Networking basics module 15

Day 12/365

TCP

- acknowledgement of receipt of packets
- packets have sequence numbers
- keeps track of the number of segments that have been sent, if no ack, it resends them

UDP

- no acks, no sequence number of packets
- preferable with streaming and VOIP
- acks would slow down delivery and would be more disruptive than dropping packets

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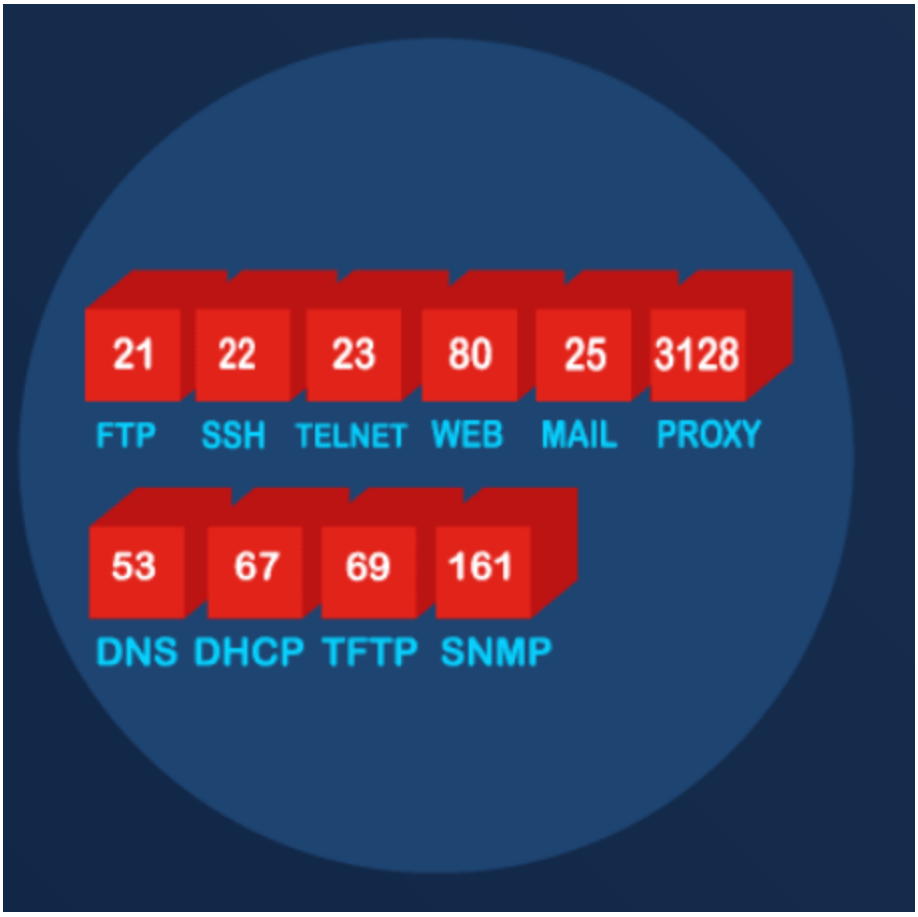

Port numbers

Server side

Port numbers below 1024 are usually called "well-known ports"

Port Number	Transport	Application Protocol
20	TCP	File Transfer Protocol (FTP) - Data
21	TCP	FTP - Control
22	TCP	Secure Shell (SSH)
23	TCP	Telnet
25	TCP	Simple Mail Transfer Protocol (SMTP)
53	UDP, TCP	Domain Name Service (DNS)
67	UDP	Dynamic Host Configuration Protocol (DHCP) - Server
68	UDP	DHCP - Client
69	UDP	Trivial File Transfer Protocol (TFTP)
80	TCP	Hypertext Transfer Protocol (HTTP)
110	TCP	Post Office Protocol version 3 (POP3)
143	TCP	Internet Message Access Protocol (IMAP)
161	UDP	Simple Network Management Protocol (SNMP)
443	TCP	Hypertext Transfer Protocol Secure (HTTPS)

automatically identified by the clients
ports "listen" = buffer setup that will accept requests

Host side

above 1024, randomly assigned

- **Well-Known Ports** - Destination ports that are associated with common network applications are identified as well-known ports. These ports are in the range of 1 to 1023.
- **Registered Ports** - Ports 1024 through 49151 can be used as either source or destination ports. These can be used by organizations to register specific applications such as IM applications.
- **Private Ports** - Ports 49152 through 65535 are often used as source ports. These ports can be used by any application.

Unexplained TCP connections can pose a major security threat. They can indicate that something or someone is connected to the local host. Sometimes it is necessary to know which active TCP

connections are open and running on a networked host. Netstat is an important network utility that can be used to verify those connections. The command netstat is used to list the protocols in use, the local address and port numbers, the foreign address and port numbers, and the connection state.