

# Cybersecurity Incident Report

## Section 1: Identify the type of attack that may have caused this network interruption

One potential explanation for the website's connection timeout error message is: a DoS attack.

The logs show that: The web server struggles to keep up with the abnormal number of SYN requests coming in at a rapid pace

This event could be: A type DoS attack called SYN flooding

## Section 2: Explain how the attack is causing the website to malfunction

When website visitors try to establish a connection with the web server, a three-way handshake occurs using the TCP protocol. Explain the three steps of the handshake:

1. A SYN packet is sent from the source to the destination, requesting to connect
2. The destination replies to the source with a SYN-ACK packet to accept the connection request. The destination will reserve resources for the source to connect
3. A final ACK packet is sent from the source to the destination acknowledging the permission to connect

Explain what happens when a malicious actor sends a large number of SYN packets all at once: In the case of a SYN flood attack, a malicious actor will send a large number of SYN packets all at once, which overwhelms the server's available resources to reserve for the connection. When this happens, there are no server resources left for legitimate TCP connection requests.

Explain what the logs indicate and how that affects the server: The logs indicate that the web server has become overwhelmed and is unable to process the visitor's SYN requests. The server is unable to open a new connection to new visitors who receive a connection timeout message.