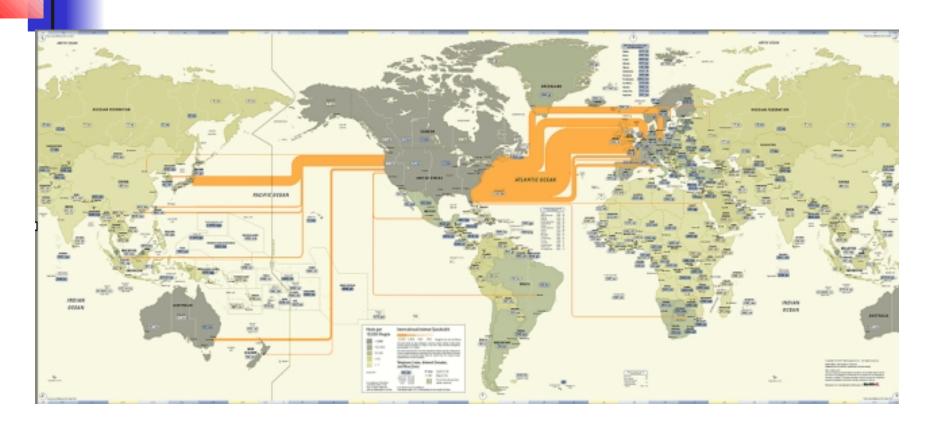
InternetInternet and Its Protocols

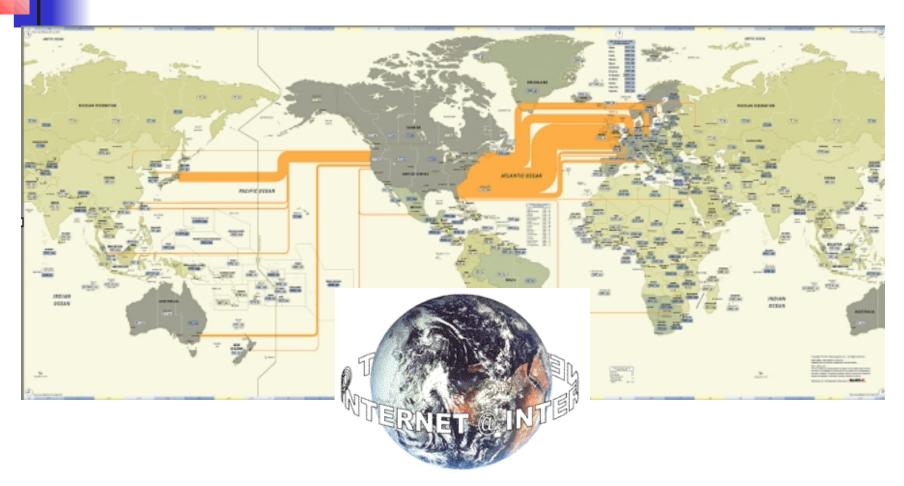


bako@ieee.org

What is the Internet

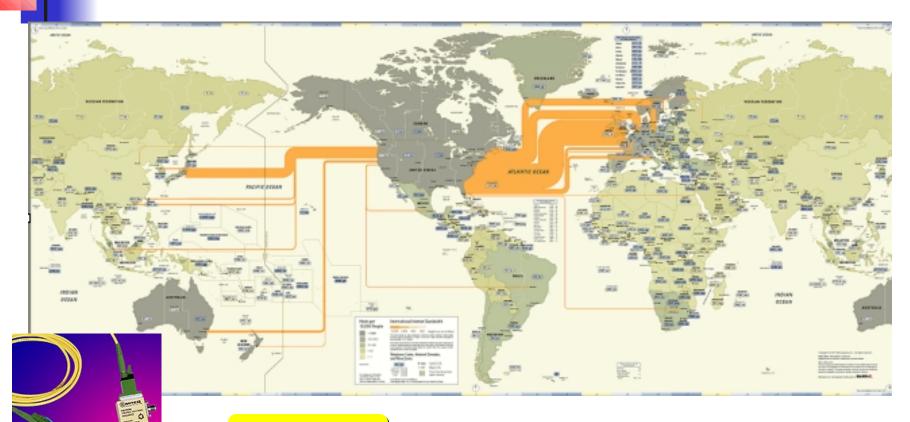


What is the Internet



global reach - World Wide Web network

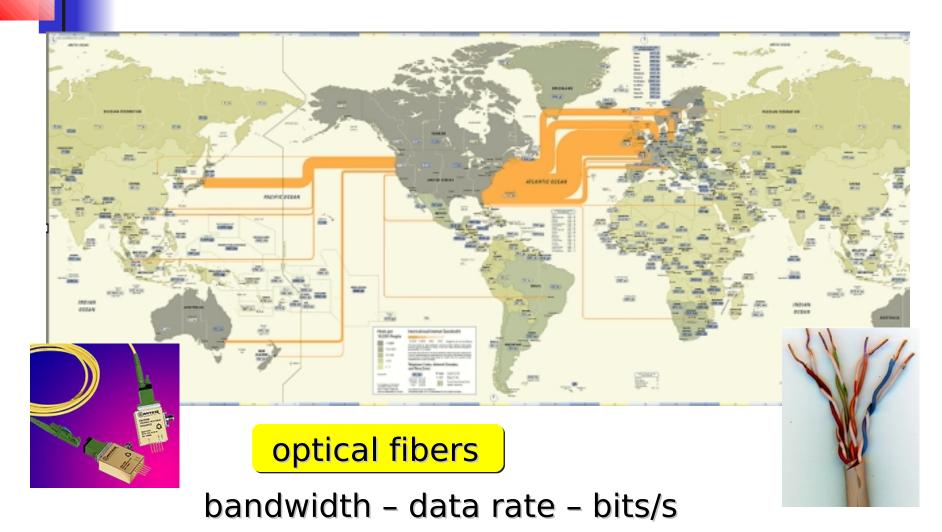
What is the Internet - links

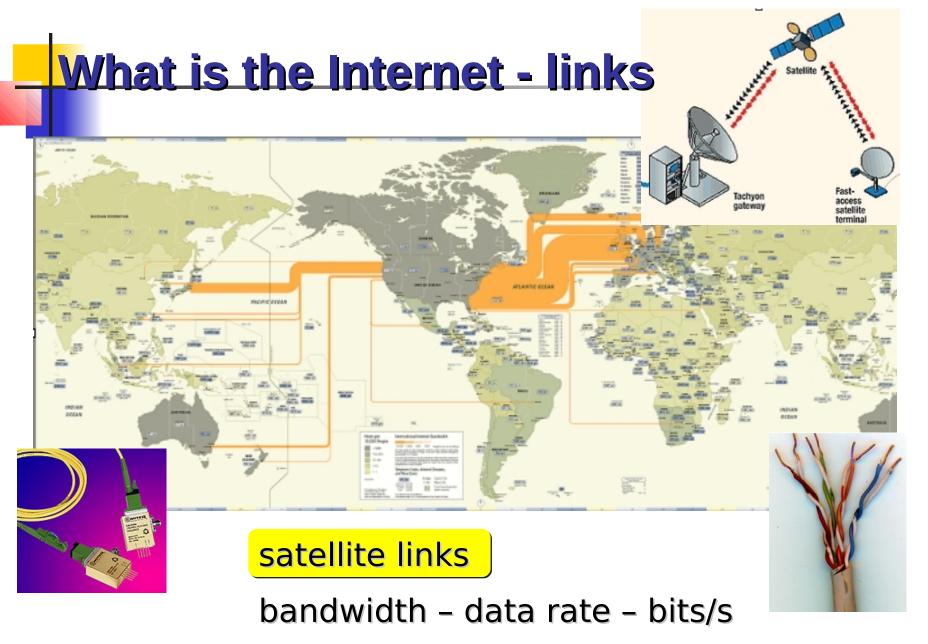


cables

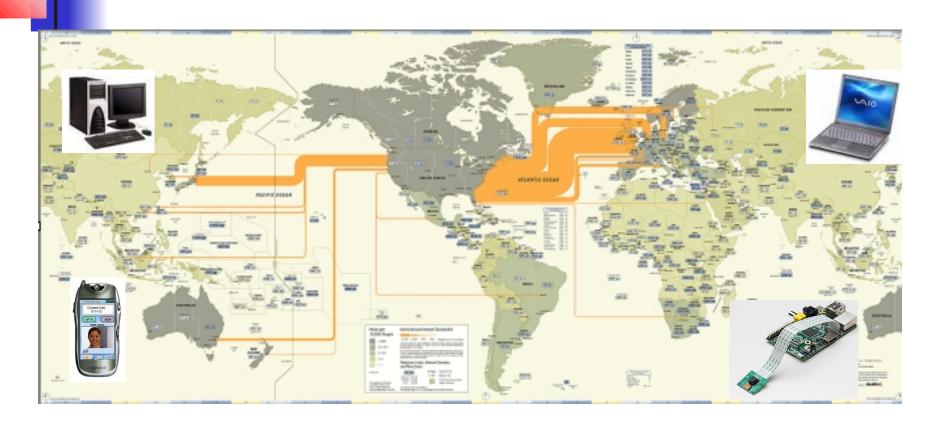
bandwidth - data rate - bits/s

What is the Internet - links



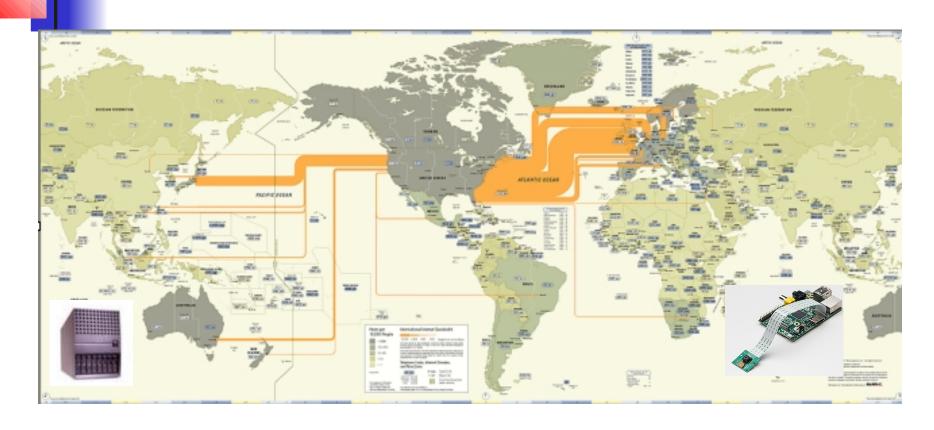


What is the Internet – clients/servers



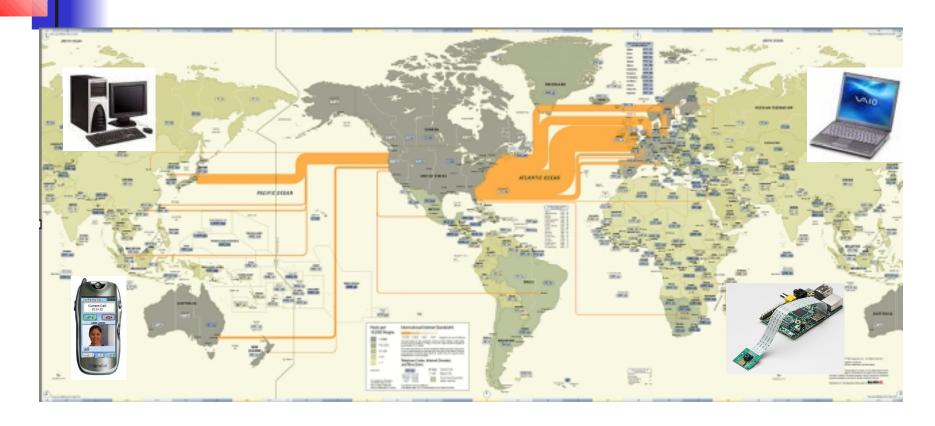
clients

What is the Internet – clients/servers

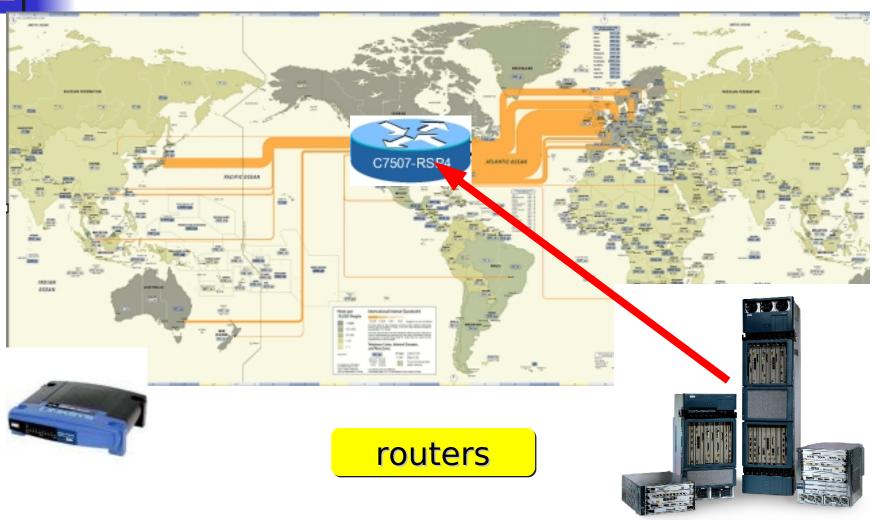


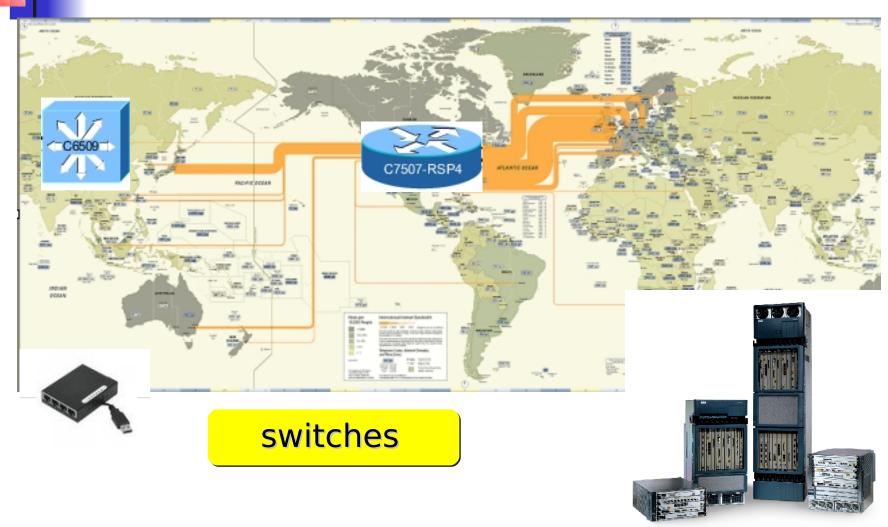
servers

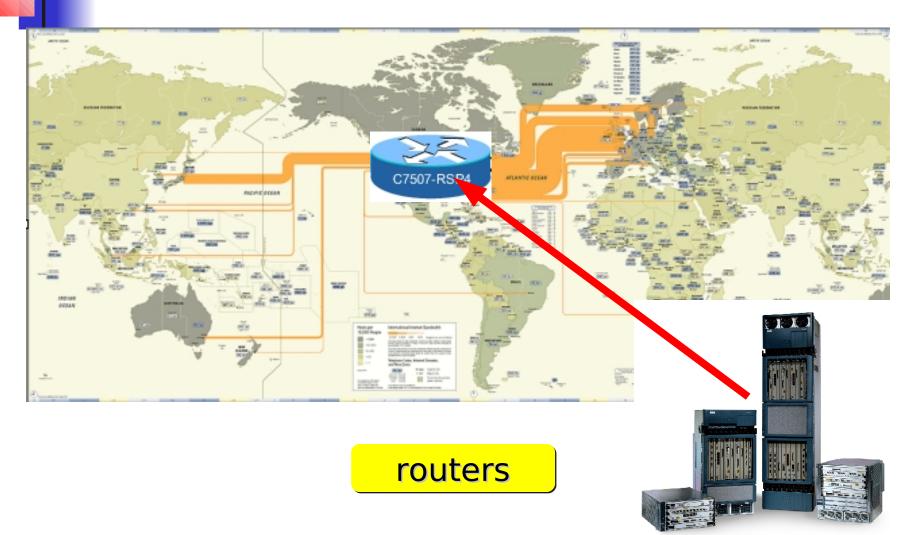
What is the Internet – clients/servers

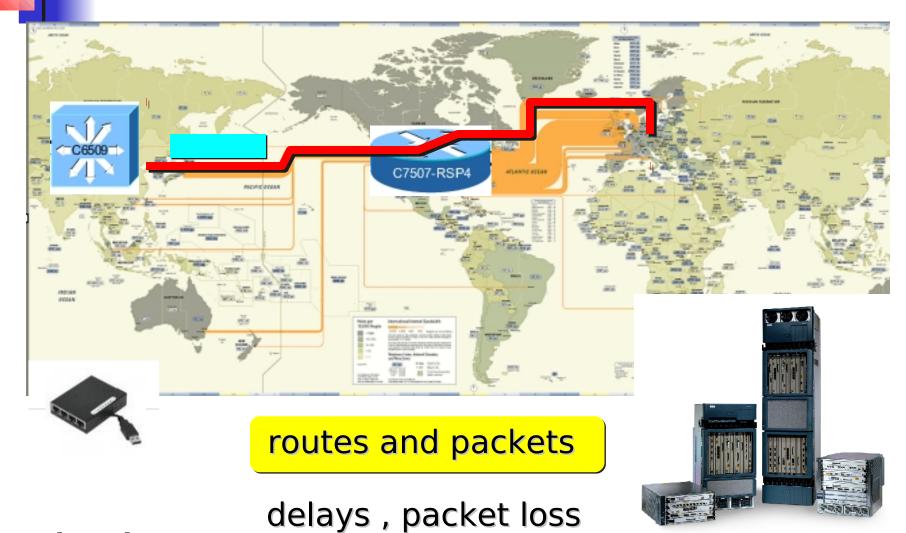


hosts or end systems

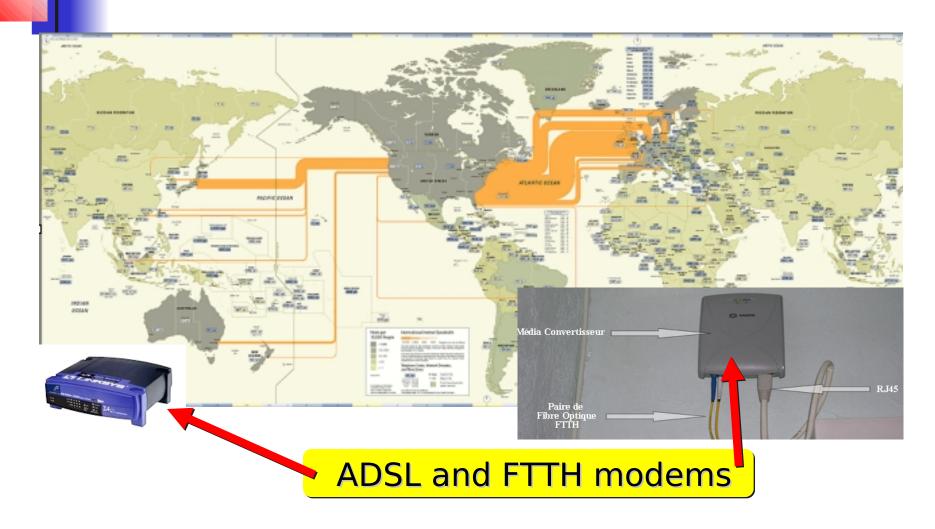








What is the Internet - modems





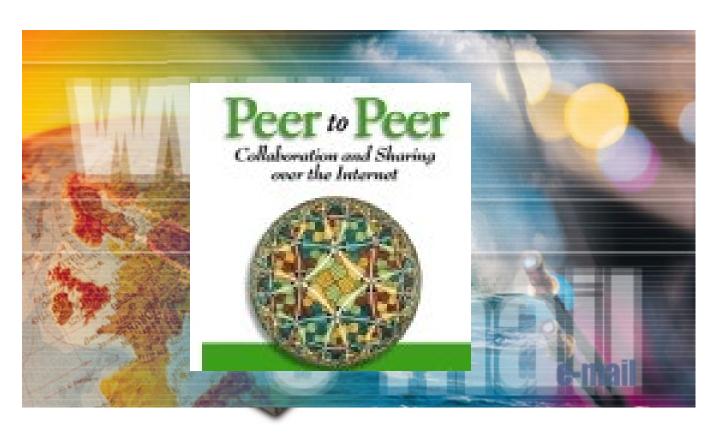
electronic mail – ASCII text reliable, error free,



internet telephony – VoIP low delay, constant delay,



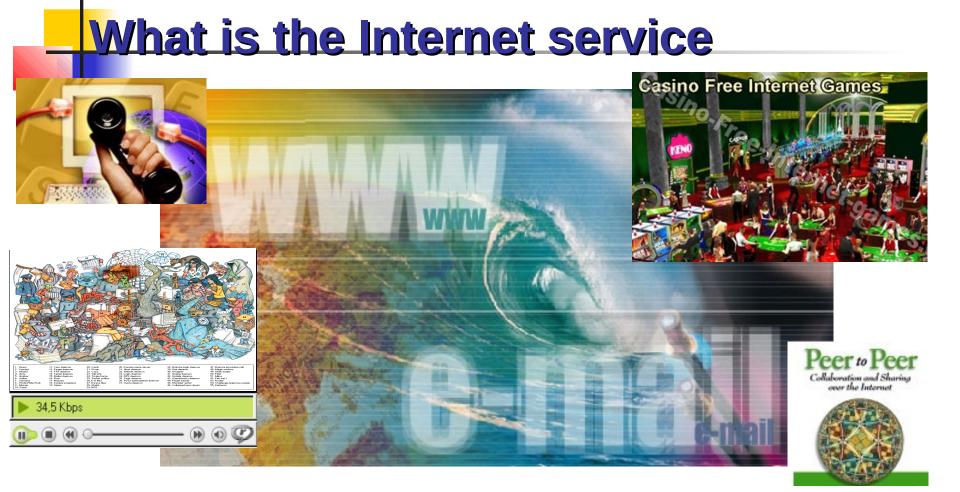
video streaming - Video on IP high data rate, low delay



file sharing data rate, reliability

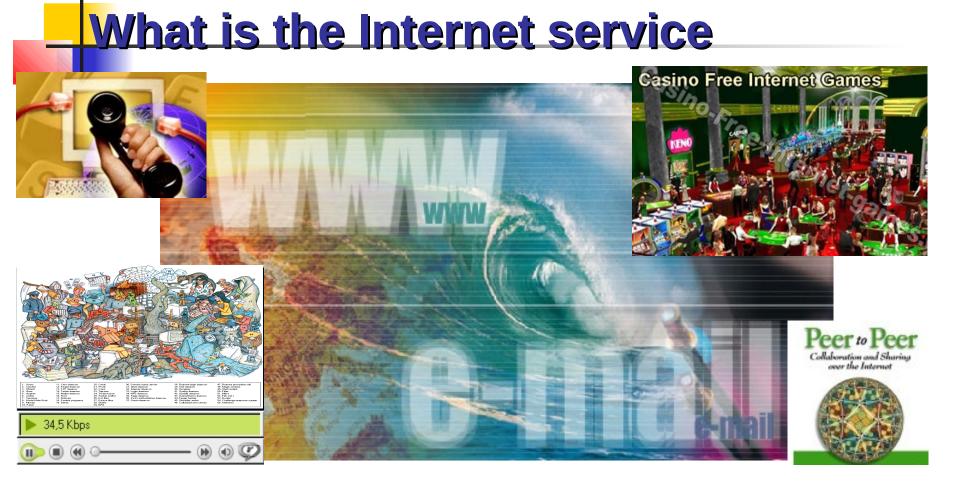


games - conferences - interactive multimedia high data rate, very low delay,



connection oriented

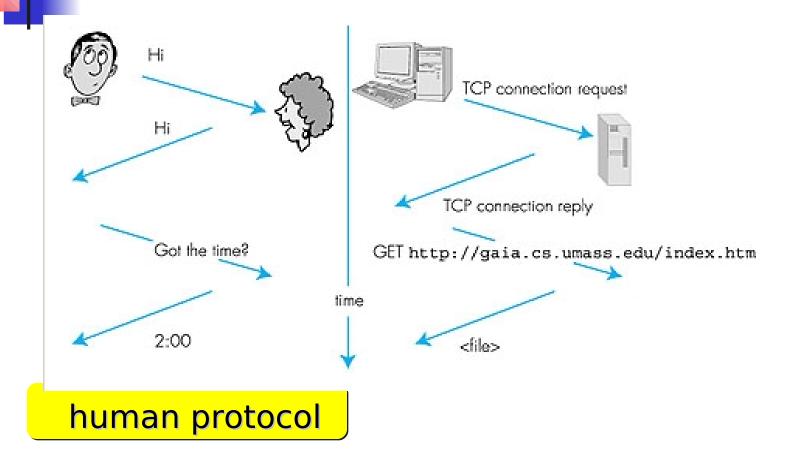
reliable service, high delay,



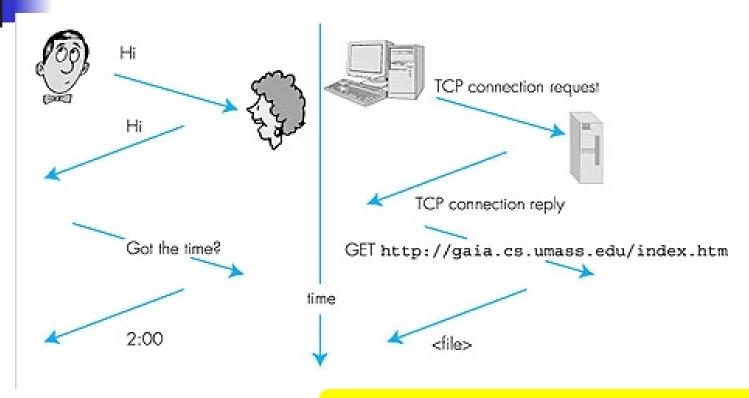
connectionless

low reliability, low delay

What is a protocol?

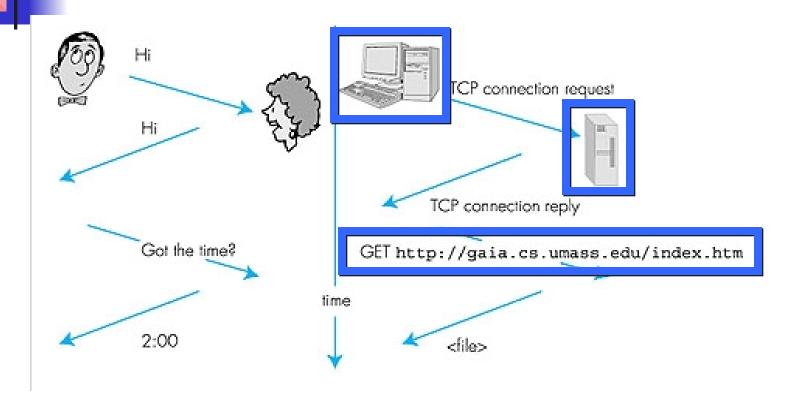


What is a protocol



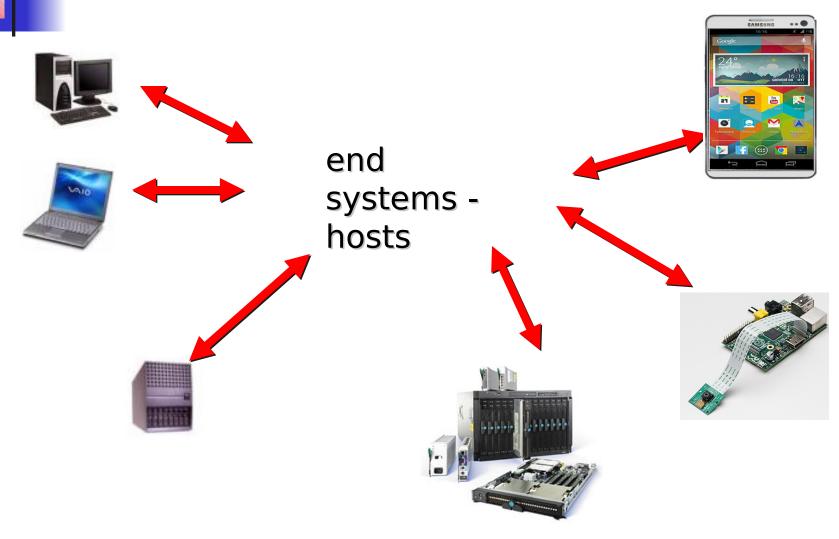
computer network protocol

What is a protocol?

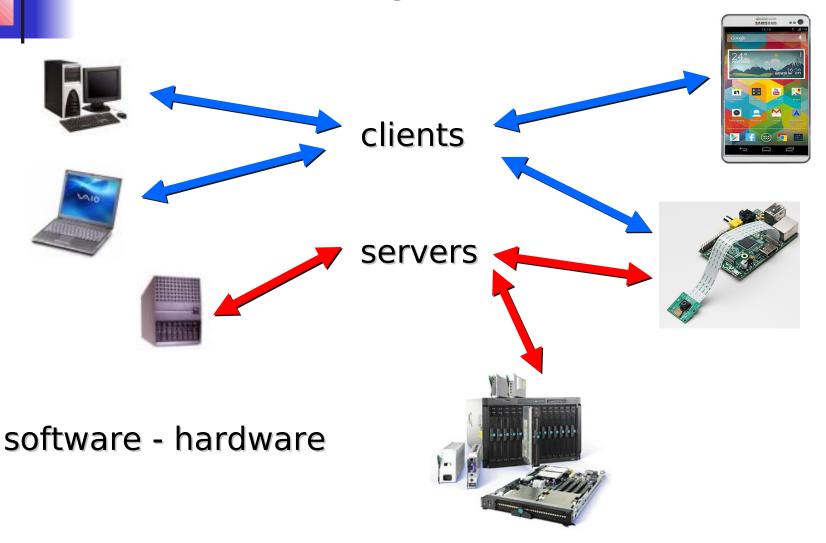


messages and communication entities

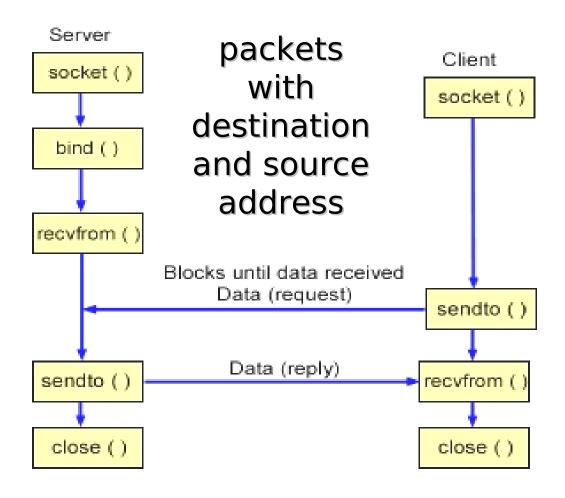
The network edge – end systems



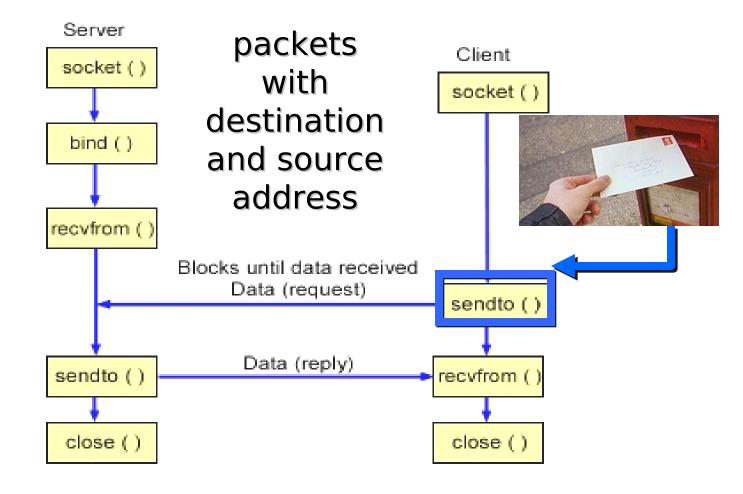
The network edge – clients/servers



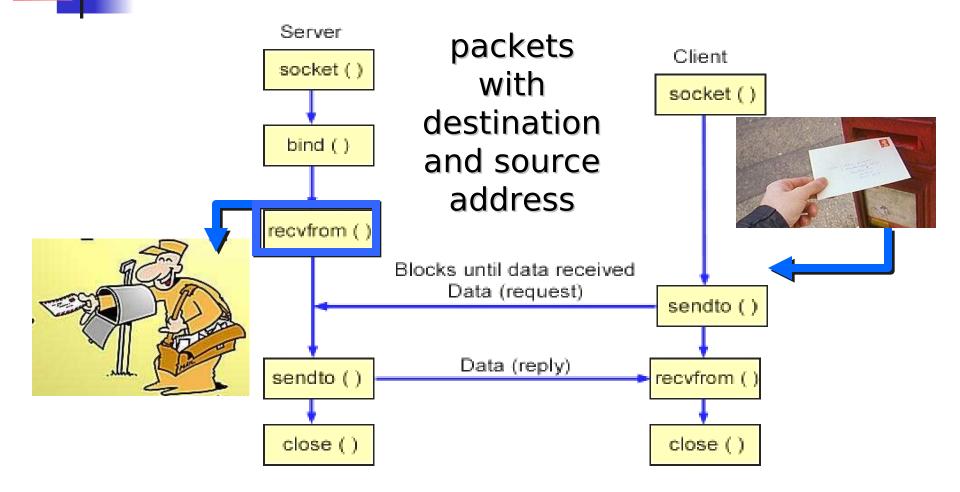
Connectionless Service

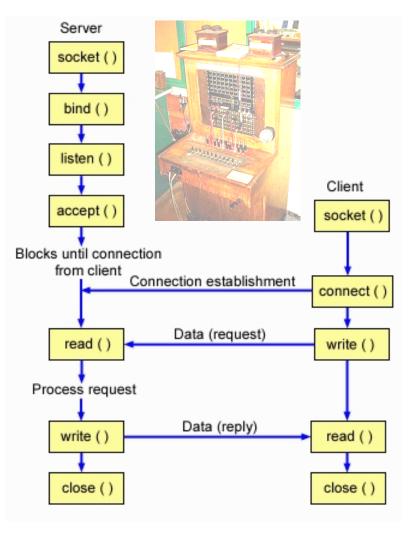


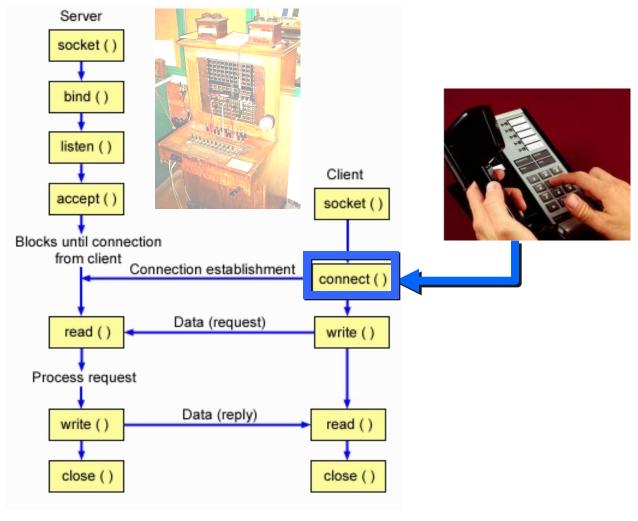
Connectionless Service

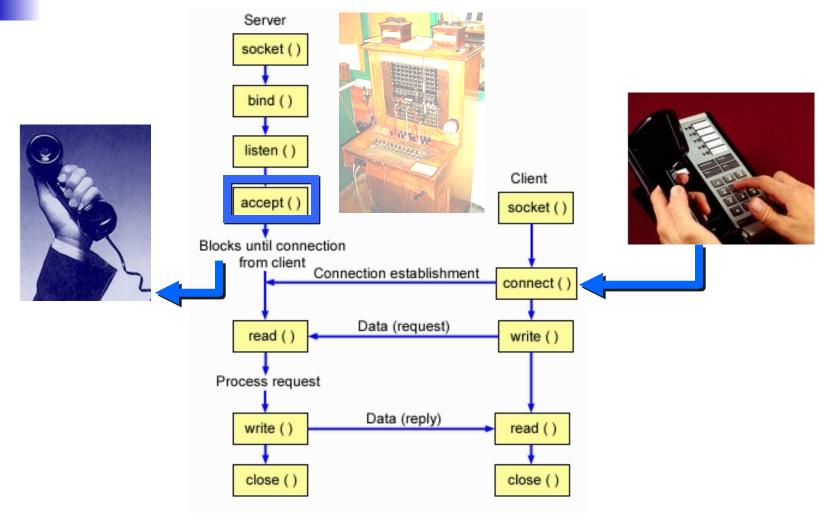


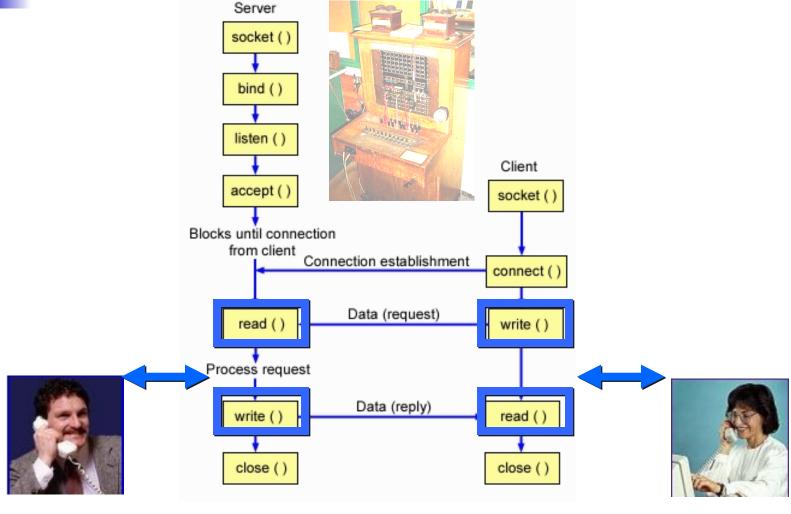
Connectionless Service

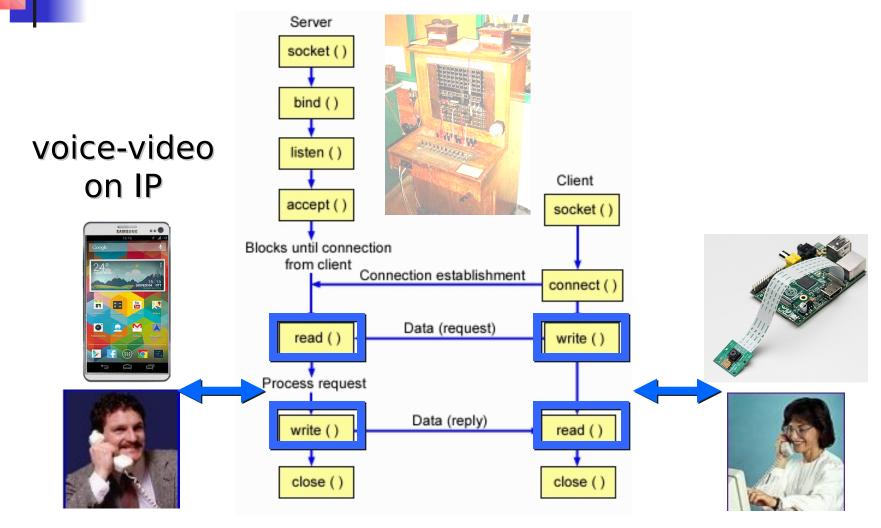




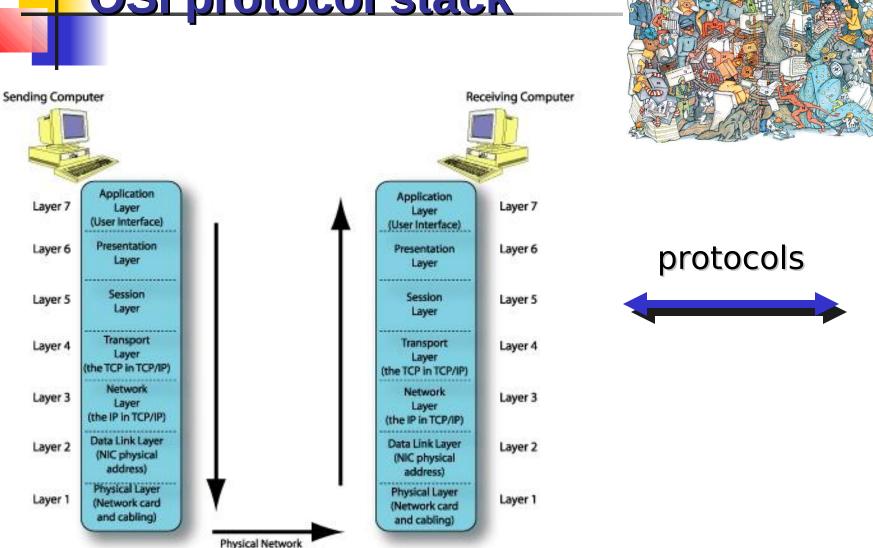






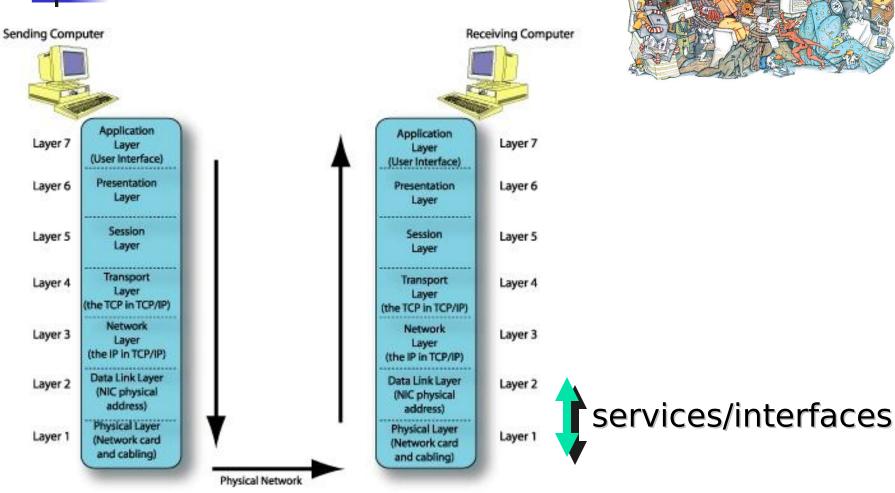


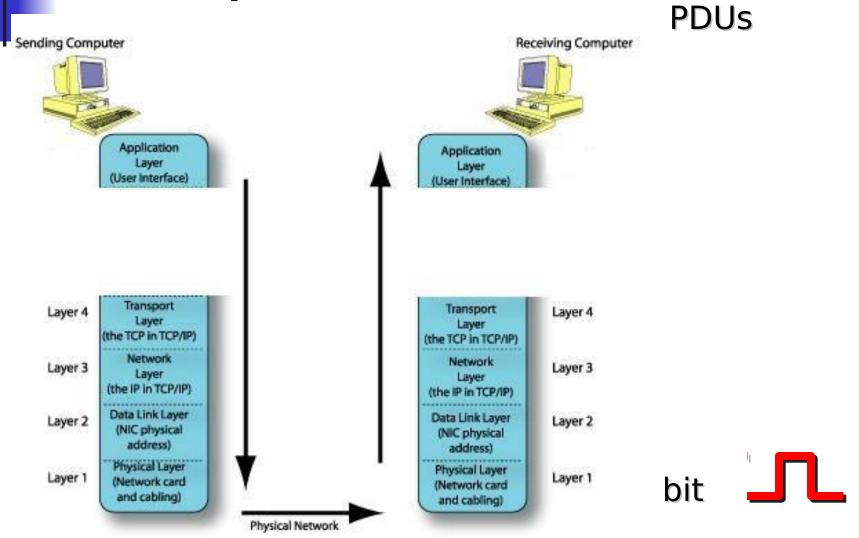
OSI protocol stack

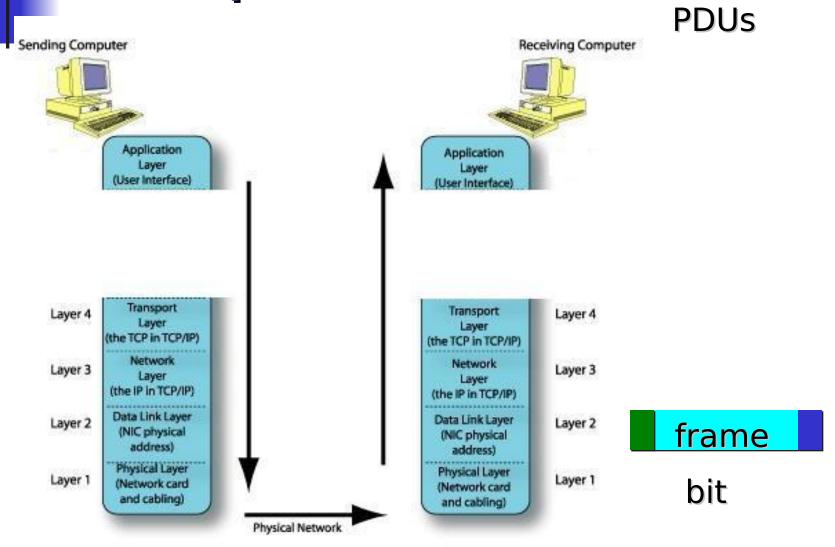


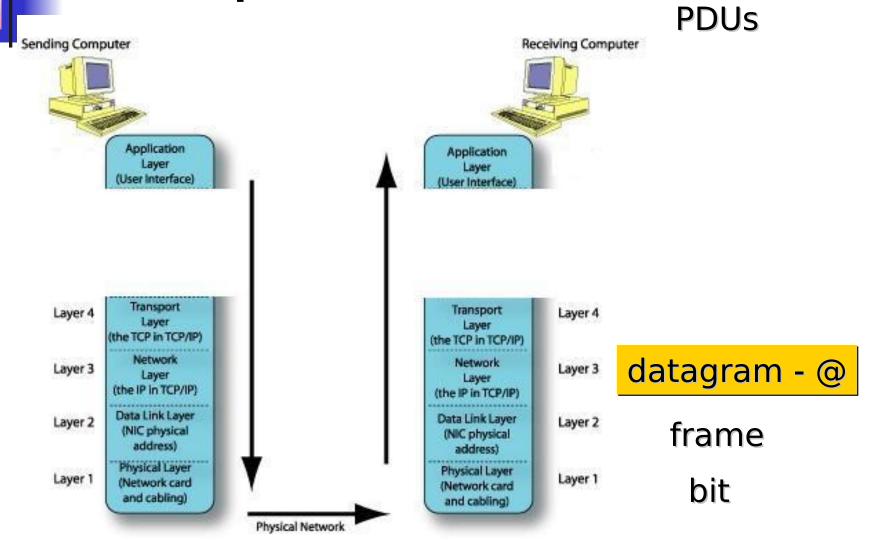
OSI protocol stack

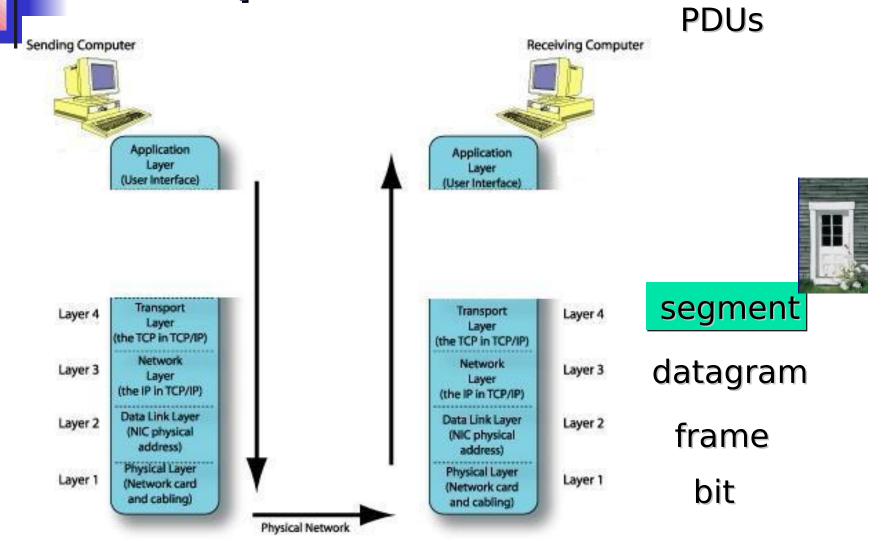






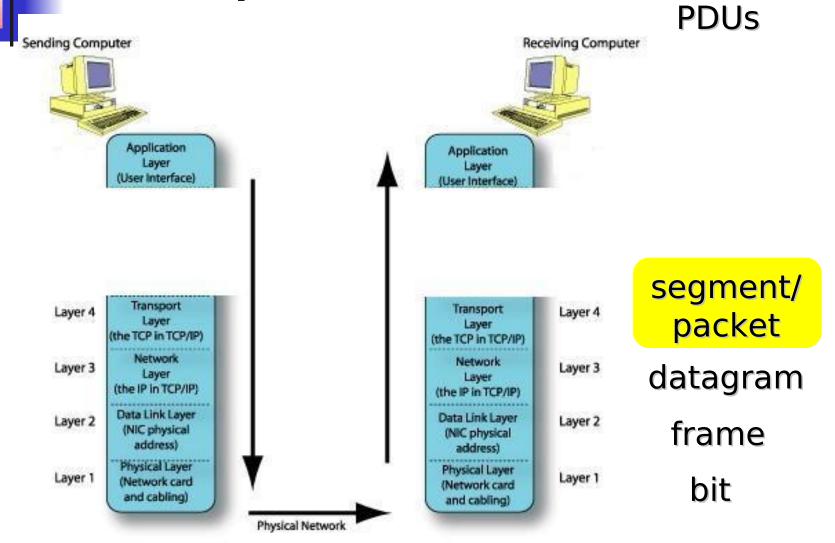






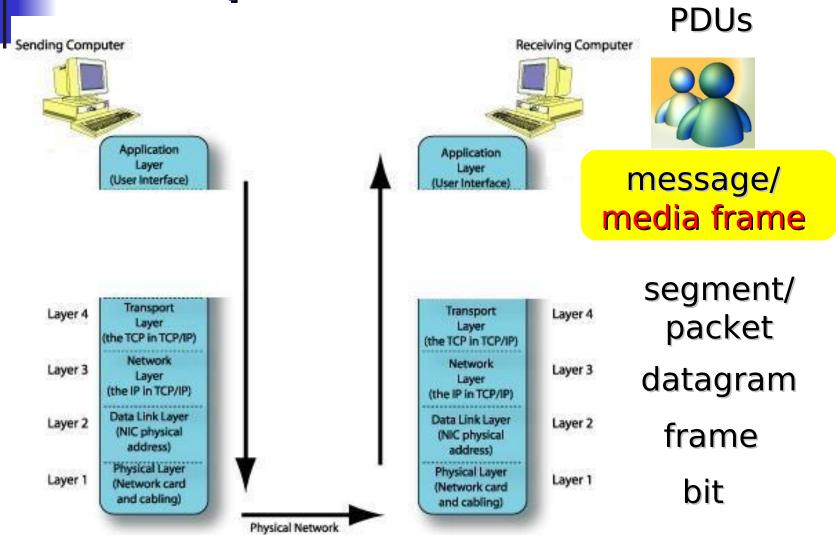
P. Bakowski

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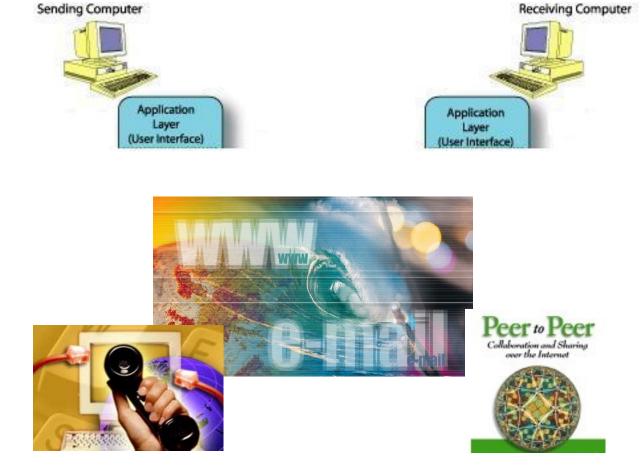
P. Bakowski

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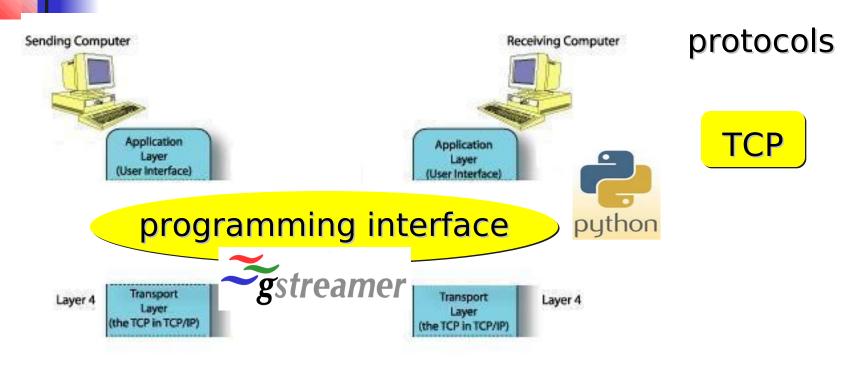
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Application layer



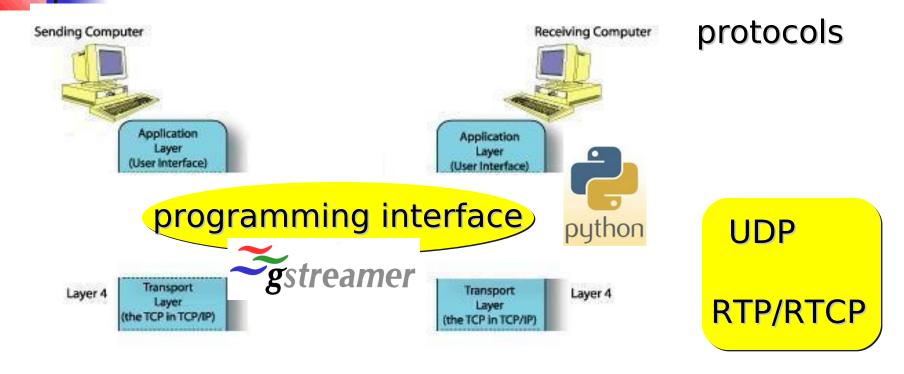
HTTP SMTP FTP VoIP VoD

Transport layer



connection oriented service

Transport layer



connectionless service

Summary

- Various pieces of hardware & software
- Systems & applications
- Communication modes
- Functional layers