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Palo Alto Networks

NetSec-Generalist

Palo Alto Networks Network

Security Generalist

QUESTION: 1
When a firewall acts as an application-level gateway (ALG), what does it require in order to establish a connection?

A. Pinhole
B. Dynamic IP and Port (DIPP)
C. Session Initiation Protocol (SIP)
D. Payload

Answer(s): A

Explanation:
When a firewall functions as an Application-Level Gateway (ALG), it intercepts, inspects, and dynamically manages traffic at the application layer of the OSI model. The primary role of an ALG is to provide deep packet inspection (DPI), address translation, and protocol compliance enforcement.

To establish a connection successfully, an ALG requires a pinhole--a temporary, dynamically created rule that allows the firewall to permit the return traffic necessary for specific applications (e.g., VoIP, FTP, and SIP-based traffic). These pinholes are essential because many applications dynamically negotiate port numbers, making static firewall rules ineffective.

For example, when a Session Initiation Protocol (SIP) application initiates a connection, the firewall dynamically opens a pinhole to allow the SIP media stream (RTP) to pass through while maintaining security controls. Once the session ends, the pinhole is closed to prevent unauthorized access.

Reference to Firewall Deployment and Security Features:

Firewall Deployment - ALGs are commonly deployed in enterprise network firewalls to manage application-specific connections securely.

Security Policies - Firewalls use ALG security policies to allow or block dynamically negotiated connections.

VPN Configurations - Some VPNs rely on ALGs for handling complex applications requiring NAT traversal.

Threat Prevention - ALGs help detect and prevent application-layer threats by inspecting traffic content.

WildFire - Not directly related, but deep inspection features like WildFire can work alongside ALG to inspect payloads for malware.

Panorama - Used for centralized policy management, including ALG-based policies.

Zero Trust Architectures - ALG enhances Zero Trust by ensuring only explicitly allowed application traffic is permitted through temporary pinholes.

Thus, the correct answer is A. Pinhole because it enables a firewall to establish application-layer connections securely while enforcing dynamic traffic filtering.

QUESTION: 2
Which action is only taken during slow path in the NGFW policy?

A. Session lookup
B. SSUTLS decryption
C. Layer 2-Layer 4 firewall processing
D. Security policy lookup

Answer(s): B

Explanation:
In Palo Alto Networks Next-Generation Firewall (NGFW), packet processing is categorized into the fast path (also known as the accelerated path) and the slow path (also known as deep inspection processing). The slow path is responsible for handling operations that require deep content inspection and policy enforcement beyond standard Layer 2-4 packet forwarding.

Slow Path Processing and SSL/TLS Decryption

SSL/TLS decryption is performed only during the slow path because it involves computationally intensive tasks such as:

Intercepting encrypted traffic and performing man-in-the-middle (MITM) decryption.

Extracting the SSL handshake and certificate details for security inspection.

Inspecting decrypted payloads for threats, malicious content, and compliance with security policies.

Re-encrypting the traffic before forwarding it to the intended destination.

This process is critical in environments where encrypted threats can bypass traditional security inspection mechanisms. However, it significantly impacts firewall performance, making it a slow path action.

Other Answer Choices Analysis

(A) Session Lookup - This occurs in the fast path as part of session establishment before any deeper inspection. It checks whether an incoming packet belongs to an existing session.

(C) Layer 2-Layer 4 Firewall Processing - These are stateless or stateful filtering actions (e.g., access control, NAT, and basic connection tracking), handled in the fast path.

(D) Security Policy Lookup - This is also in the fast path, where the firewall determines whether to allow, deny, or perform further inspection based on the defined security policy rules.

Reference and Justification: