMARC)

3.6 OWASP Top 10

- Top Risks: Injection, Broken Auth, XSS, Insecure APIs
- Real-World Exploit Examples



Course Modules

3.7 DNS Tunneling Attack

- How Attackers Exfiltrate Data via DNS
- Detection Methods (Anomalous DNS Query Lengths)

3.8 Malware Types & Attacks

- Trojans, Ransomware, Spyware, Rootkits
- Indicators of Compromise (IOCs)

3.9 MITRE ATT&CK and Frameworks

- Tactics, Techniques, and Procedures (TTPs)
- Understanding Techniques – Methods to Achieve Goals
- Sub-techniques – Specific Implementations of Techniques
- Procedures using Threat Intelligence, and Threat Detection
- Procedure Examples – Real-world Threat Actor Behaviors

Execution 3 techniques	Persistence 7 techniques	Privilege Escalation 5 techniques	Defense Evasion 9 techniques	Credential Access 1 techniques	Discovery 11 techniques	Lateral Movement 3 techniques	Collection 2 techniques	Command and Control 14 techniques	Exfiltration 4 techniques	Internal Security 75
Command and Scripting Interpreter (3) Shell On Windows Linux CLI Initialization and Configuration Scheduled Task/Job (3)	Account Manipulation (1) SSH Authorized Keys Boot or Logon Initialization Scripts (1) RC Scripts Compromise Host Software Binary Create Account (1) Local Account Scheduled Task/Job (1) Cron Server Software Component (1) vSphere Installation Bundles Valid Accounts (3) Default Accounts Domain Accounts Local Accounts	Account Manipulation (1) SSH Authorized Keys Boot or Logon Initialization Scripts (1) RC Scripts Escape to Host Scheduled Task/Job (1) Cron Valid Accounts (3) Default Accounts Domain Accounts Local Accounts	Decfuscate/Decode Files or Information Execution Guardrails File and Directory Permissions Modification Hide Artifacts (1) Run Virtual Instance Impair Defenses (3) Impair Command History Logging Disable or Modify System Firewall Indicator Blocking Indicator Removal (4) Clear Command History File Deletion Timestamp Clear Persistence Masquerading (1) Match Legitimate Name or Location Obfuscated Files or Information Valid Accounts (3) Default Accounts Domain Accounts Local Accounts	Brute Force (3) Password Guessing Password Spraying Credential Stuffing	Account Discovery (1) Local Account File and Directory Discovery Log Enumeration Process Discovery Remote System Discovery Software Discovery System Information Discovery System Network Configuration Discovery (1) Internet Connection Discovery System Network Connections Discovery System Time Discovery System Time Zone Discovery	Exploitation of Remote Services Lateral Tool Transfer Remote Services (1) SSH	Data from Local System Data Staged (2) Local Data Staging Remote Data Staging	Application Layer Protocol (3) Web Protocols File Transfer Protocols DNS Data Encoding (2) Standard Encoding Non-Standard Encoding Data Obfuscation (3) Junk Data Steganography Protocol or Service Impersonation Dynamic Resolution (3) Fast Flux DNS Domain Generation Algorithms DNS Calculation Encrypted Channel (2) Symmetric Cryptography Asymmetric Cryptography Fallback Channels Hide Infrastructure Ingress Tool Transfer Multi-Stage Channels Non-Application Layer Protocol Non-Standard Port Protocol Tunneling Proxy (4) Internal Proxy	Data Transfer Size Limits Exfiltration Over Alternative Protocol (3) Exfiltration Over Symmetric Encrypted Non-C2 Protocol Exfiltration Over Asymmetric Encrypted Non-C2 Protocol Exfiltration Over Unencrypted Non-C2 Protocol Exfiltration Over C2 Channel Exfiltration Over Web Service (4) Exfiltration to Code Repository Exfiltration to Cloud Storage Exfiltration to Text Storage Sites Exfiltration Over Webhook	Account A Data Destruction Data Entry Defacement Internal System Inhibit System Service Shutdown System Shutdown

MITRE
ATT&CK_{v17}

Course Modules

04

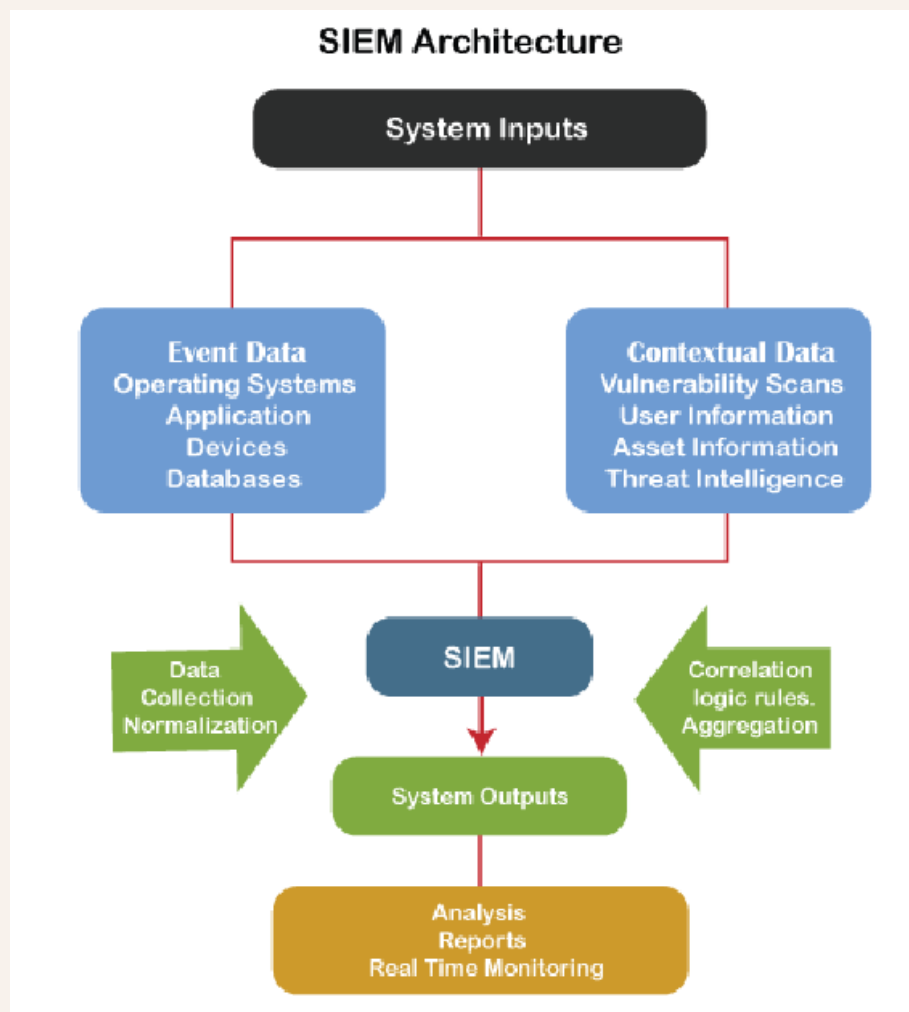
SPLUNK SIEM & SOC OPERATIONS

4.1 Splunk Installation & Setup

- Splunk Enterprise vs. Universal Forwarder
- Configuring Data Inputs

4.2 SOC Process & Responsibilities

- Incident Triage, Escalation, Response
- SIEM Architecture & Log Collection



Course Modules

4.3 Security Log Analysis in Splunk

- Firewall Logs (Blocked Traffic, Port Scans)
- IDS/IPS Alerts (Signature vs. Anomaly-Based)
- DNS Log Analysis (Detection, Exfiltration)
- HTTP Logs
- Antivirus Logs (Malware Detection Events)

4.4 Windows Log Analysis

- Critical Event IDs
(4625-Failed Login, 4688-Process Creation)
- Sysmon for Advanced Threat Detection



Course Modules

05 SPLUNK SECURITY DASHBOARDS & ALERTS

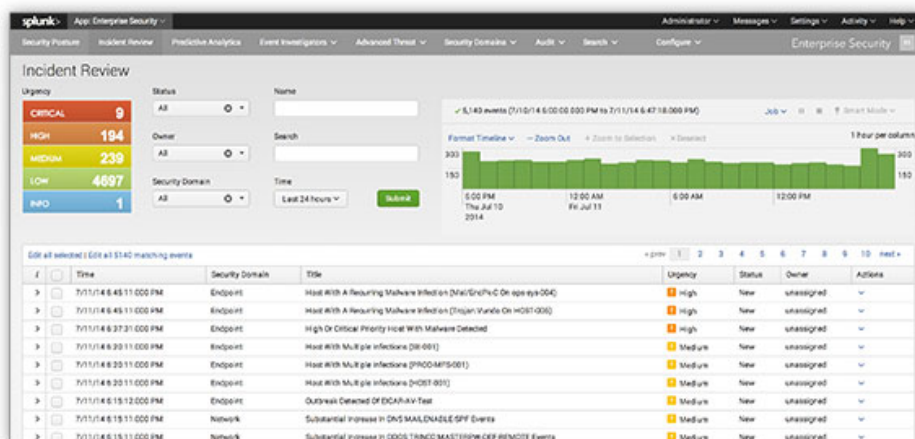
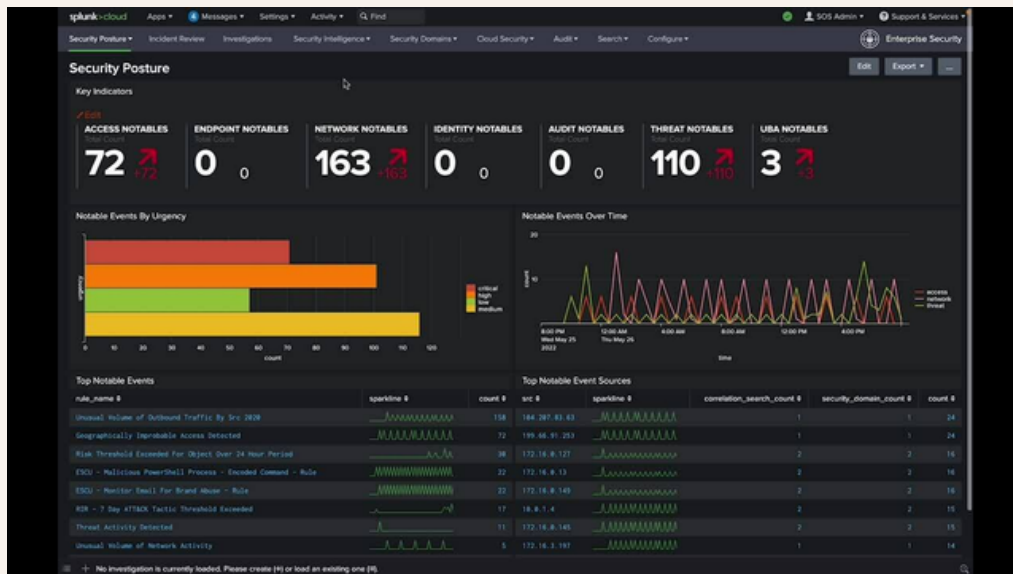
5.1 Security Dashboard Creation

- Visualizing Security Event use cases (Firewall, IDS/IPS, DNS Etc)
- Best practices for dashboard layout and usability

5.2 Custom Alerts & Correlation Rules

Various types of Security alerts including:

- Creation of correlation searches for suspicious events and patterns
- Creation of alerts by generating notable events



Course Modules

06

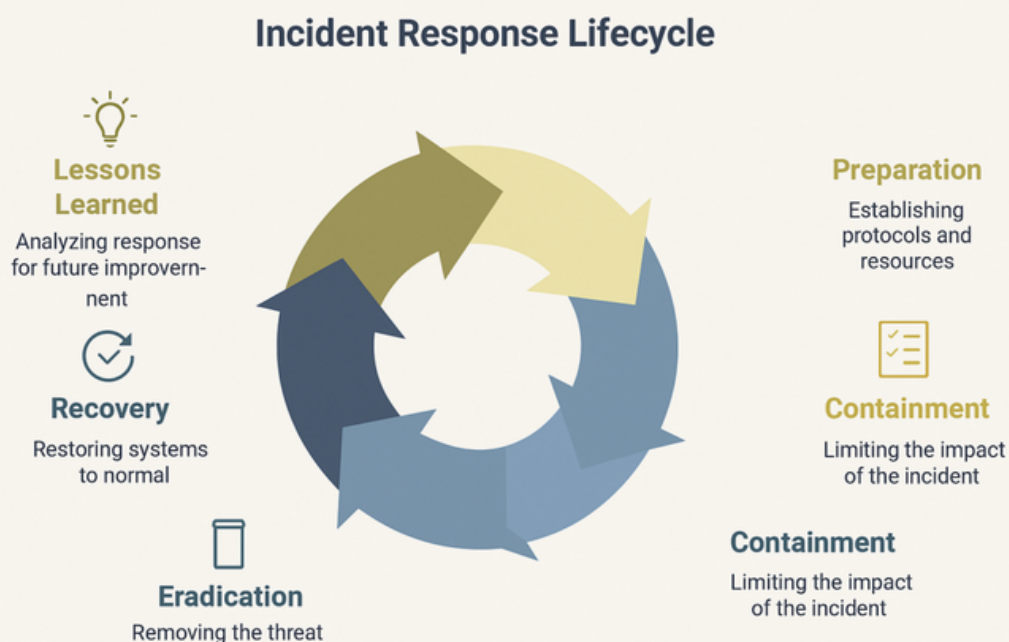
SIEM USE CASES & INCIDENT HANDLING

6.1 Real-World SIEM Use Cases

- Brute Force Attack Detection
- Brute Force Attack Investigation
- Email Header Analysis (Tracking Phishing Origins)

6.2 Incident Handling Stages (NIST Framework)

- Preparation
- Detection & Analysis
- Containment
- Eradication
- Recovery
- Lessons Learned



Course Modules

07 THREAT HUNTING

7.1 Proactive Threat Hunting Techniques

- Threat Hunting using Correlation Searches
- Threat Hunting using Notable Events
- Web Server Scanning Attack Analysis
- Brute Force Attack Investigation
- Email Header Analysis (Tracking Phishing Origins)



Course Modules

08

END POINT DETECTION & RESPONSE (EDR)

8.1 EDR Fundamentals

- What is EDR?
- Why EDR is required in a modern SOC
- EDR vs Traditional Antivirus
- EDR vs Next-Generation Antivirus (NGAV)
- EDR vs XDR
- EDR vs SIEM
- EDR architecture
- EDR agent and endpoint
- Role of EDR in the SOC

8.2 Endpoint Visibility & Telemetry

- What endpoint telemetry means
- Process creation events
- Parent-child process relationships
- Command-line telemetry
- File creation/modification events
- Registry activity
- Windows services
- Scheduled tasks

8.3 Understanding Process Trees

- What is a process tree?
- Parent vs child processes
- Normal vs suspicious process chains

Course Modules

08

END POINT DETECTION & RESPONSE (EDR)

8.4 EDR Detection Concepts

- Signature-based detection
- Behavioral detection
- IOC-based detection
- IOA-based detection
- Rule-based detection

8.5 MITRE ATT&CK + EDR

- Introduction to MITRE ATT&CK
- Mapping endpoint activity to ATT&CK
- Execution techniques
- Privilege escalation
- Credential access
- Lateral movement
- Command and control
- Exfiltration

8.6 EDR Response

- What is endpoint response?
- Kill a malicious process
- Quarantine a file
- Delete/remediate malware
- Isolate an endpoint
- When should a SOC analyst isolate an endpoint?
- When should an analyst not isolate an endpoint?
- EDR containment workflow

Course Modules

08

END POINT DETECTION & RESPONSE (EDR)

8.7 EDR + Threat Intelligence

- IOC fundamentals
- File hashes
- IP addresses
- Domains
- URLs
- Hash reputation
- IP/domain reputation
- Threat-intelligence feeds
- IOC vs IOA
- Using threat intelligence during EDR investigation

09

AI FOR SOC ANALYSTS

- Role of AI in Cyber security & Security Operations.
- Getting started with AI
- Using AI for Use case creation and log search for SIEM
- Using ChatGPT for Incident response
- Incident investigation using AI
- File based analysis
- Phishing email analysis
- Malware analysis using AI
- AI as Threat intelligence agent
- Interview & resume preparation using OpenAI.

Course Modules

10

REAL-TIME OPERATIONS AND DISCUSSIONS

Each topic is supplemented with practical oriented sessions, use-case discussions, and real-world problem-solving techniques along with daily class recordings to ensure practical learning and operational confidence.

Thank you

FOR MORE DETAILS:

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