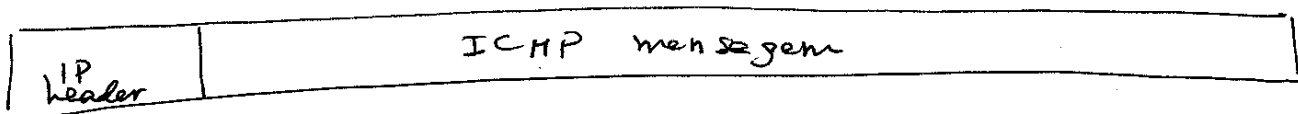


PROTÓCOLO FUNDAMENTAIS INTERNET

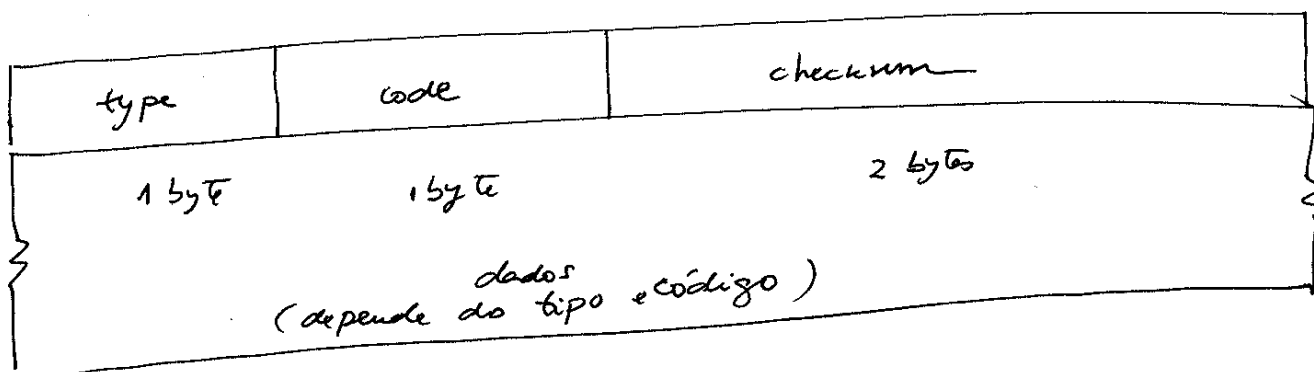
AULA 5 ICMP PROTOCOL (Internet control message protocol)

ICMP - é utilizado para comunicar situação de erro determinísticas na rede, bem como oferecer outras informações (routing) sobre a rede

A mensagem ICMP é enviada dentro de um IP datagrama:



FORMATO ICMP Steven pag 70



TIPOS e CÓDIGOS Stevens pag 71

(mais importantes)

tipo	código	
0	0	echo reply (ping)
8	0	echo request (ping)
3	0	network unreachable
	1	host unreachable
	2	protocol unreachable
	3	port unreachable
	4	fragmentation needed

tipo código

4 0 source quench (elementary flow control)
demasiado tráfico slow-down!

5 0 redirect for network
1 " for host

11 0 time-to-live equals 0

13 0 time stamp request

13 1 time stamp reply

EXEMPLO 1 (ping)

ping 10.20.22.151

tcpdump host 10.20.22.151

ethereal (host 10.20.22.151)

EXEMPLO 2 (ping record route)

ping -R 10.10.22.228

(IP record route option)

EXEMPLO 3 (non existent host)

ping 10.10.22.13

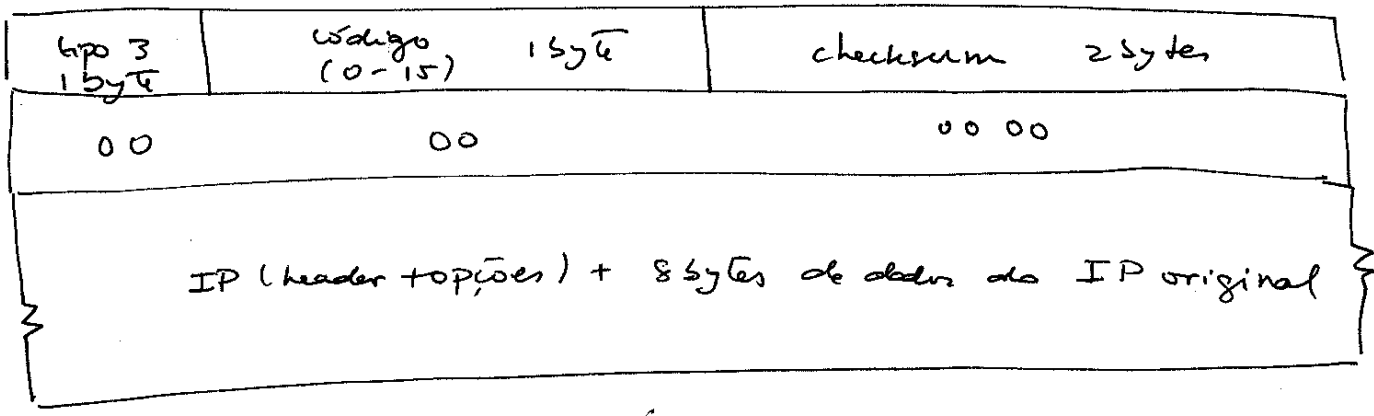
EXEMPLO 4 (port unreachable)

telnet 10.20.22.141 3827

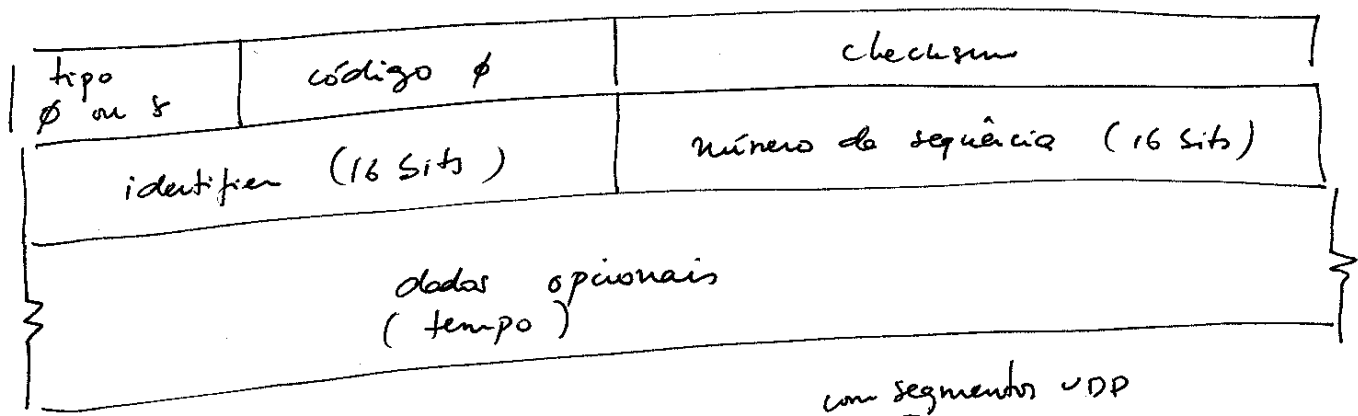
EXEMPLO 5 (host unreachable) (network unreachable)

telnet 10.10.20.75

ICMP unreachable message (ping 10.10.22.229)



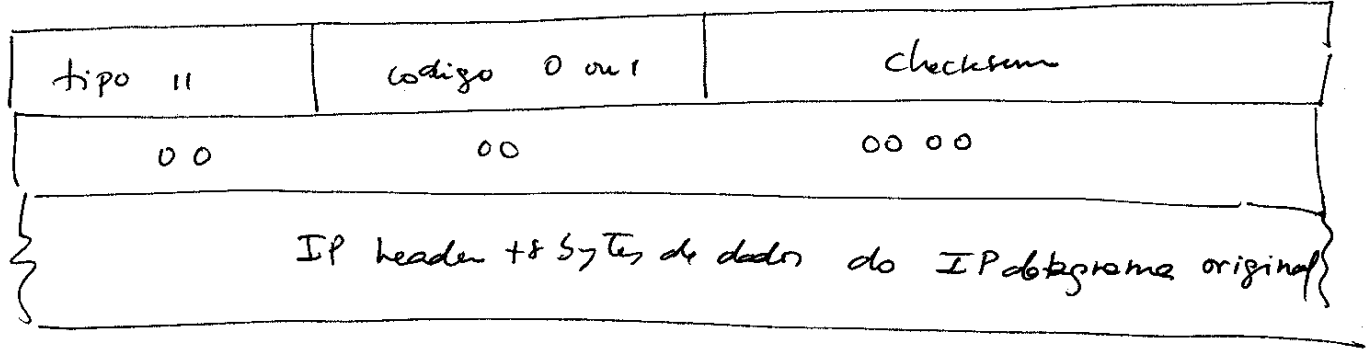
ICMP echo request / reply message



TRACEROUTE - envia 1º pacote IP com segmentos UDP com TTL = 1
 2º pacote IP " TTL = 2
 3º " " " TTL = 3

tracroute 193.136.224.1 (dns. si. ualg. pt)

ICMP time exceeded message



ICMP redirect message (ftp ftp.microsoft.com)
tcpdump host hostname and not udp
route -n
ftp ftp.microsoft.com
route -n (a tabela de routing deve ter agora mais
uma entrada)

