

Type of attack that may have caused this network interruption

One possible reason for the website showing a connection timeout error is a **DoS (Denial of Service) attack**. The logs show that the web server stops responding after receiving a large number of **SYN packet** requests. This type of event could be a specific kind of DoS attack known as a **SYN flooding** attack.

How the attack is causing the website malfunction

When visitors try to connect to the web server, a **three-way handshake** occurs using the **TCP protocol**. This handshake includes three steps:

1. The source sends a **SYN packet** to the destination, requesting to start a connection.
2. The destination replies with a **SYN-ACK packet** to accept the connection request and reserves resources for the source.
3. The source sends a final **ACK packet** back to the destination, confirming permission to connect.

During a **SYN flood attack**, a malicious actor sends a large number of SYN packets at the same time. This overwhelms the server's resources that are reserved for connection requests. As a result, there are no resources left to handle legitimate TCP connection requests.

The logs show that the web server became overwhelmed and could not process the visitors' SYN requests. This prevents the server from opening new connections, causing visitors to receive connection timeout messages.