CCNA Study Group Week 2

Preview

- Device Types
- Topology
- TCP vs UDP
- Getting the network info on Windows, OSX, and Linux
- Wireless Principles
- Cisco-specific Wireless
- Services

Routers

Routers route IP packets by looking at their routing table.

Routing tables are built using routing protocols.

ROUTERS ONLY LOOK AT THEIR ROUTING TABLES FOR FORWARDING DECISIONS.

L2 Switch

Switches frames based on forwarding table

Ages out old forwarding table entries.

Buffers frames to avoid collisions.

Firewall

Looks at packets and decides whether the packet should go through or not based on rules (Go/No Go).

Next Generation Firewalls (NGFWs) use rules AND stateful packet inspection.

Stateful packet inspection means that it can remember things and correlate packets.

Access Points (APs)

Are usually controlled by a Wireless LAN Controller (WLC). When controlled by a WLC, the WLC is only configured, NOT the APs.

AP placement is important because different antennas have different properties.

Additionally, APs that are too close, using the similar frequencies will degrade each other.

Servers

Run applications that clients want.

Examples:

- Web server: hosts websites
- Active Directory controller: manages Active Directory requests
- Database server: hosts databases
- Virtualization server: hosts Virtual Machines

Transmission Control Protocol (TCP)

Is connection-oriented (uses two-way communication).

Every segment (TCP PDU) is acknowledged by the receiver.

‘Yes, I have received segment 157’

If an acknowledgement is not made for a segment, the sender will resend the segment until the receiver acknowledges.

User Datagram Protocol (UDP)

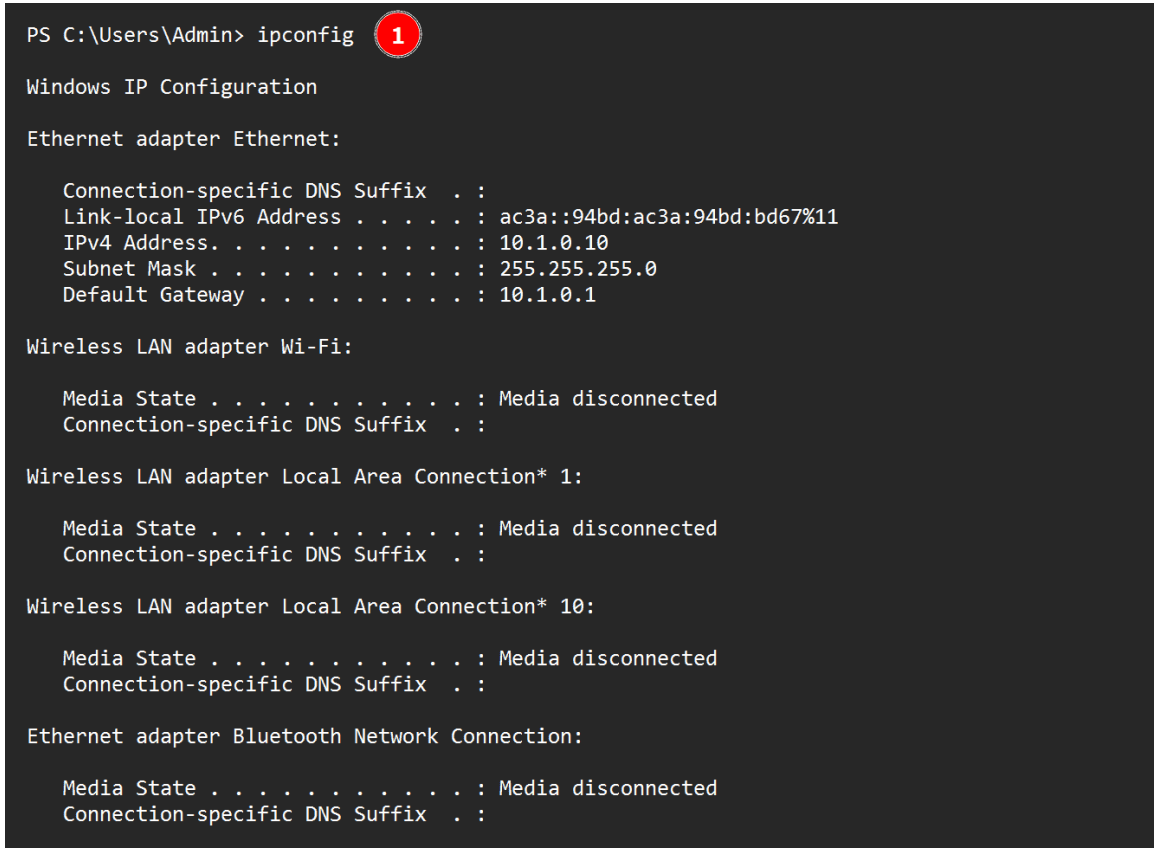
Is connectionless (no two-way communication/acknowledgement)

Is faster than TCP.

Almost like a thin wrapper for IP packets.

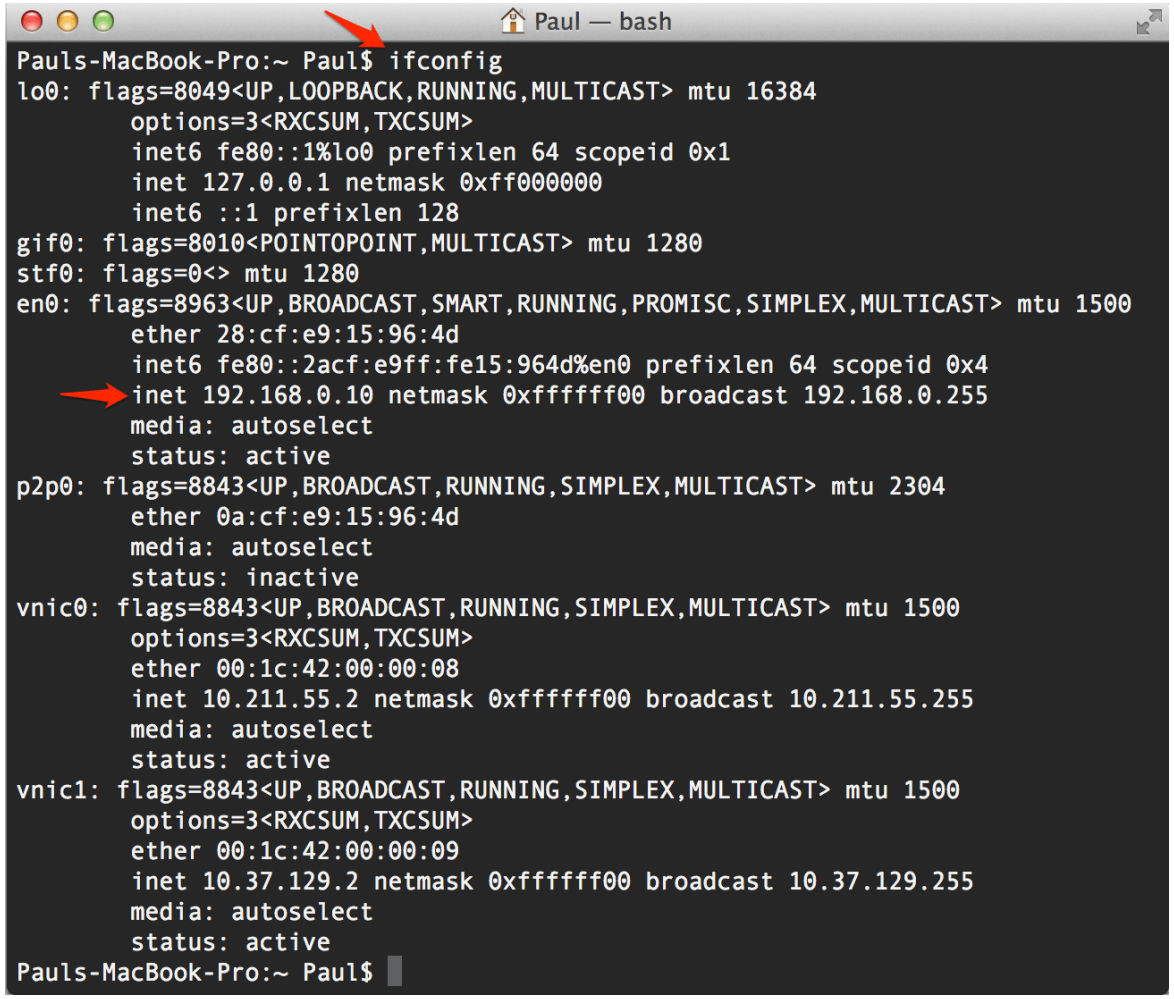
Getting IP information on Windows

Command: ipconfig



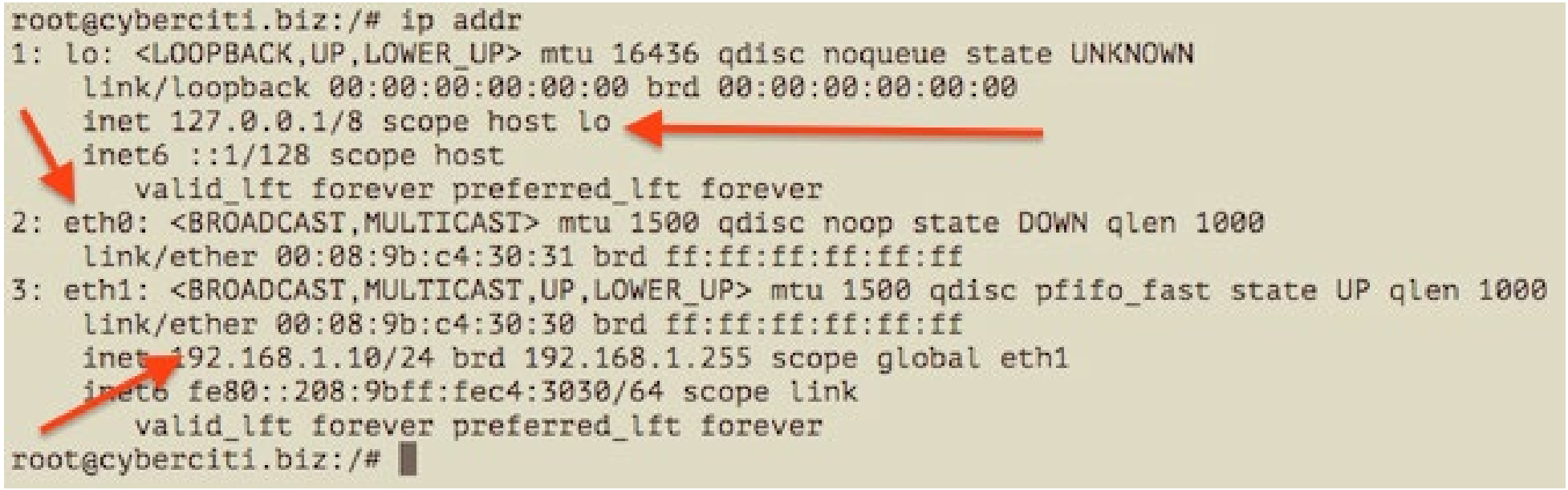
Getting IP information on OS X & Old Linux

Command: ifconfig



Getting IP information on New Linux

Command: ip addr



Wireless concepts

You want to use different channels for each AP in the same area.

Channels close to each other will interfere.