

CC51C

Com. de Datos

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Semestre

- ♦ Reglas
- ♦ Introducción
- ♦ Capa Física
- ♦ Capa Red
- ♦ Capa Transporte
- ♦ Protocolos de Ruteos y/o Seguridad
- ♦ Manejo de Ancho de Banda

Reglas

- ♦ Horario
 - ♦ 10.30 -> 11.45
- ♦ Evaluaciones
 - ♦ 3 Controles, p promedio de controles
 - ♦ Examen, e
- ♦ Aprobación
 - ♦ $p \times 0.7 + e \times 0.3 \geq 3.95 = a$
 - ♦ 4 Tareas, promedio $\geq 3.95 = b$
- ♦ $NF = a \times 0.8 + b \times 0.2$

Introducción

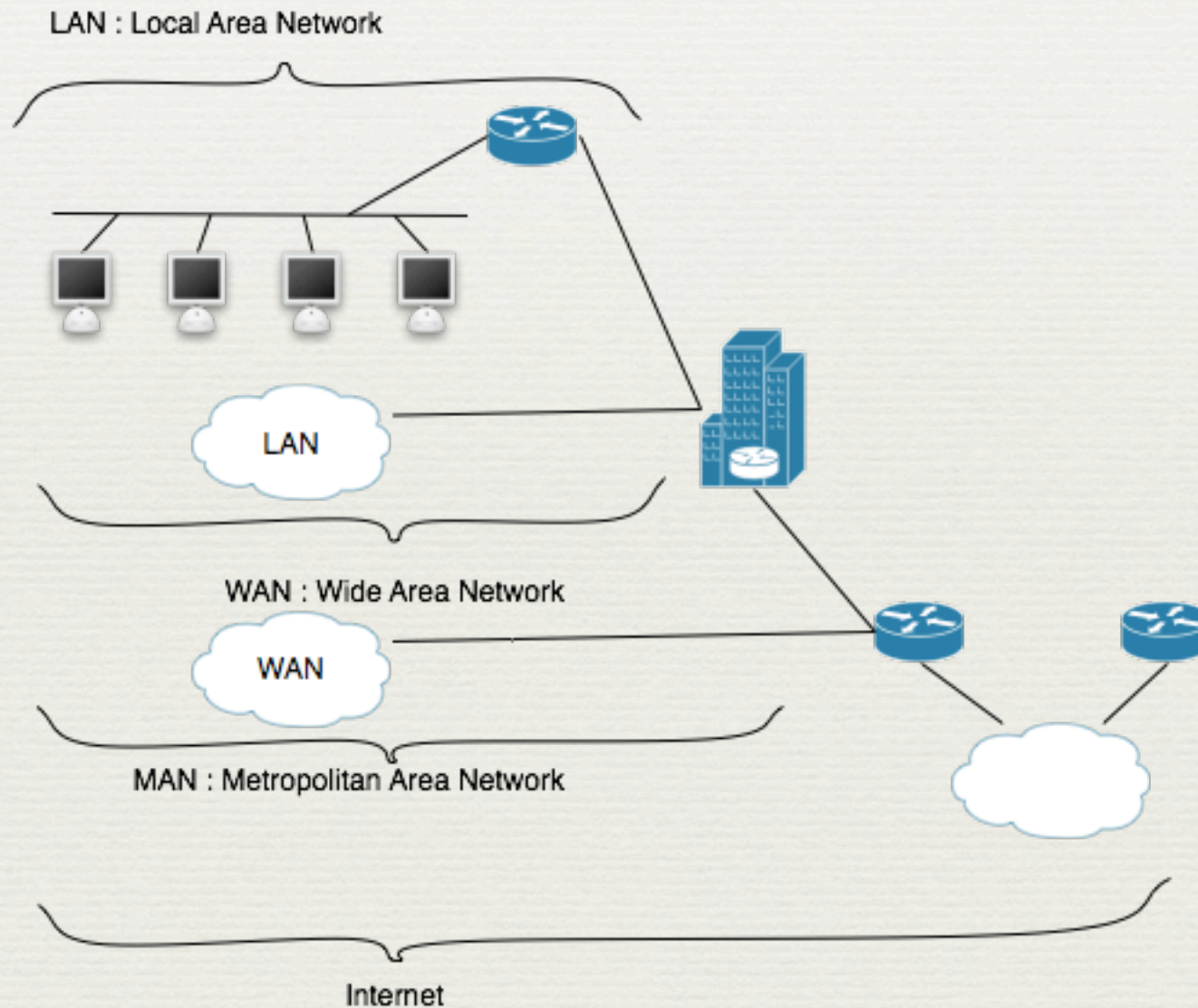
- ♦ Nace 1969, financiado por DARPA (2 ptos. en EE.UU.)
- ♦ Desde 1983 se utiliza TCP/IP en ARPANET, se crea IANA
- ♦ Gran explosión 1990 por WEB
- ♦ Tarifa plana telefónica USA 1997
- ♦ <http://es.wikipedia.org/wiki/Internet>
- ♦ <http://www.dcc.uchile.cl/~ppoblete/sigloxxi-27Feb96.html>

Introducción

Fisonomía de una RED

- ♦ Medio físico
- ♦ Protocolo de comunicación
- ♦ Control de errores
- ♦ Tamaño máximo del paquete a transportar

Terminología



Velocidades

- ♦ 300 bps (baudios por segundos), 56.000
- ♦ 64 bps (bits per second) mínimo en voz
- ♦ ATM 25 Mbps -> 655 Mbps
- ♦ Ethernet 10 Mbps, Half duplex -> 40/100
Gbps FD

Interconexión de Redes



Distintos Medios Físicos

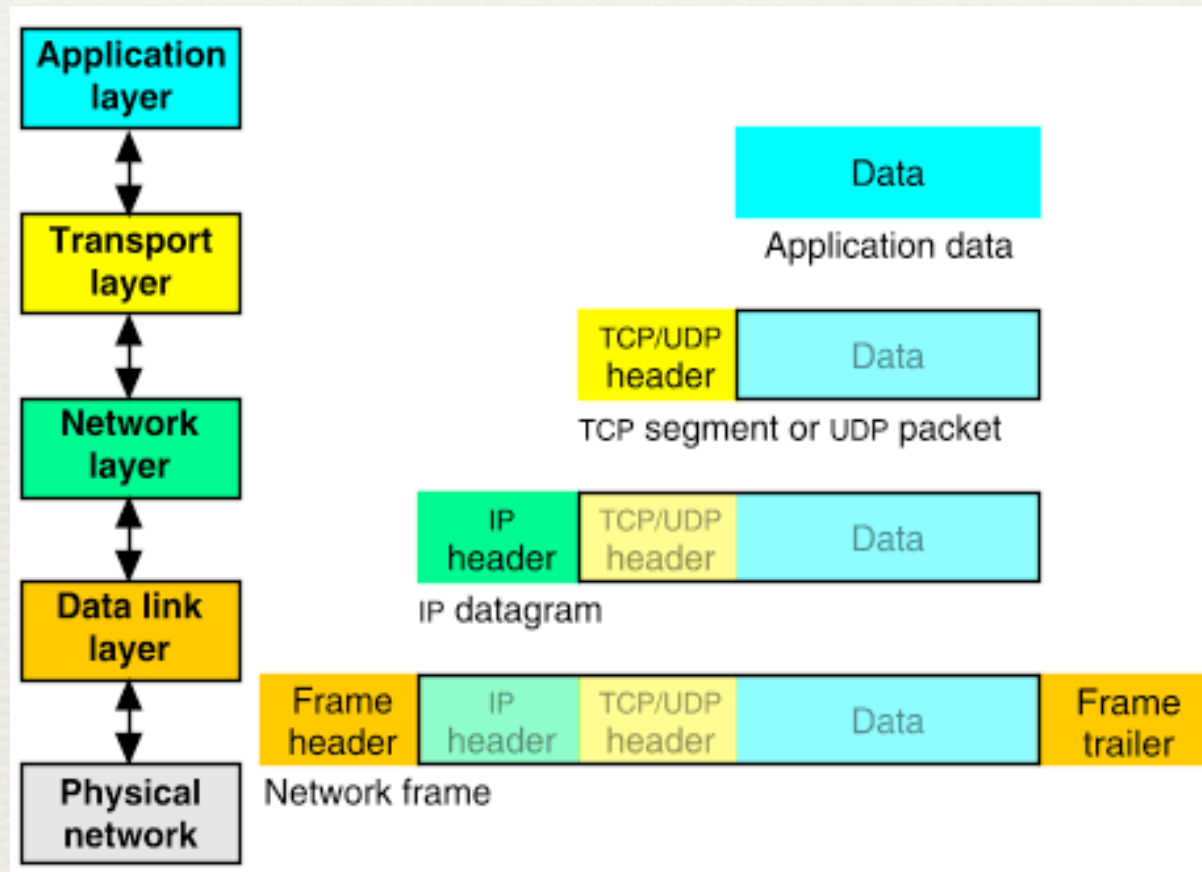


Distintos Protocolos de Red

Modelo de capas

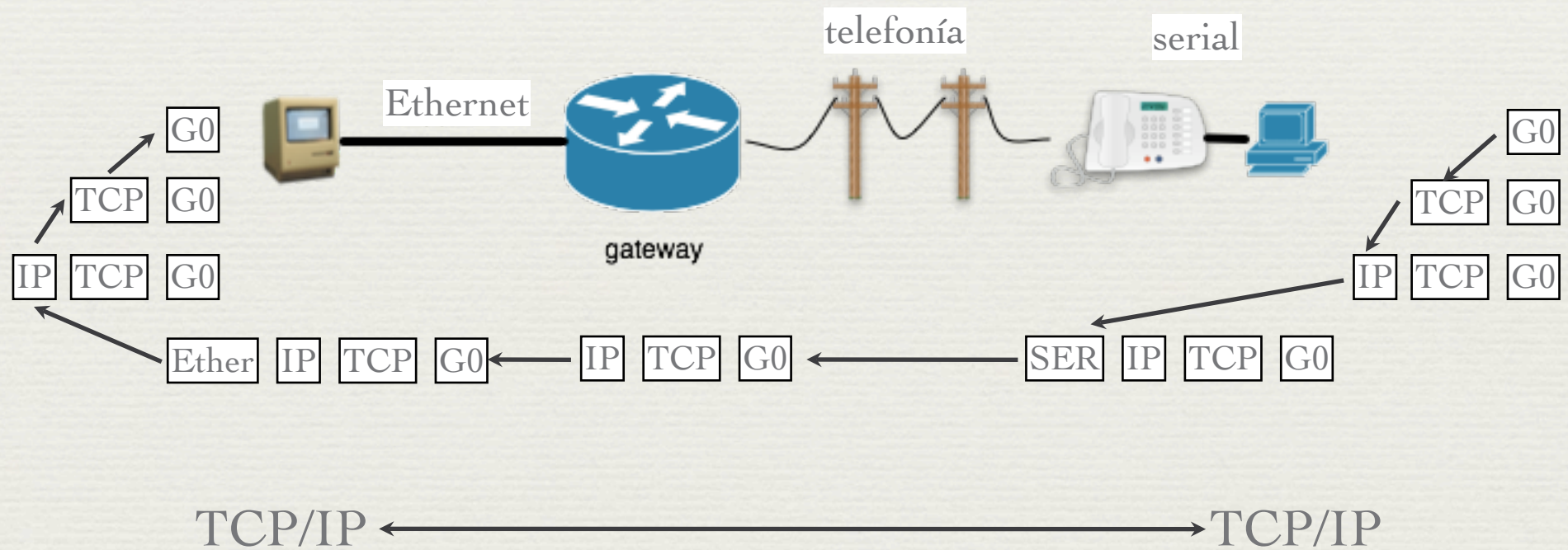
Group	#	Layer Name	Key Responsibilities	Data Type Handled	Scope	Common Protocols and Technologies
Lower Layers	1	Physical	Encoding and Signaling; Physical Data Transmission; Hardware Specifications; Topology and Design	Bits	Electrical or light signals sent between local devices	(Physical layers of most of the technologies listed for the data link layer)
	2	Data Link	Logical Link Control; Media Access Control; Data Framing; Addressing; Error Detection and Handling; Defining Requirements of Physical Layer	Frames	Low-level data messages between local devices	IEEE 802.2 LLC, Ethernet Family; Token Ring; FDDI and CDDI; IEEE 802.11 (WLAN, Wi-Fi); HomePNA; HomeRF; ATM; SLIP and PPP
	3	Network	Logical Addressing; Routing; Datagram Encapsulation; Fragmentation and Reassembly; Error Handling and Diagnostics	Datagrams / Packets	Messages between local or remote devices	IP; IPv6; IP NAT; IPsec; Mobile IP; ICMP; IPX; DLC; PLP; Routing protocols such as RIP and BGP
	4	Transport	Process-Level Addressing; Multiplexing/Demultiplexing; Connections; Segmentation and Reassembly; Acknowledgments and Retransmissions; Flow Control	Datagrams / Segments	Communication between software processes	TCP and UDP; SPX; NetBEUI/NBF
Upper Layers	5	Session	Session Establishment, Management and Termination	Sessions	Sessions between local or remote devices	NetBIOS, Sockets, Named Pipes, RPC
	6	Presentation	Data Translation; Compression and Encryption	Encoded User Data	Application data representations	SSL; Shells and Redirectors; MIME
	7	Application	User Application Services	User Data	Application data	DNS; NFS; BOOTP; DHCP; SNMP; RMON; FTP; TFTP; SMTP; POP3; IMAP; NNTP; HTTP; Telnet

Modelo de capas



Interconexión de Redes

Distintos Medios Físicos



Protocolos de Red Estandarizados

Fragmentación

