

Linux Networking: Relationships among Protocols

David Morgan

© David Morgan 2003,2004

What's with all these
protocols?

PPP

ICMP

TCP

IP

Ethernet

...ETC

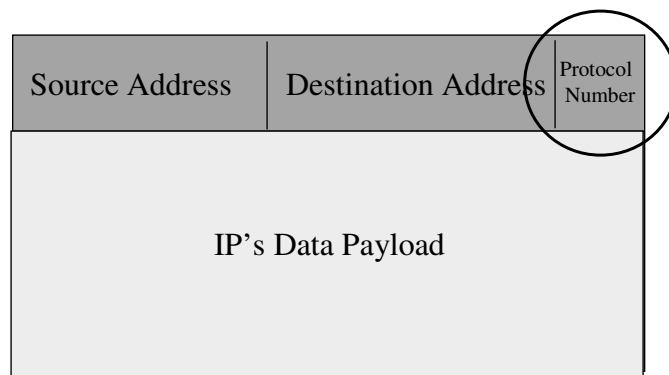
© David Morgan 2003,2004

Protocols

- have published, characteristic frame or packet structure
 - “payload” section to hold data carried
 - “overhead” section (header and/or trailer)
- header usually holds indicator of payload
 - number
 - type
 - port
 - code

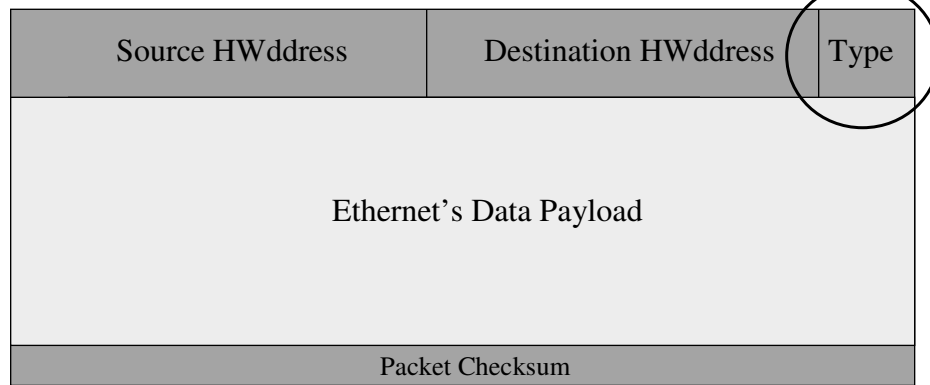
© David Morgan 2003,2004

IP packet structure



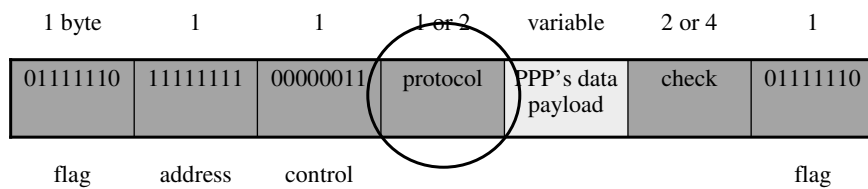
© David Morgan 2003,2004

Ethernet frame structure



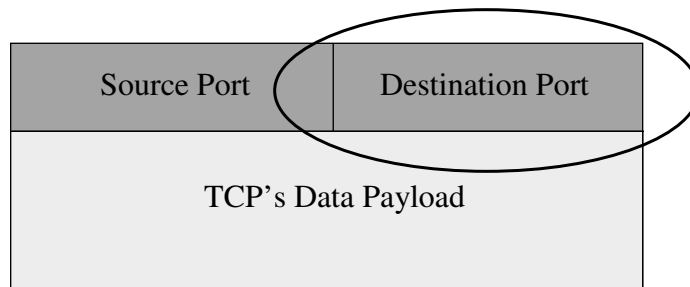
© David Morgan 2003,2004

PPP frame structure



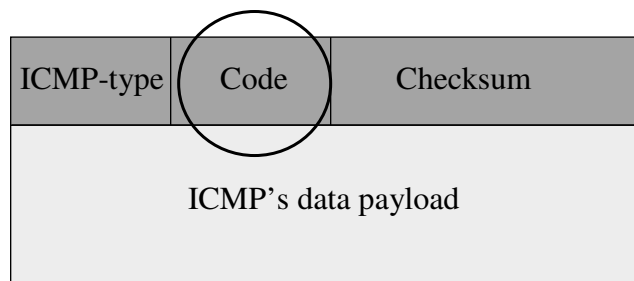
© David Morgan 2003,2004

TCP segment structure



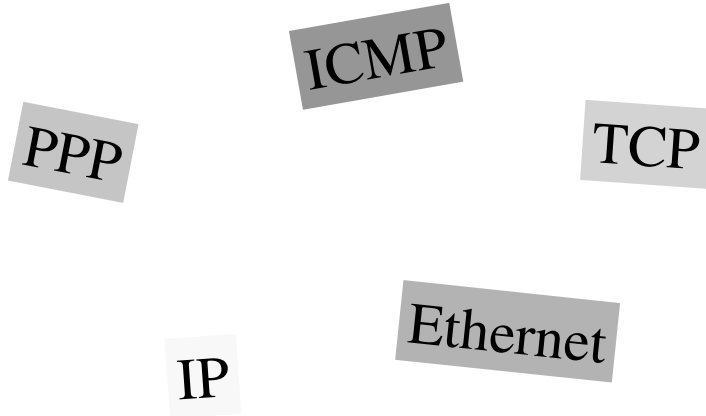
© David Morgan 2003,2004

ICMP packet structure



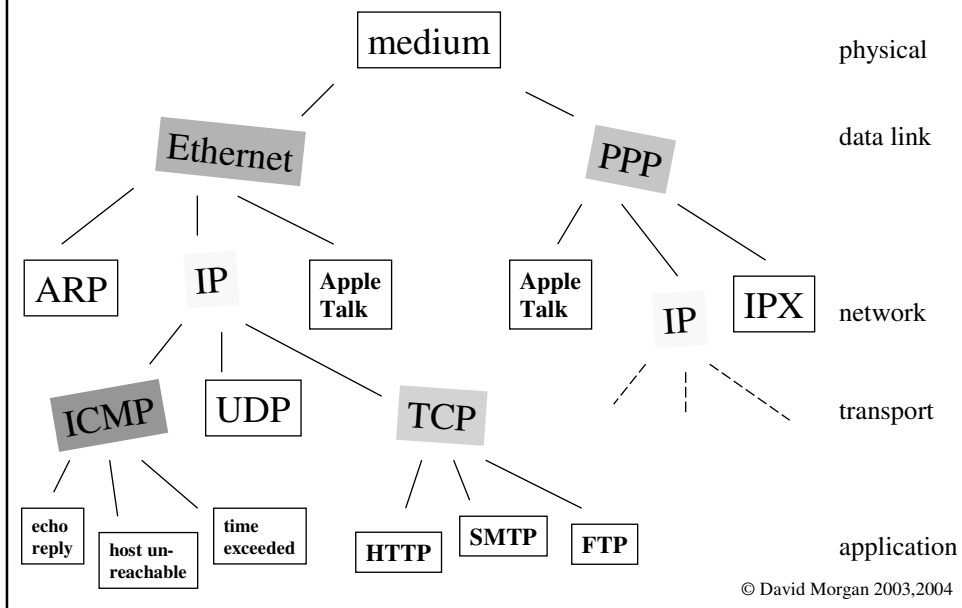
© David Morgan 2003,2004

How do protocols relate?



© David Morgan 2003,2004

Their payloads are each other



© David Morgan 2003,2004

Example exchanges (following)

- browsing a website using a modem
- pinging another host on a common LAN

© David Morgan 2003,2004

