14.1 Network Security

Notebook:	How Computers Work [CM1030]		
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Cornell Notes	**Topic:** 14.1 Network Security	Course: BSc Computer Science Class: How Computer Work [CM1030]-Lecture Date: January 13, 2020

Essential Question:

What are the various ways in which the security of a network can be compromised?

Questions/Cues:

- What is HTTPS?
- What are external attacks?
- What is a distributed denial of service attack?
- What are botnets?
- What is a firewall?

Notes

- HTTPS = encrypted version of HTTP protocol, it's an app layer protocol.
- External attacks = comps that attempt to disable the whole network or comps on it
- Hack = trying to get access to another machine without being allowed to so
  - can be avoided by using authentication; using a login with secure password
- DDos (Distributed denial of service) attack = involves alot of comps simultaneously sending huge amts of network packets to specific machine or to lots of machines on network. This sends so many packets that network or comps completely overload & cannot handle its normal business.
  - DDos typically carried out using botnets.
  - DDos diffcult to defend against because it's done using valid network packets.
- Botnets = network of comps that have been infected by virus which makes them perform DDos.
- Firewall = filter that prevents certain types of packets from coming in & out of a machine or network
  - can often block legit traffic
  - often implemented together with proxy servers
- Blacklisting = rejecting IP addresses than can be known to be malicious
- Whitelisting = only allowing packets that come from list of approved good IP addresses
- Proxy server = comp that acts as an intermediary between a client & a server or between client & comps on network. All traffic must go through proxy server which forwards packs to appropriate comps. This means no external comps can interact directly with comps in network & all traffic can be filtered with firewall

Summary

In this week, we learned the dangers to network security & remedies to a few such attacks.