

How the Internet Works

A Brief Review

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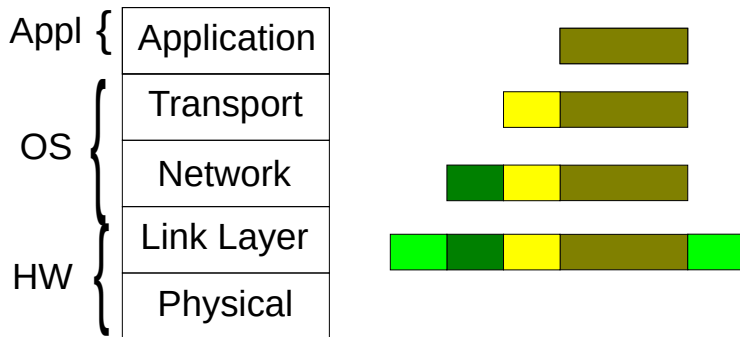
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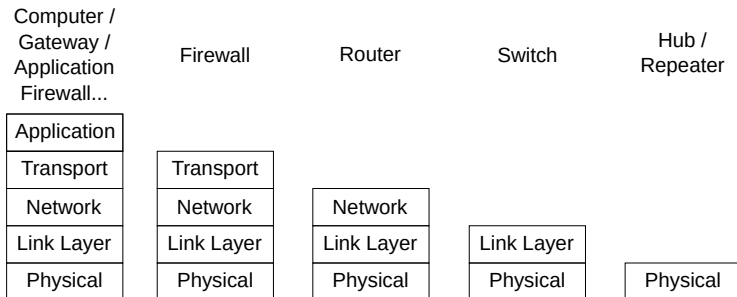
Today's Class

- A brief review on:
 - TCP/IP basics
 - LAN networking
 - WAN networking
 - Some protocols
- Goals:
 - Learn that are many things that can go wrong
 - Find "which is going wrong" at each moment is a challenge
 - Facilitate case-studies

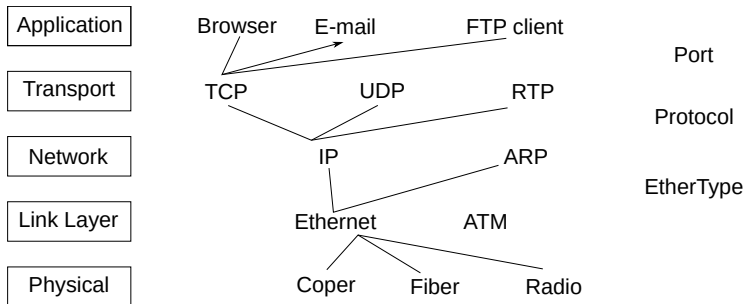
The TCP/IP stack



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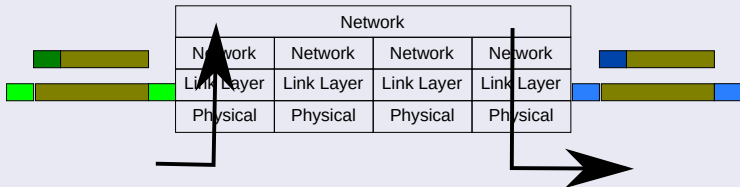


Routing inside the stack

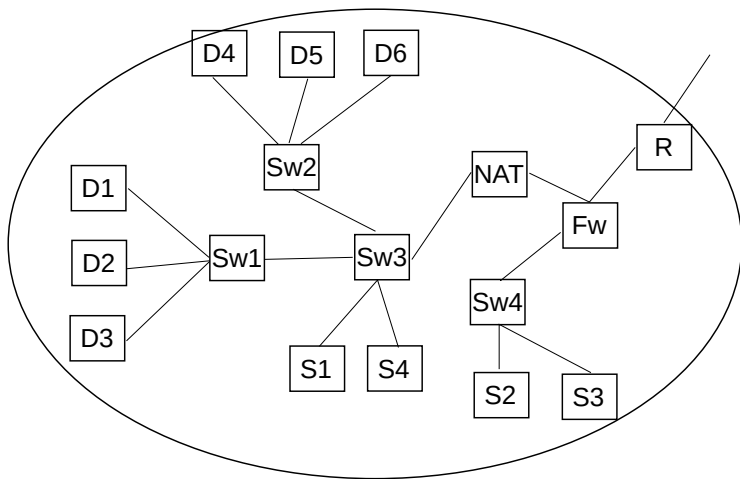


Routing on network devices

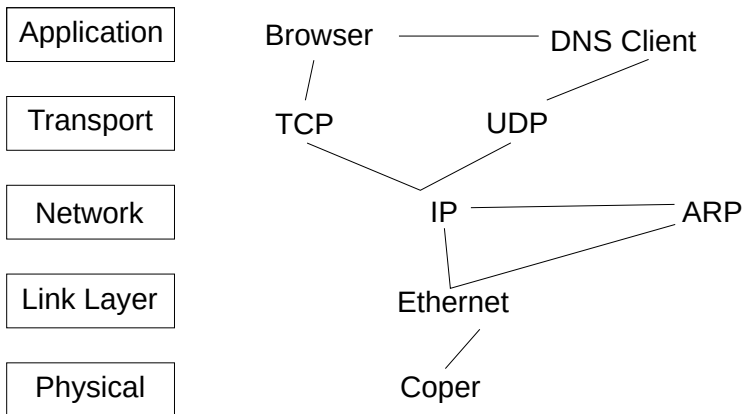
The router example



One LAN... Many Protocols



One Application Stack Example

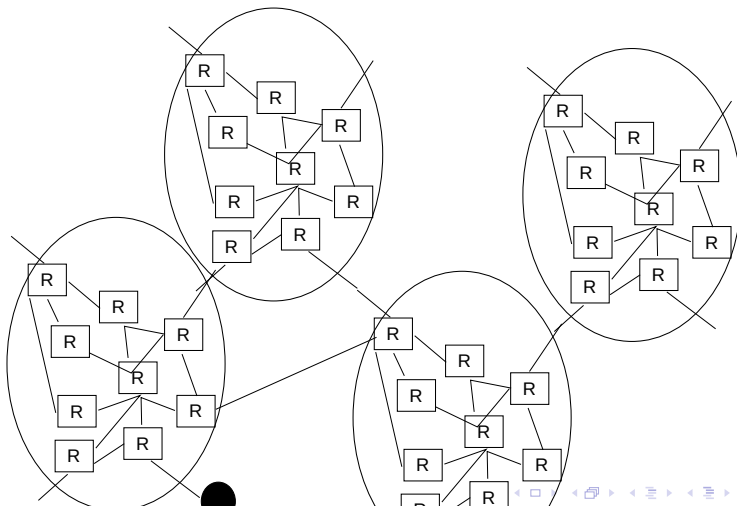


DNS

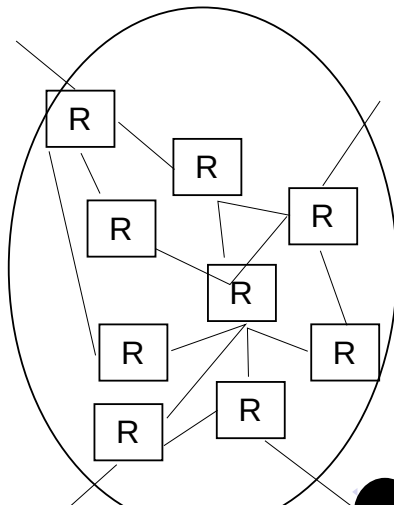
Some DNS record types

Type	Response
A	IPv4
AAAA	IPv6
CNAME	String
MX	String
NS	String
SOA	String
...	

One WAN... Many Protocols



The Autonomous System



Conclusions

- Networking is a complex subject
 - Different implementation alternatives
 - Important to define strategies and policies
- Many things can go wrong
 - Which and where is challenging
- Good knowledge of networking contributes to:
 - Defining good strategies
 - Diagnostic problems and resolve them