

DOMAIN 4, BOOKLET 4

# CC in a Nutshell

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Network  
security

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# Types of Networks



- LAN: LOCAL AREA NETWORK
- WAN: WIDE AREA NETWORK
- WLAN: WIRELESS LOCAL AREA NETWORK
- VPN: VIRTUAL PRIVATE NETWORK
- EPN: ENTERPRISE PRIVATE NETWORK
- PAN: PERSONAL AREA NETWORK
- CAN: CAMPUS AREA NETWORK
- MAN: METROPOLITAN AREA NETWORK
- SAN: STORAGE AREA NETWORK / SYSTEM-AREA NETWORK
- POLAN: PASSIVE OPTICAL LOCAL AREA NETWORK

# Network Devices

- HUBS, SWITCHES,
- ROUTERS, FIREWALLS
- SERVERS, PRINTERS,
- FAX MACHINES
- GATEWAYS,
- REPEATERS, BRIDGES
- MODEMS, ACCESS
- POINTS
- ENDPOINTS (DESKTOP,  
LAPTOP, TABLET,  
MOBILE PHONE, VOIP)



# Network Models

**OSI MODEL:** SEVEN LAYERS FROM  
PHYSICAL TO APPLICATION.

**TCP/IP MODEL:** FOUR LAYERS FROM  
NETWORK INTERFACE TO APPLICATION.

# Network Attacks

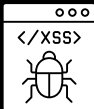
-DOS/DDOS: DENIAL OF SERVICE ATTACKS.



- SPOOFING, MAN-IN-THE-MIDDLE (ON-PATH)



- FRAGMENT ATTACKS, OVERSIZED PACKET ATTACKS



- PRIVILEGE ESCALATION, SQL INJECTION, XSS



# Network Threats

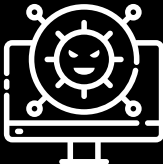
**VIRUS, WORM, TROJAN**



**ADWARE/SPYWARE,  
PHISHING, ROOTKIT**



**MALWARE, SIDE-CHANNEL  
ATTACKS**



# How to Identify Threats



**IDS (INTRUSION DETECTION SYSTEMS)**



**NIDS/HIDS (NETWORK/HOST-BASED IDS)**



**SIEM (SECURITY INFORMATION AND EVENT MANAGEMENT)**

# How to Prevent Threats



ANTIVIRUS, SCANS

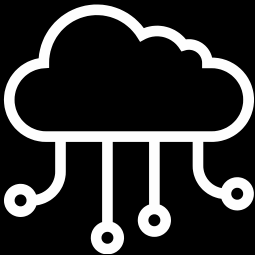


FIREWALLS,  
IPS/NIPS/HIPS



# Cloud Service and Deployment Models

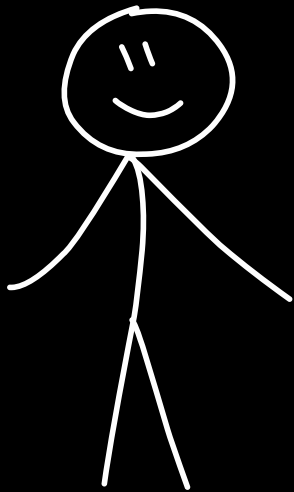
**SERVICE MODELS:**  
SAAS, IAAS, PAAS



**DEPLOYMENT MODELS:**  
PUBLIC, PRIVATE,  
COMMUNITY, HYBRID

# Secure Network Design

- **NETWORK SEGMENTATION:** INCLUDES MICROSEGMENTATION AND DMZ.
- **VLAN:** VIRTUAL LOCAL AREA NETWORK.
- **VPN:** VIRTUAL PRIVATE NETWORK.
- **DEFENSE IN DEPTH, ZERO TRUST, NETWORK ACCESS CONTROL**



Thanks for  
reading! I hope  
you found it  
helpful, and I'd  
love to hear  
any thoughts  
or feedback  
you'd like to  
share.

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