

Т С Р / І Р

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What is TCP Protocol?

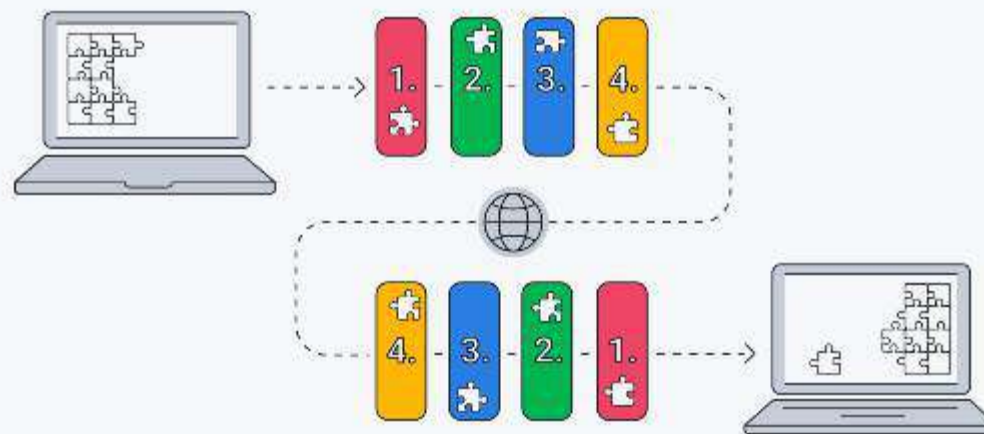


Какво е ТСР?

Мрежов протокол за управление на
обмяната на информация

Какво представяват мрежовите пакети

- ◆ Малки части от голямо съобщение



Заглавна част на TCP

TCP Header				
Bits	0-15			16-31
0	Source port			Destination port
32	Sequence number			
64	Acknowledgment number			
96	Offset	Reserved	Flags	Window size
128	Checksum			Urgent pointer
160	Options			

Сокети

Какво са
сокетите?

За какво се
използват?



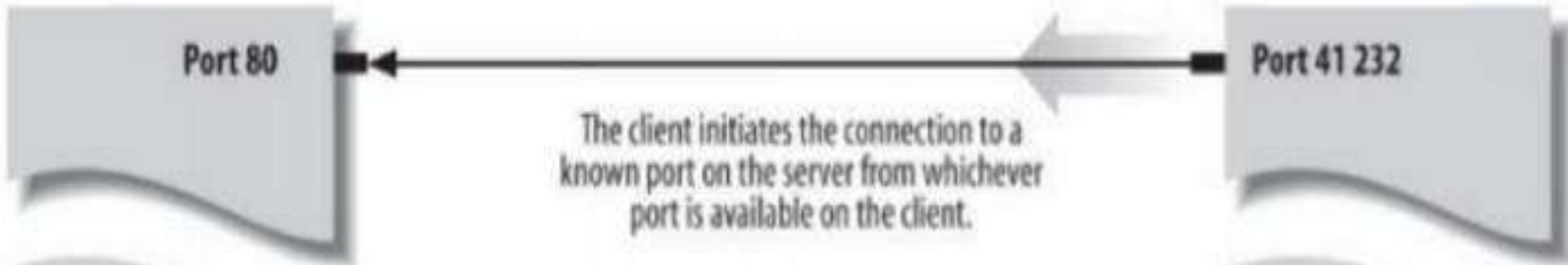
Server



Client

PERMANENT KNOWN PORT

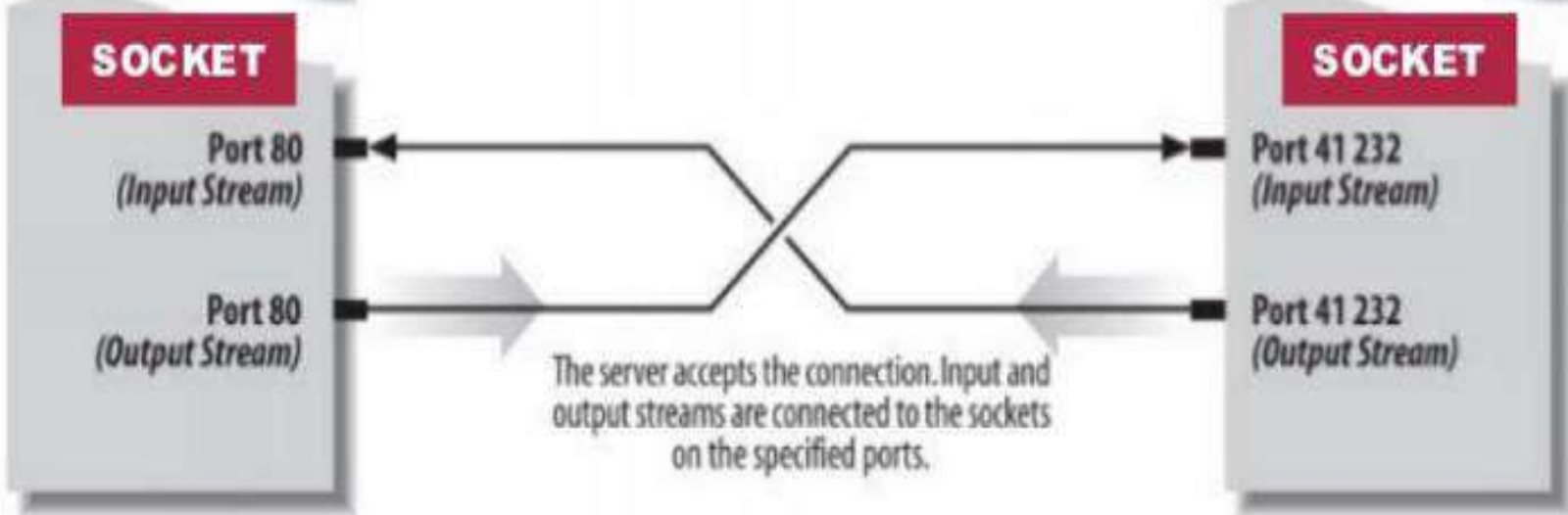
ANY UNUSED PORT



SOCKET

SOCKET

Max ports = 65535



IPv4

Address Size:
32-bit number

Address Format:
Dotted Decimal Notation:
192.168.1.1

Prefix Notation:
255.255.255.0
/24

Number of addresses:
 $2^{32} = 4,294,967,296$

IPv6

Address Size:
128-bit number

Address Format:
Hexadecimal Notation:
fe80::94db:946e:8d4e:129e

Prefix Notation:
/64

Number of addresses:
 $2^{128} =$
340,282,366,920,938,463,463,374,607,
431,768,211,456

Портове

Какво са портовете?

За какво се използват??

Видове

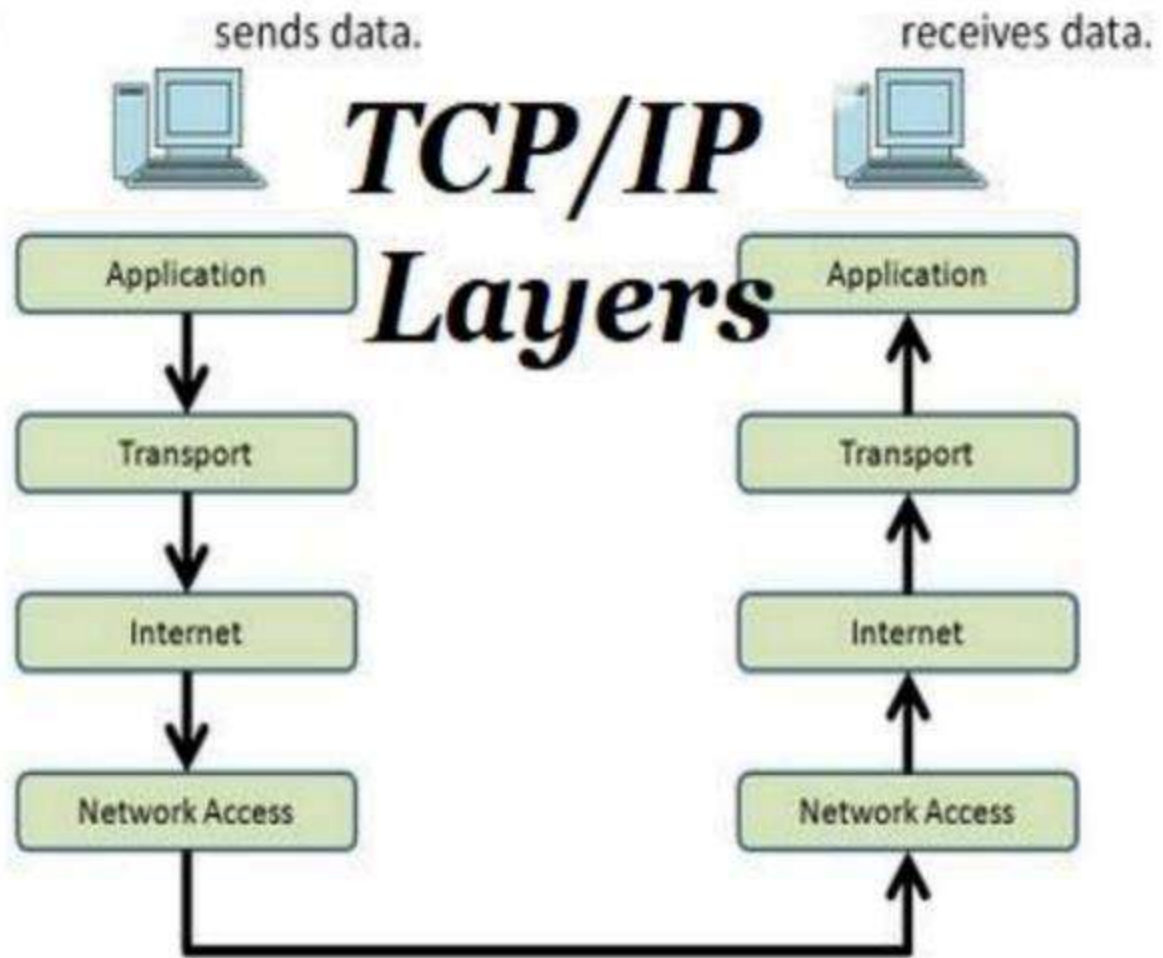


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Well-Known Ports

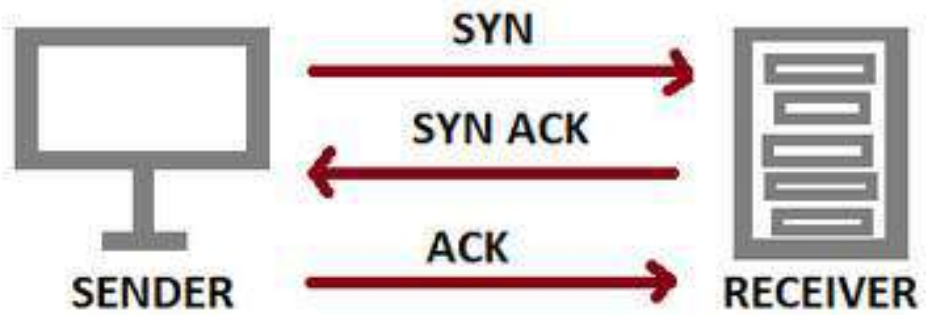
Service	Port	Function
HTTP	80	Web traffic
HTTPS	443	Secure web traffic
FTP	20, 21	File transfer
DNS	53	Name resolution
SMTP	25	Internet mail
POP3	110	Post Office Protocol (POP) mailbox
IMAP	143	Internet Message Access Protocol (IMAP) Mailbox
Telnet	23	Remote login
SSH	22	Secure remote logn



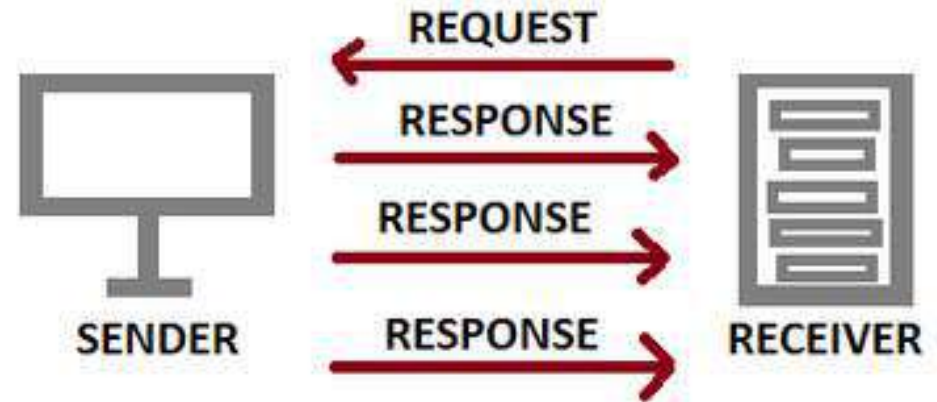
Четири
слоя на
TCP/IP
модела

TCP vs UDP

TCP HANDSHAKE



UDP



Display filter: http

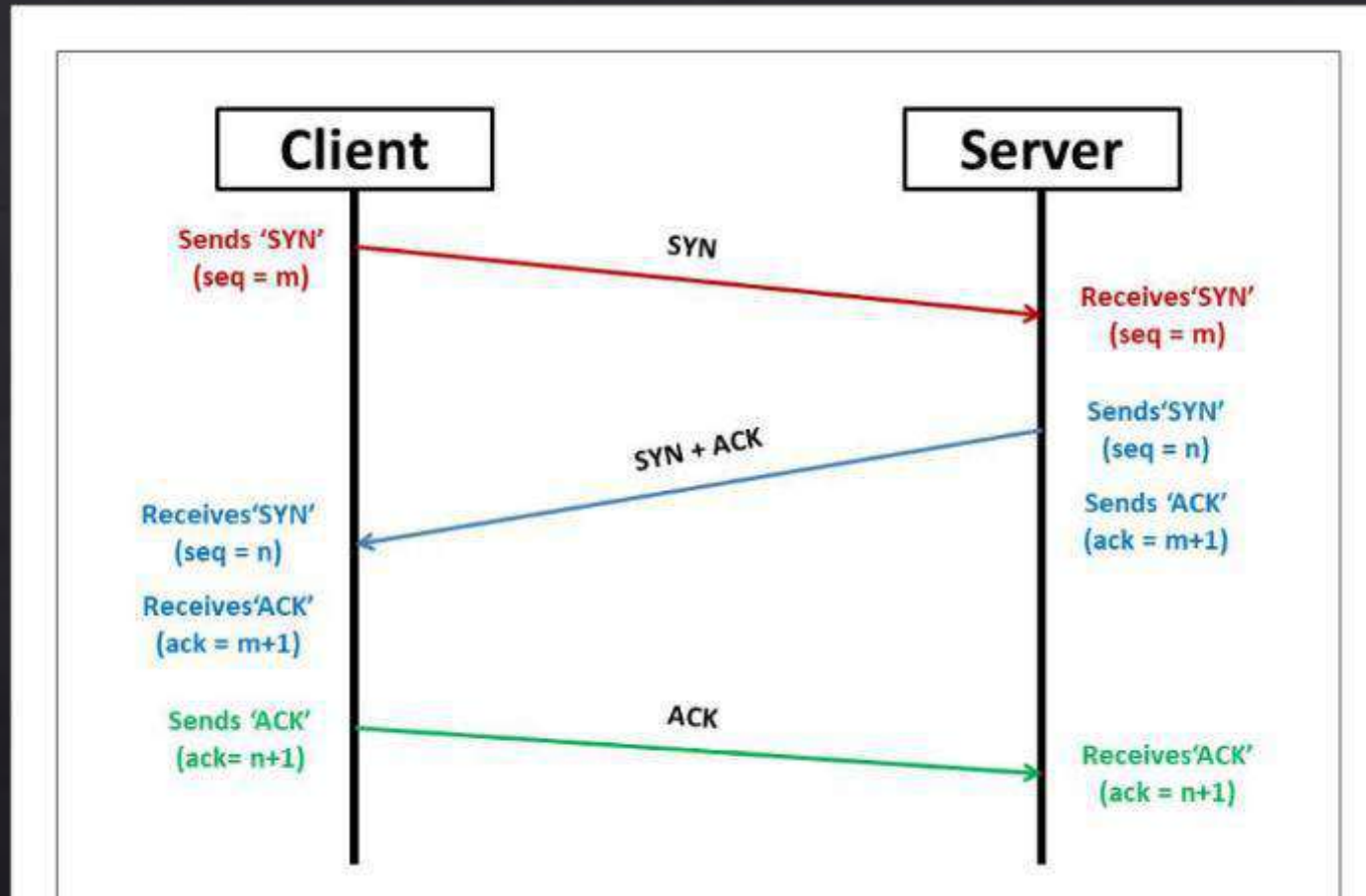
Protocol	% Packets	Packets	% Bytes	Bytes	Mbit/s	End Packets	End Bytes	End Mbit/s
Frame	100.00 %	16	100.00 %	4282	0.000	0	0	0.000
Ethernet	100.00 %	16	100.00 %	4282	0.000	0	0	0.000
Internet Protocol Version 4	100.00 %	16	100.00 %	4282	0.000	0	0	0.000
User Datagram Protocol	75.00 %	12	64.22 %	2750	0.000	0	0	0.000
Hypertext Transfer Protocol	75.00 %	12	64.22 %	2750	0.000	12	2750	0.000
Transmission Control Protocol	25.00 %	4	35.78 %	1532	0.000	0	0	0.000
Hypertext Transfer Protocol	25.00 %	4	35.78 %	1532	0.000	2	543	0.000
Online Certificate Status Protocol	6.25 %	1	18.75 %	803	0.000	1	803	0.000
eXtensible Markup Language	6.25 %	1	4.34 %	186	0.000	1	186	0.000

- ➔ Канален Слой
- ➔ Мрежови Слой
- ➔ Транспортен слой
- ➔ Приложен Слой

Help

Close

Wireshark demo



Three-way-handshake