Computer Networks

Root of All Evil Edition

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A Tale of Two Computers

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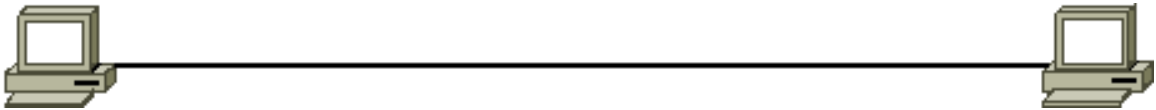
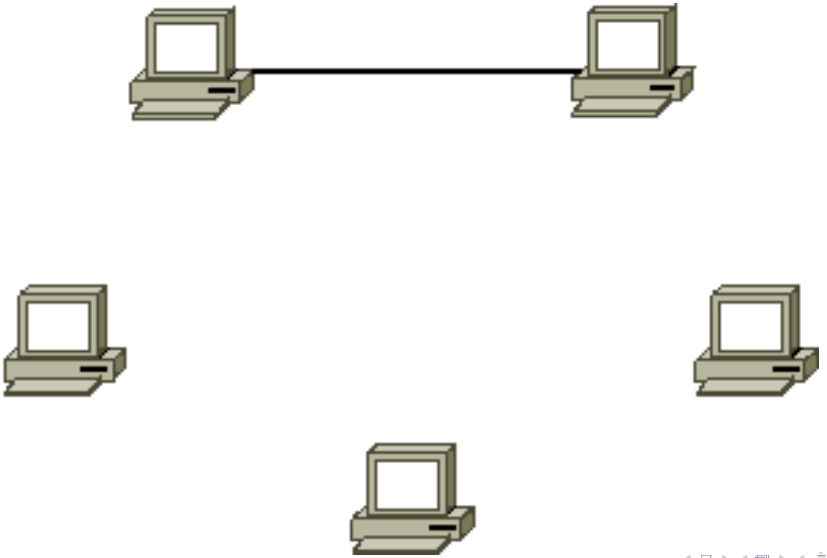


A Tale of More Computers



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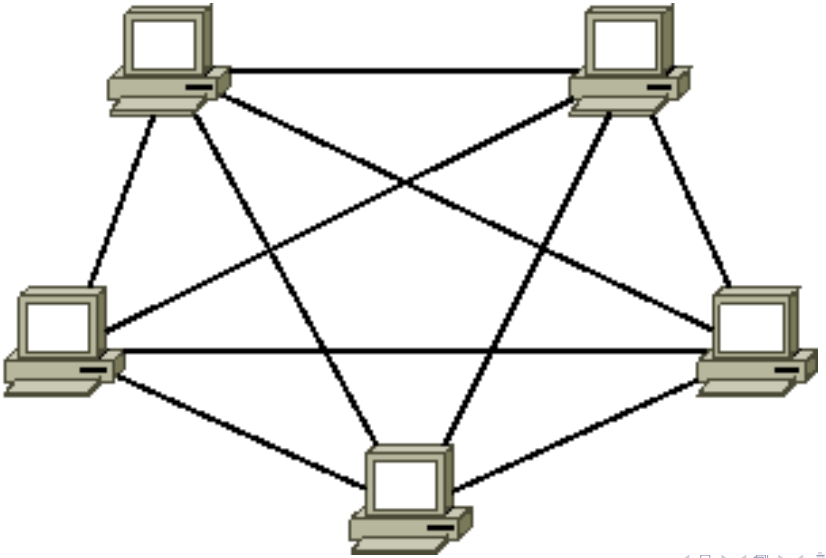

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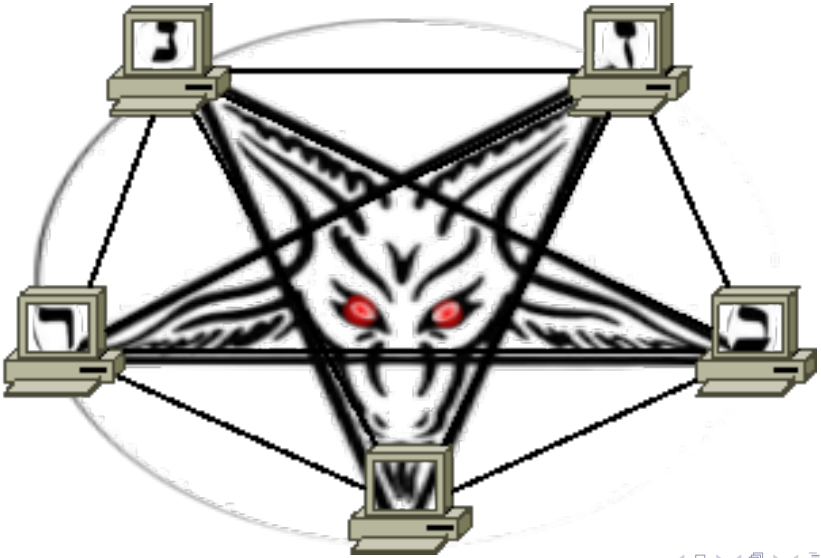

A Tale of More Computers

It gets exponentially harder to scale

$$Connections = \frac{N \times (N-1)}{2}$$

Cable and Network interface costs...

General chaos... Not good.

A Switch Comes to Town - Data Link

Like a post office

We need addresses

MAC F4:93:7F:E8:58:E3

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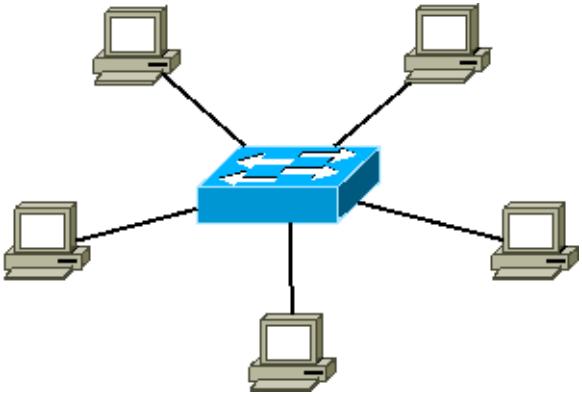

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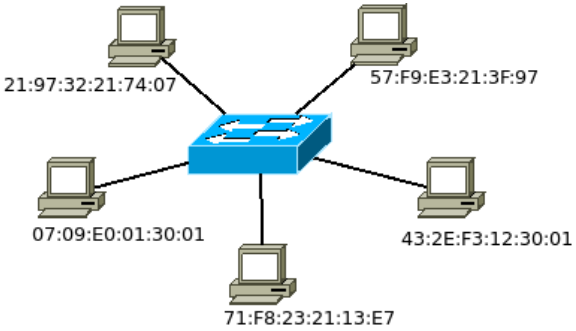
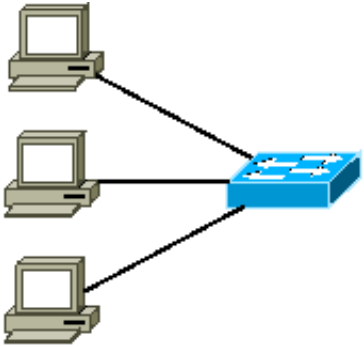
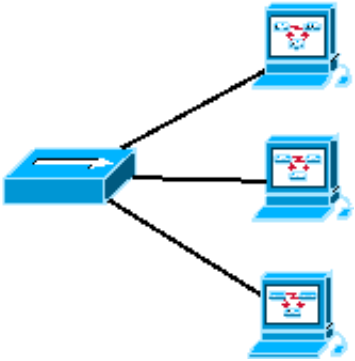


When Two Networks Collide - Internet Protocol





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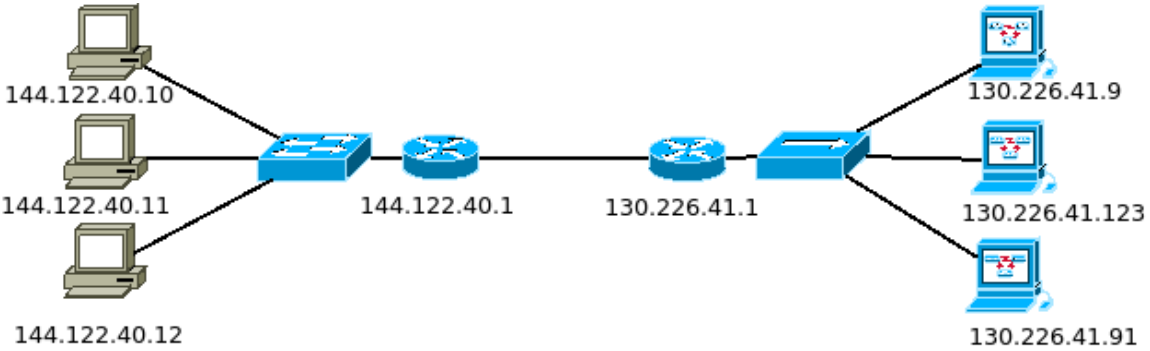
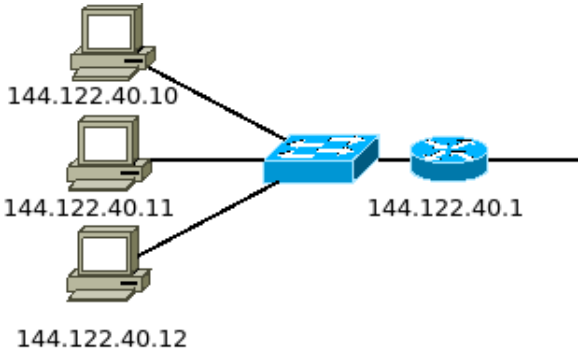


IP Addressing

IP address

Prefix: A Network
Suffix: A Node

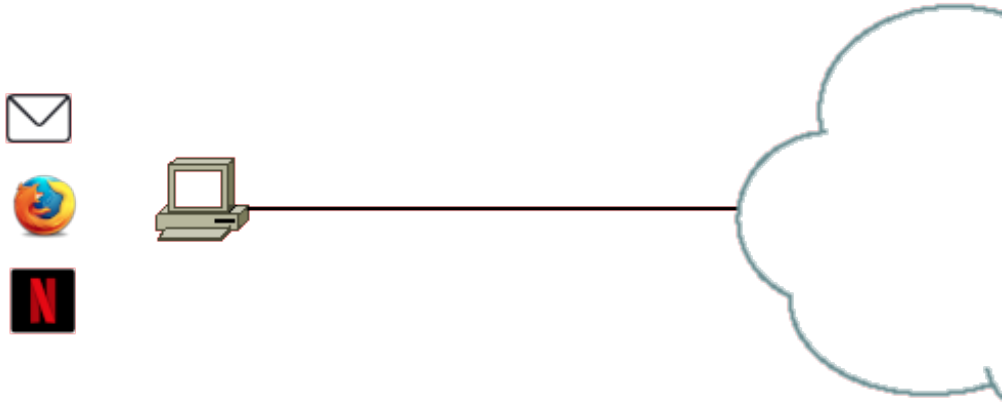
144.122.98. 32



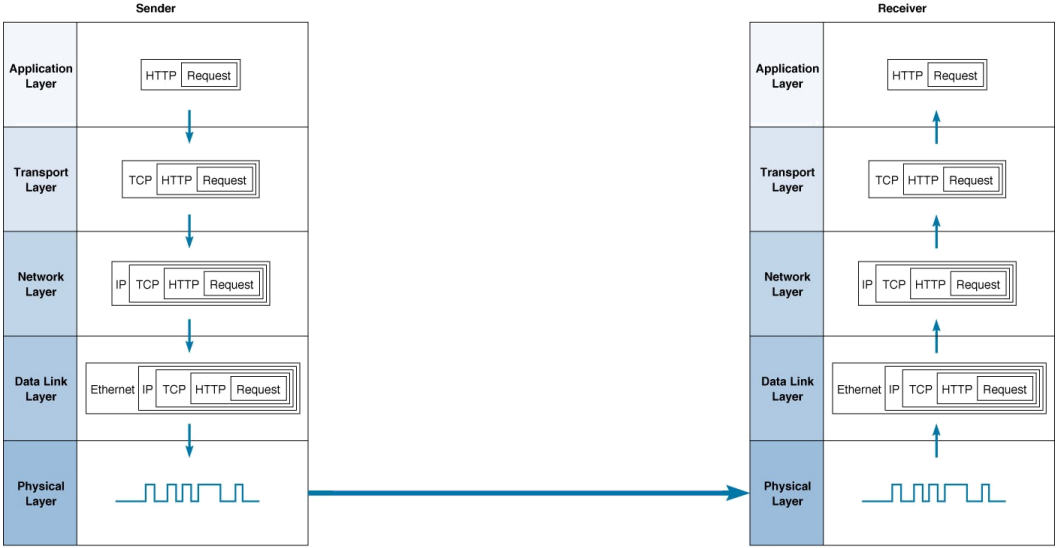
Why do we need IP addresses?

VPN and Geolocation

Each Computer Can Do So Many Wonderous Things!



Envelopes within envelopes...



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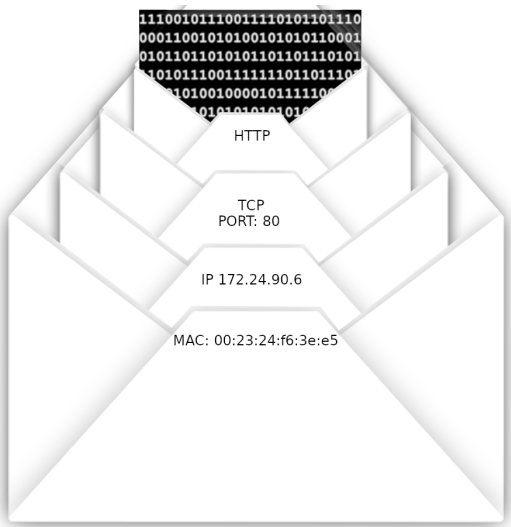
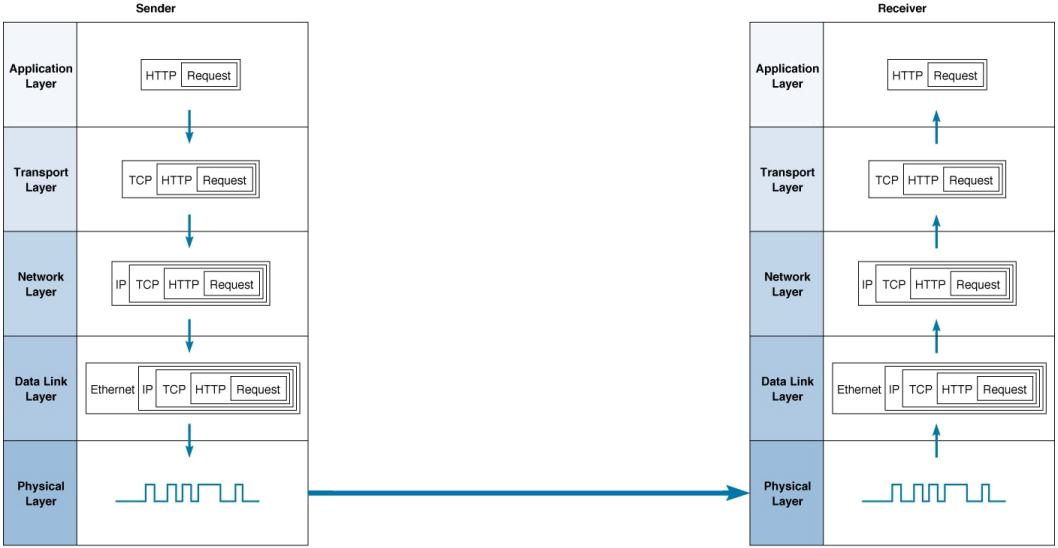


Address Resolution

Why envelopes within envelopes...



Why bother with layers? What is the advantage?